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कौशल भारत-कुशल भारत

सत्यमेव जयते
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MINISTRY OF SKILL DEVELOPMENT
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Participant Handbook

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IT-ITeS

Sub-Sector
Software Product

Occupation
Product Support

Reference ID: **SSC/Q7201, Version 3.0**
NSQF Level 4

Technical Support Executive – Non Voice

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IT – ITeS Sector Skill Council NASSCOM
Sector Skill Council Contact Details:
Address: IT – ITeS Sector Skill Council NASSCOM
Plot No. – 7, 8, 9 & 10
Sector – 126, Noida
Uttar Pradesh – 201303
Web: www.sscnasscom.com
Phone: 0120 4990111 – 0120 4990172
This book is sponsored by IT-ITeS Sector Skill Council NASSCOM

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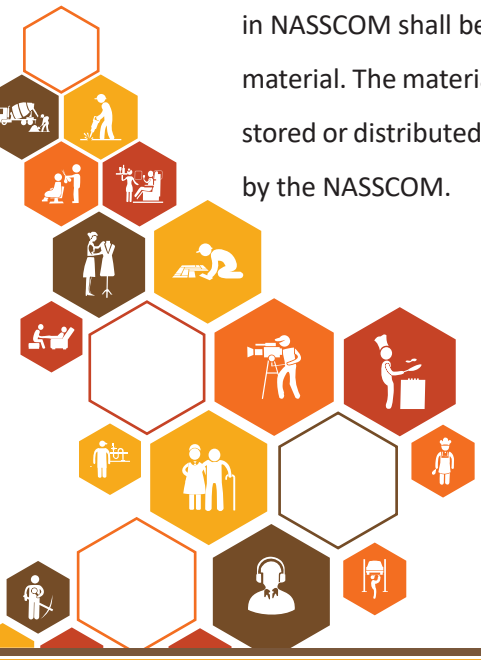

Skilling is building a better India. If we have to move India towards development then Skill Development should be our mission.

Shri Narendra Modi

Prime Minister of India


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Acknowledgements

NASSCOM would like to express its gratitude towards IT, especially towards its company representatives, who believe in our vision of improving employability for the available pool of engineering students. SSC NASSCOM makes the process easier by developing and implementing courses that are relevant to the projected industry requirements.

The aim is to close the industry-academia skill gap and create a talent pool that can withstand upcoming externalities within the IT industry.

This initiative is the belief of NASSCOM and concerns every stakeholder – students, academia, and industries. The ceaseless support and tremendous amount of work offered by IT members to strategize meaningful program training materials, both from the context of content and design are truly admirable.

We would also like to show our appreciation to Words-Worth Solutions for their persistent effort, and also for the production of this course publication.

Foreword

Based on several differentiators in the global arena, the reputation of the Indian IT-ITeS industry is built. Amongst those, manpower availability is of key prominence. With its readily available, vast pool of IT professionals, India stands true to its every engagement.

A shift is expected in the upcoming years where the global requirement will focus on domain knowledge and advanced technology skills. This landscape will be set across markets and occupation requiring heightened labour mobility. India is seen as a successor to the profits of the demographic dividend. India has the potential to foresee its emergence as the largest employable youth base in the time ahead. Where there are a number of countries ready to face retirement-ready and ageing labour force, India is confidently set to become the highly pursued workforce destination, catering to specialized services. Technical Support Executive is one of the growing areas and concern of global interest. Its outcome is the formal creation of job role framework and Qualification Pack (QP) for "Technical Support Executive". Skills required by IT Services industry are captured in the QP. This focuses on the field's entry- level position.

As per the World Economic Forum (2016), the requirement of workers in IT Companies by 2022 is speculated to be 1.8 million only in India. With the new and emergence business and various collaborations between the Government and private companies, the demand of the Technical Support Executives is expected to grow exponentially in the upcoming years.

The responsibility of network engineering, IT Infrastructure engineering, hardware and software related knowledge and providing helpdesk support are key among the instrumental job responsibilities of a Technical Support Executive. The job of a Technical Support Executive is to allow the right candidate to acquire appropriate resources for precise reasons and at accurate times.

IT-ITeS Sector Skills Council NASSCOM (SSC NASSCOM) has partnered with significant industry stakeholders to ensure that the academic courses that will be created are viable and relevant. Amongst the stakeholders, a prominent name is Words-Worth Solutions, who is responsible for the courseware and curricula designs.

Added to this, the requirement for faculty support is addressed via this program. The need is achieved with the help of latest advancements in pedagogy by acquainting trainers. We wish all the colleges and universities best of luck on their upcoming endeavour.

- Total STT duration – 420 Hours
  - Theory (120 Hours) – Classroom training
  - Practical (300 Hours) – Lab/ Employer premise
  - OJT (90 Hours) – On Job Training
- Usual number of working days in college for course study – 100 per semester
- STT course of 420 hours to be carried out in the pre-final semester
- Add-on topics on Soft skills, and Entrepreneurship also to be covered in the final module

Symbols Used


Key Learning Outcomes


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1. Introduction to the Job Role and Industry (Bridge Module)

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Unit 1.1 - Job Role of a Technical Support Executive (Non-Voice)

Unit 1.2 - An Introduction to the ITeS Sector

Key Learning Outcomes

At the end of this module, you will be able to:

1. Discuss the job role and responsibilities of a Technical Support Executive
2. Discuss the current trends of IT-ITeS sector in India

यूनिट 1.1: तकनीकी सपोर्ट एग्जीक्यूटिव (नॉन वॉइस) की भूमिका

Unit Objectives

At the end of this unit, you will be able to:

1. Analyse the responsibilities of a technical support executive in the non-voice process

1.1.1 Job Role of a Technical support Executive - Non Voice

India is one of the largest hubs of engineering service outsourcing. Presently, India outsources IT services to countries like US, UK, Japan, France, Spain, Germany, and Canada etc. The growing demand of IT services in India is shaping the future of the country. Even the Indian Economy is heavily dependent on the revenue generated by the IT industry.

Technical support Executive is a job role that requires meticulous technical knowledge. The job roles include responsibilities of building, designing, deploying, and maintaining the IT infrastructure exploiting the latest tools and technology. A Technical Support Executive asserts proper function and functional efficiency of the IT systems that support businesses.

The job description includes being responsible for performing multiple tasks for their wholesome objective of maintaining the infrastructure of an organization.

- Network Technical support Executive have to, as part of their responsibility, design solutions from mission needs and assess current systems to secure the best practices and balance by complying with federal policies and procedures. Executives manage and maintain broad area Virtual Private Networks (VPN)
- An IT technical support job description includes the administration of the Middleware application server, such as Oracle Weblogic server and IBM WebSphere server and automated workflow tools. Technical Suppoert executives work with server virtualization technologies, such as VMware, Red Hat Virtualization or Oracle VM. Additionally, a network support executive monitors administration of Windows, Linux or Mac OS Operating Systems and are conversant with systems administration
- Technical support includes troubleshooting applications. Technical Support Executive partner with the application development team on application building, implementation and fixing of issues
- Executives put together and install infrastructure components on networks and servers, ensure that the technical performance aspects in the infrastructure environment are optimized, including database, network, and application server performance.
- An IT Technical Support Executive makes sure that the infrastructure components are working in tandem and can be executed without compilation errors in various platforms and environments. They understand how network hardware and technologies work, besides shared storage technologies. Executives manage the host environment inclusive of web servers, database servers, VMWare, Cisco, Citrix, SAN, and blades, etc., to ensure proper tuning plus capacity

- A network Technical Support Executive is also required to collaborate and participate in activities to make certain there is knowledge improvement, and share and integrate programs within as well as across the whole work as suitable and lead projects, and take part in evolving client project activities like position papers, special studies, and evaluations
- A Technical Support Executive's job description will include updating hardware required for maintenance of servers and the network, fixing any network and connectivity issues that could crop up, detecting system and application issues, and ensuring the smooth flow of data and voice throughout the organization
- Technical Support Executives manage the security of computer systems and inter-application information transfers. They ensure optimum uptime for complete network services and servers, establish models to maintain and configure entire desktop and mobile computers

Unit 1.2: An Introduction to the ITeS Sector

Unit Objectives

At the end of this unit, you will be able to:

1. Analyse the key factors of the IT-ITeS sector
2. Discuss the current trends of the sector

1.2.1 An Overview of the IT- ITeS Sector

The Technical Support Executive - Non Voice is a part of the ITeS sector. This sector aims at communicating with the customers to address his/her queries, requests and complaints or also to introduce company's products and services to him. These interactions are also used to market and sell the ITeS products and the service. The Indian IT Enabled Services industry represents one of the most successful industries showing consistent rapid growth over the past few years.

ITeS (Information Technology Enabled Services)

Information Technology Enabled Services (ITeS), is a form of outsourced service which has emerged due to involvement of IT in various fields such as telecommunication, banking, finance, telecom, insurance, and travel among others. Some of the examples of ITeS are Chat based interactions, medical transcription, back-office accounting, insurance claim and credit card processing.

The Indian IT and Information Technology Enabled Services (ITeS) sectors go hand-in-hand in every aspect. The industry has not only transformed India's image on the global platform, but also fuelled economic growth by energising the higher education sector (especially in engineering and computer science). These industries employ over 10 million Indians and, hence, have contributed significantly to economic growth and social transformation in our country.

About ITeS in India

- Call Centres provide customer interaction and communication services
- Back office operations of various large Companies are done in BPOs, eg. British Airways has its reservation system running out of India
- Most of the top international banks channel their data- churning needs to their units in India
- ITeS sector includes services ranging from
- Call Centres
    - Claims processing, e.g. Insurance
    - Office operations such as accounting, data processing, data mining
    - Billing and collection, e.g. Telephone bills
    - Internal audit and pay roll, e.g. Salary bills on monthly basis
    - Cash and investment management, e.g.
    - Routine jobs given to a third party and giving importance to core business

- With an increased focus on penetration and tapping of the international markets, and keeping diversification and cost-effectiveness in mind, companies in the IT industry have been resorting to hiring off-site manpower
- This talent pool is carefully chosen, according to the criteria predefined by the onsite Human Resources department
- The off-site employees should be highly skilled and updated on latest technological prowess, and should be able to communicate fluently in English and other local languages, depending on the off-site locations
- They should be well-versed with ground-breaking technical solutions like the **SMAC (Social Media, Mobility, Analytics and Cloud-Computing), Artificial Intelligence (AI), Robotics and Embedded Systems**

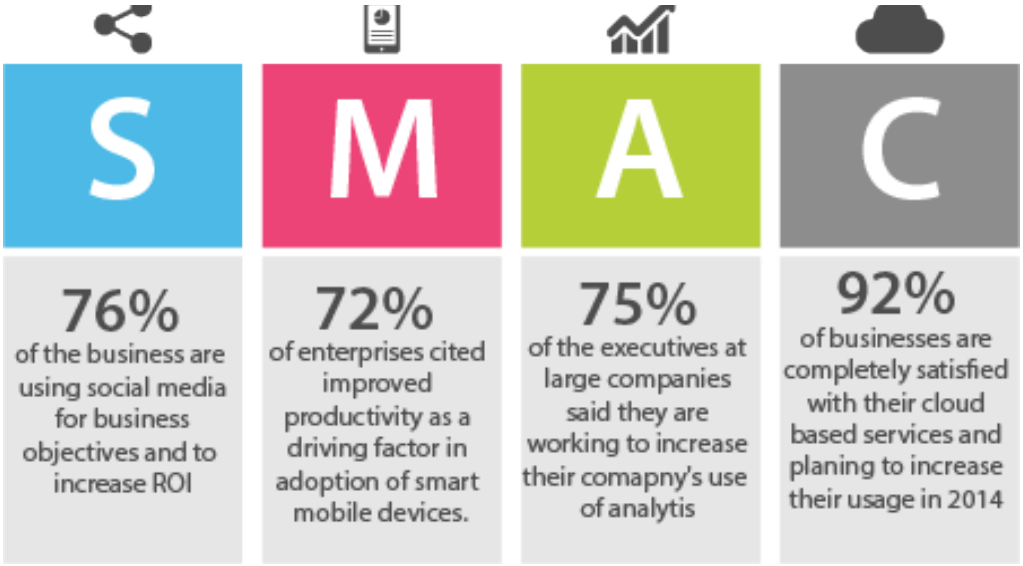

Fig 1.2.1.1: SMAC Model (Image courtesy: www.socialdnalabs.com)

Information technology (IT) is the application of computers and telecommunications equipment to store, retrieve, transmit or analyse data, often in the context of a business or other enterprise. The term is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones.

Today, a country's IT potential is paramount for its March towards global competitiveness, healthy Gross Domestic Product (GDP) and meeting up energy and environmental challenges.

India is one of the fastest-growing IT services markets in the world. It is also the world's largest out sourcing destination. The country's cost competitiveness in providing IT services continues to be its USP in the global sourcing market.

India has the potential to build a US$ 100 billion software product industry by 2025, according to Indian Software Product Industry Round Table (ISPIRT).

Why is the IT sector growing?

- Rapid industrialization
- Partial privatization of telecommunication
- Growth of IT parks in the country
- Development of SEZ; which also help IT companies get tax benefits

- A large number of resources readily available in the country
- Low operating costs
- Tax breaks and cooperative policies offered by the government

Summary

- A Technical Support Executive is a resource aimed at providing the customer or end user with information and support related to an organization's products and services
- The purpose of a Technical Support Executive - Non Voice is usually to troubleshoot problems or provide guidance about IT and IT related products such as computer hardware, system administration and maintenance or software
- Organizations provide help desk support to their customers through various channels, namely, toll-free numbers, websites, instant messaging, or email. Likewise, in-house help desks in offices provide assistance to employees
- The advent of new technology and the demand for creative, out-of-the-box deliverables in every possible industry has changed the face of IT Services, on both global and domestic fronts
- Individuals at this job are mainly responsible for the smooth running of computer systems and ensuring users get maximum benefits from them
- Individual tasks vary depending on the size and structure of the organization, but may include installing and configuring computer hardware operating systems and applications
- Monitoring and maintaining computer systems and networks
- Taking staff/clients through a series of actions, either face to face or over the telephone to help set up systems or resolve issues.

Notes

Exercise

State True or False against the following statements

1. Technical support Executive is a job role include responsibilities of building, designing, deploying, and maintaining the IT infrastructure exploiting the latest tools and technology.
2. Troubleshooting falls out of the competency level of a Technical support Executive – Non Voice.
3. An IT Technical Support Executive makes sure that the infrastructure components are working in tandem.
4. M stands for 'Media' in the SMAC module.
5. India has the potential to build a US$ 100 billion software product industry by 2023.

Activity

- This activity is in the form of "Expert Session"
- The trainer will invite an industry expert to share his/ her experience, set of desired skills and work-life at an IT hub with the students
- The trainees must wear Student's ID and carry pen and notebook
- They should take down the important notes
- If they have any doubt, they will raise their hand and ask the question to the expert
- After the session the trainer and the trainees will thank the expert for spending his/ her valuable time
- The trainer will recap the session in the next class to ensure that the trainees have understood the points shared by the industry expert.

Notes

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2. Attending Customer Queries

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Unit 2.2 - Working with Python

Unit 2.2 - Identify the Nature and Range of Queries

SSC/N7201

Key Learning Outcomes

At the end of this module, you will be able to:

1. List the various segments in non-voice customer service, tools, and techniques
2. Identify the role and importance of non-voice technology tools for resolving queries

Unit 2.1: Capture Query and Identify SLA for Resolution

Unit Objectives

At the end of this unit, you will be able to:

1. Use techniques for careful reading
2. Implement policies provided as per guidelines

2.1.1 Use Techniques for Careful Reading

A CCE responds to customer's queries and requests, gives details about products and services and resolve complaints with regular follow-ups. They are the ones customers come in contact with in case of any doubt.

In this Module, we will get acquainted with types of interactions customer relationship executive has over chat or email.

Solve routine problems via web or chat

Query is question or inquiry. Through a query a customer tries to get information about a product or service.

Some of the areas that a query can be about include:

- Price comparison
- Availability of product
- Product information

Live chat provides a quick, two-way interaction suitable for simple problem solving, often in support of self-service. Online chat offers a powerful engagement platform that is real-time, secure, personal and very cost-effective — attractive attributes as companies look to engage more customers online while reducing their chat/ email volumes into the contact centre. However, the key is to launch and manage online chat effectively to avoid potential customer frustration and brand damage.

How to start a chat:

1. **Greet the customer:** The first and foremost thing to keep in mind while starting a conversation with a customer is to greet him/her. The greeting should be like a warm welcome to the customer ensuring to be with him until he/she is done with the query or request raised. Though, greeting should be according to the company's prescribe procedure, avoid keeping it wordy and then come to offer help right away.

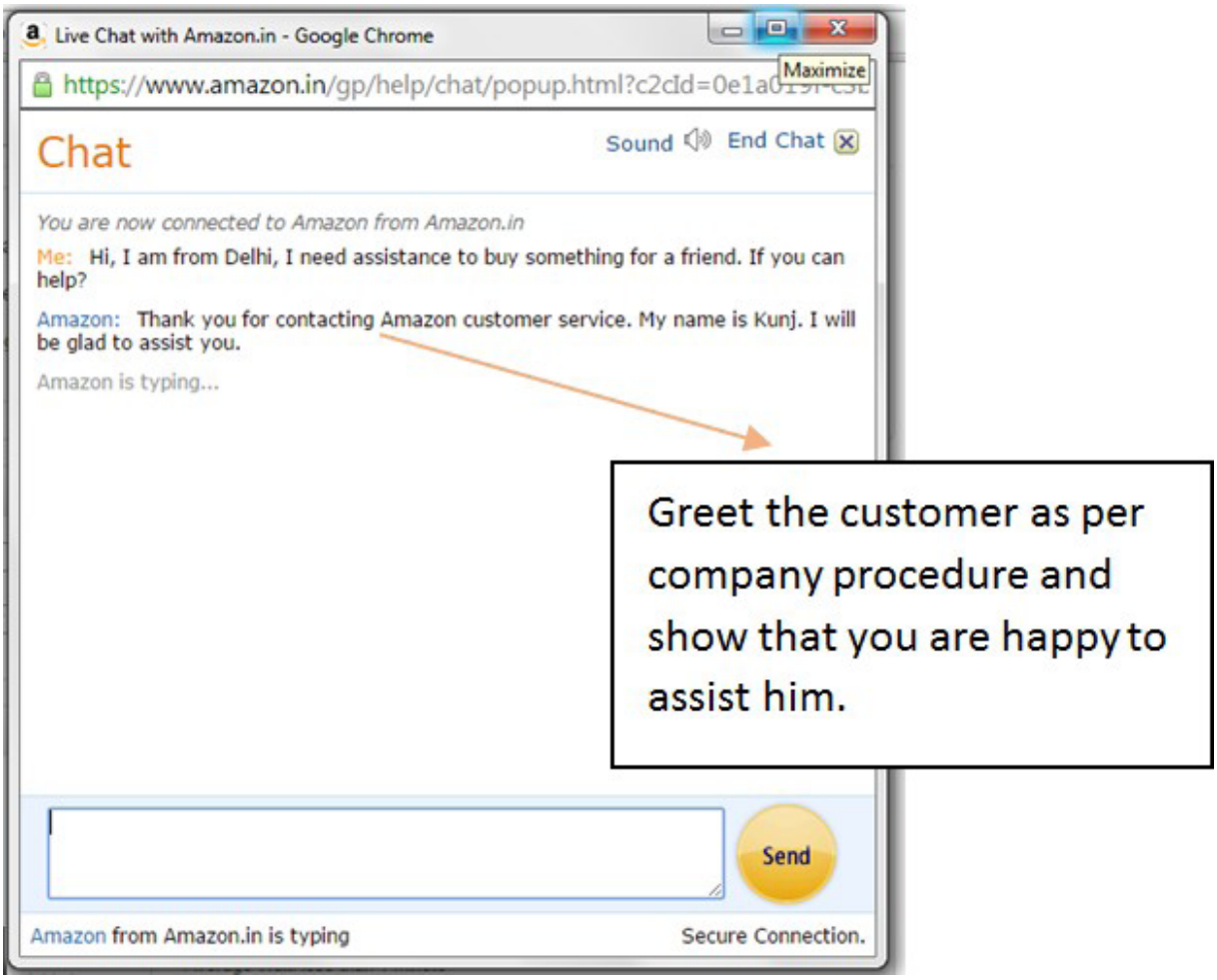


Fig 2.1.1.1: Start a chat with proper greeting sentence

2. **Verifying details:** Ask the customer his details so that you can be sure of who he is and from where is he calling, whether your service area is same or not, whether customer is the registered one or not, if yes, your CRM data will give you the information which you can update based on customer's query or request.

Obtaining Requests over Email

This is another way of receiving customer's queries/requests/complaints and sending them solutions. Resolution of problems through emails does not happen in real time and thus the customer relationship executive needs to see the category of problem, decide turnaround time for that, inform customer about it and get back to the customer before that time period.

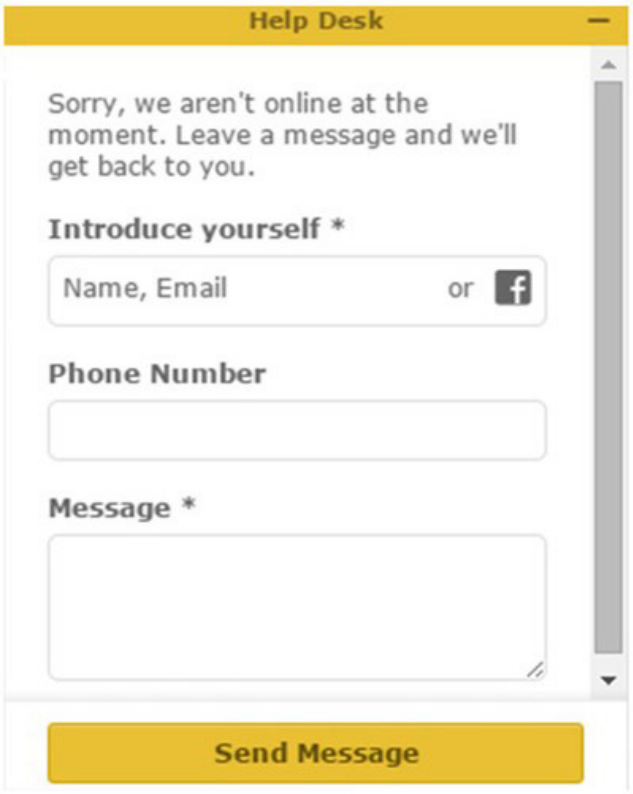


Fig 2.1.1.2: Obtain information from customers over email

Complaint Sent through Email

A customer sends a complaint to the company through email on 28-10-2014 complaining about the delay in delivery of his ordered product. The customer also complains about the website not showing the order progress.

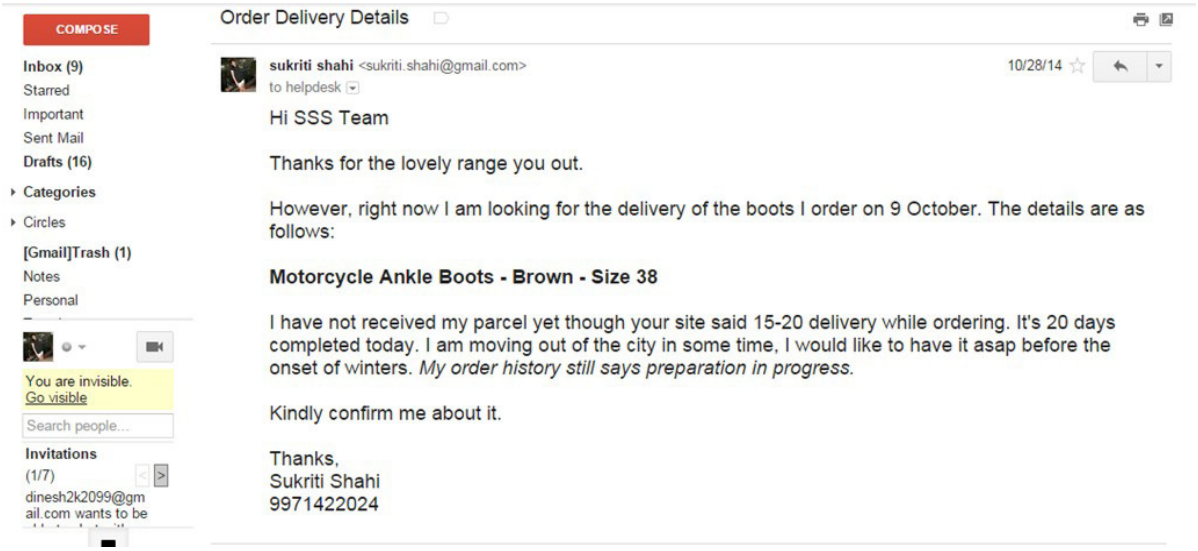


Fig 2.1.1.3: Read the complaint email carefully before responding

The answer to the same is received on the same date after some time which clearly acknowledges the customer's problem and mentions the turnaround time for the same.

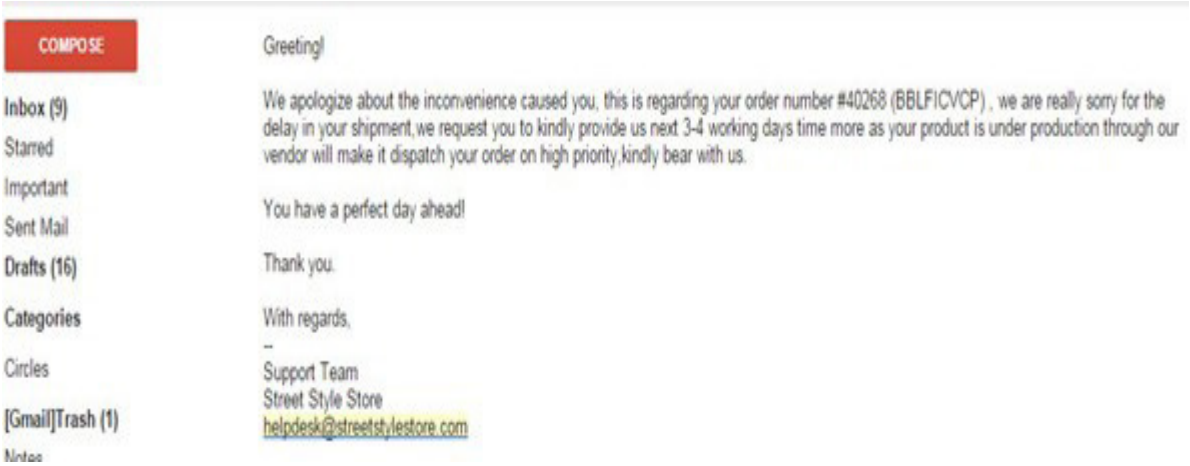


Fig 2.1.1.4: Respond to the customer after reading the email carefully

Case Study 1: Price Comparison

In this example, the customer is inquiring about a foreign brand price difference in India and abroad.

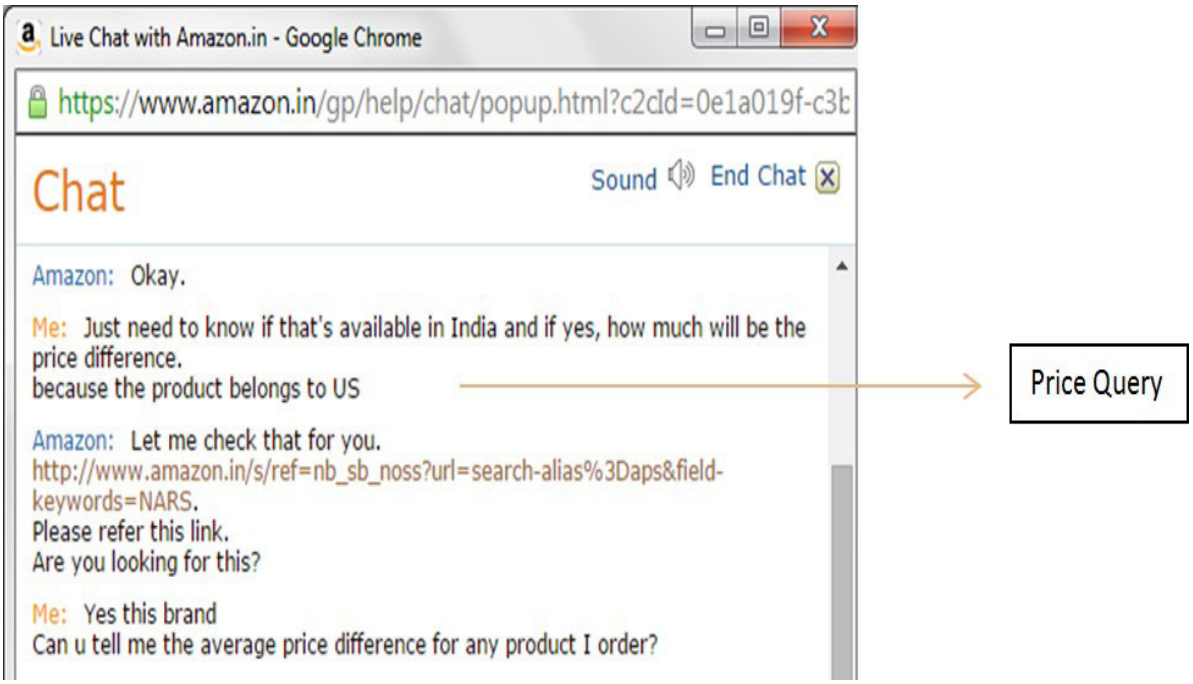


Fig 2.1.1.5: An email regarding price comparison

Case Study 2: Request for Assistance

In this example, the customer is requesting the customer relationship executive to help him out on deciding a gift for a baby's first birthday. The customer is requesting to help him plan a small surprise gift.

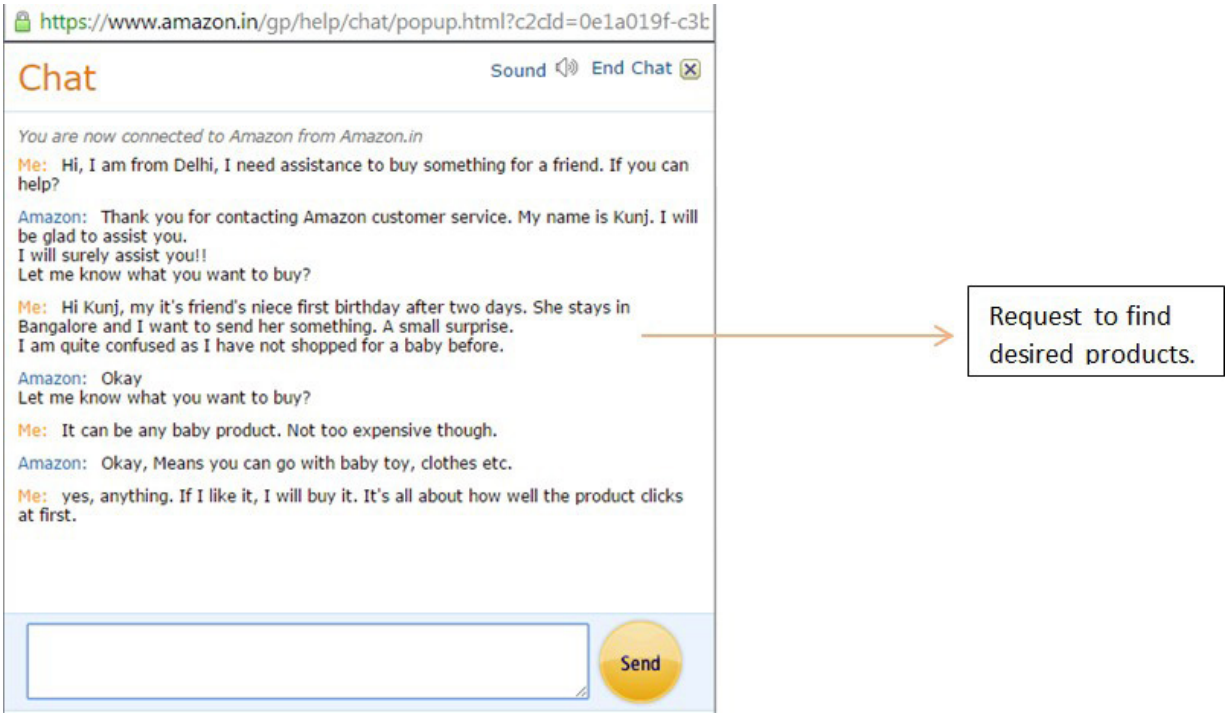


Fig 2.1.1.6: An Example of request for assistance

Unit 2.2: Identify the Nature and Range of Queries

Unit Objectives

At the end of this unit, you will be able to:

1. Discuss and demonstrate how to resolve
   a. Accounts issue
   b. Network connectivity issue
   c. Hardware issues
   d. Operating system issues
   e. Voice/ telephone issues
   f. Database issues

2.2.1 Account Maintenance/Access Problems

Every organization likes to have the systems secured. Setting a password is a fundamental action to prevent unauthorized access to the systems. The password protects the private information stored in the system. Here is the process to set password and user name.

Set Password

1. Click the "Start" button. Click "Control Panel," and then click "Add or remove user accounts" under the section titled "User Accounts and Family Safety"
2. Click "Continue" if the User Accounts Control asks for permission to make the change
3. Click your account name in the list, and then click "Create a password"
4. Enter a password in the text bars. To create a strong password, create a combination of random letters, number and symbols that is at least eight characters long
5. Avoid using your name, your company's name, identifiable information such as your pet's name or a complete word
6. Type a password hint into the text bar, and then click "Create password"
7. Reboot your computer and log in to your account with your new password

Change Password

1. Open Control Panel
2. Click Add or remove user accounts
3. Click the account you want to change
4. Click Change the password

How to set or change your user Account Name?

Click the Windows Start Menu Orb and Type in user accounts then Select the User Accounts link from the list

- Under your account, Click Change your account name
- Type in a new name you would like to use from now on in Windows 7 and Click Change Name

2.2.2 Networking/Connectivity Problems

Troubleshooting is a systematic approach to problem solving that is often used to find and correct issues with complex machines, electronics, computers and software systems. The first step in troubleshooting is gathering information on the issue, such as an undesired behaviour or a lack of expected functionality.

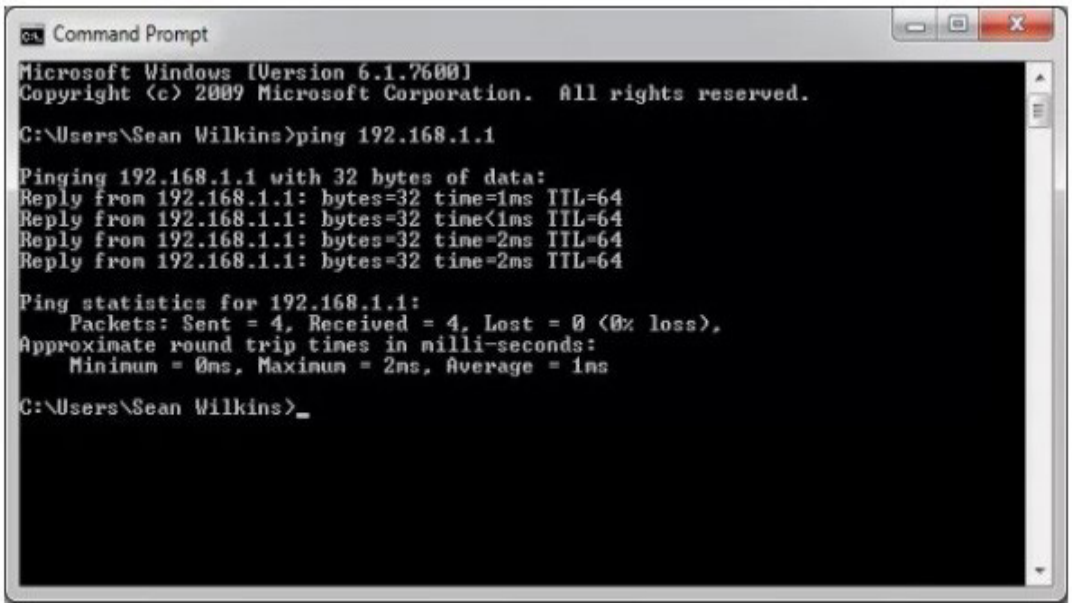
Essential Tools

Network troubleshooting tools are a necessity for every network administrator. When getting started in the networking field, it is important to amass a number of tools that can be used to troubleshoot a variety of different network conditions.

While it is true that the use of specific tools can be subjective and at the discretion of the executive, the selection of tools in this article has been made based on their generality and common use. This article reviews the top 10 basic tools that can help you troubleshoot most networking issues.

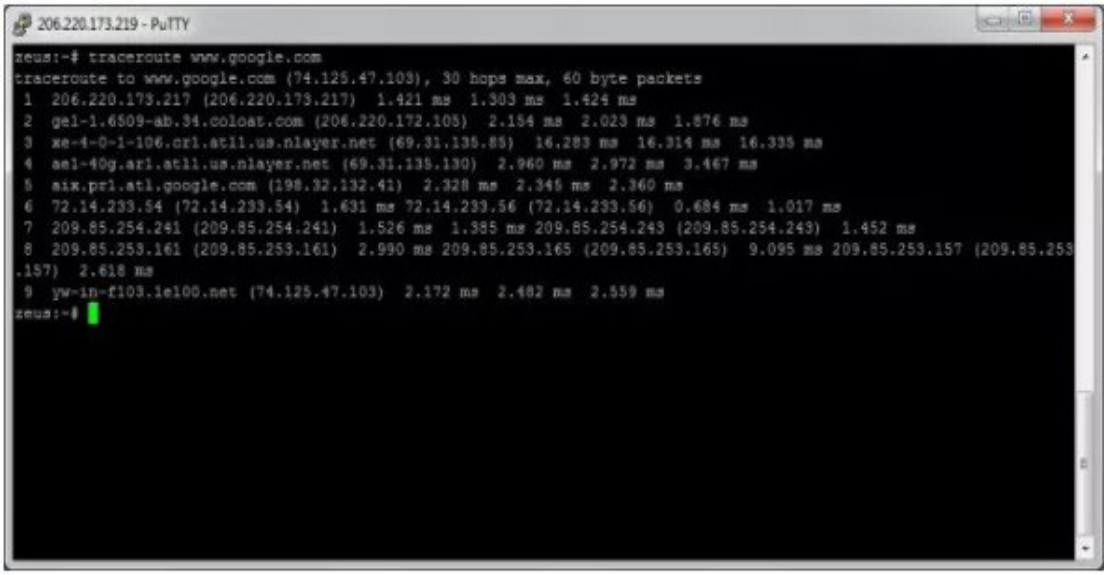
1. **Ping**

   The most commonly used network tool is the ping utility. This utility is used to provide a basic connectivity test between the requesting host and a destination host. This is done by using the Internet Control Message Protocol (ICMP) which has the ability to send an echo packet to a destination host and a mechanism to listen for a response from this host. Simply stated, if the requesting host receives a response from the destination host, this host is reachable. This utility is commonly used to provide a basic picture of where a specific networking problem may exist. For example, if an Internet connection is down at an office, the ping utility can be used to figure out whether the problem exists within the office or within the network of the Internet provider.



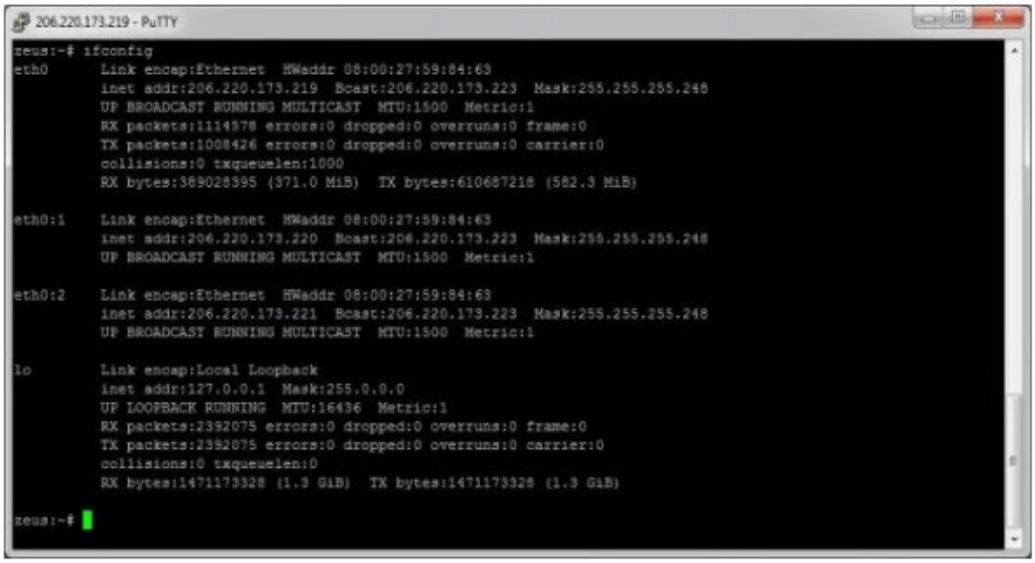
2. Tracert/ Traceroute

Typically, once the ping utility has been used to determine basic connectivity, the tracert/ traceroute utility can used to determine more specific information about the path to the destination host including the route the packet takes and the response time of these intermediate hosts. Figure 2 below shows an example of the tracert utility being used to find the path from a host inside an office to www.google.com. The tracert utility and traceroute utilities perform the same function but operate on different operating systems, Tracert for Windows machines and traceroute for Linux/ UNIX based machines.



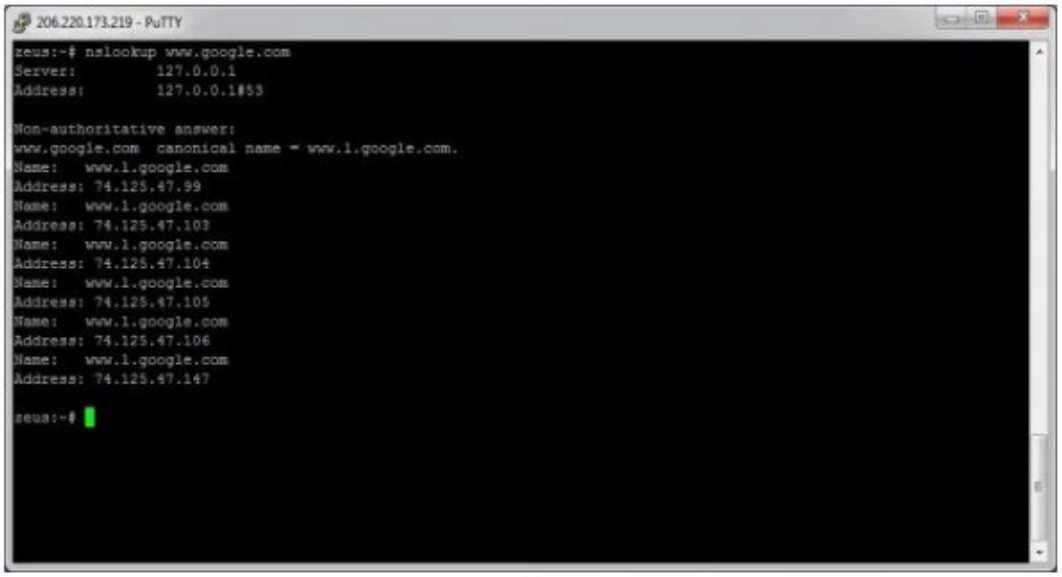
3. Ipconfig/ Ifconfig

One of the most important things that must be completed when troubleshooting a networking issue is to find out the specific IP configuration of the variously affected hosts. Sometimes this information is already known when addressing is configured statically, but when a dynamic addressing method is used, the IP address of each host can potentially change often. The utilities that can be used to find out this IP configuration information include the ipconfig utility on Windows machines and the ifconfig utility on Linux/Unix based machines.



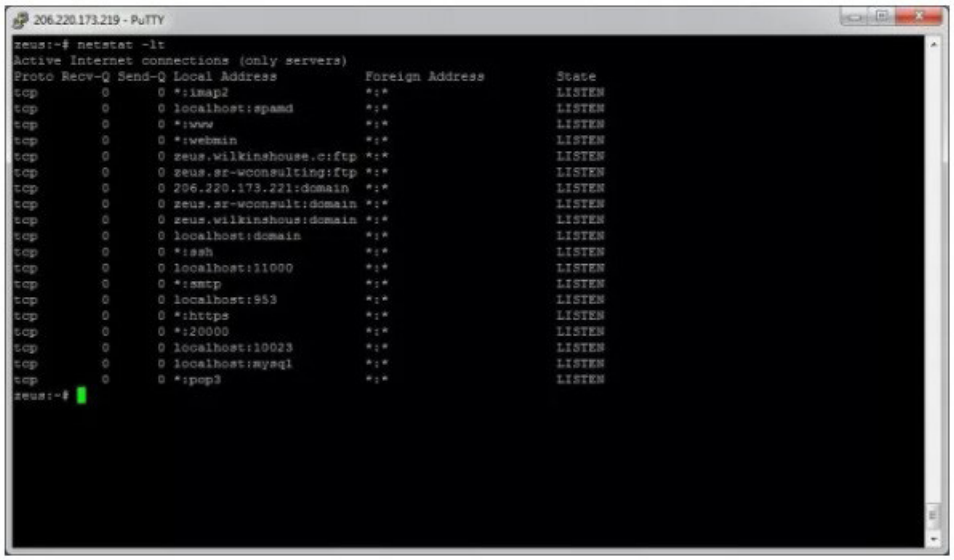
4. **Nslookup**

Some of the most common networking issues revolve around issues with Dynamic Name System (DNS) address resolution issues. DNS is used by everyone using the Internet to resolve commonly known domain names (i.e. google.com) to commonly unknown IP addresses (i.e. 74.125.115.147). When this system does not work, most of the functionality that people are used to goes away, as there is no way to resolve this information. The nslookup utility can be used to lookup the specific IP address associated with a domain name. If this utility is unable to resolve this information, there is a DNS issue. Along with simple lookup, the nslookup utility is able to query specific DNS servers to determine an issue with the default DNS servers configured on a host.



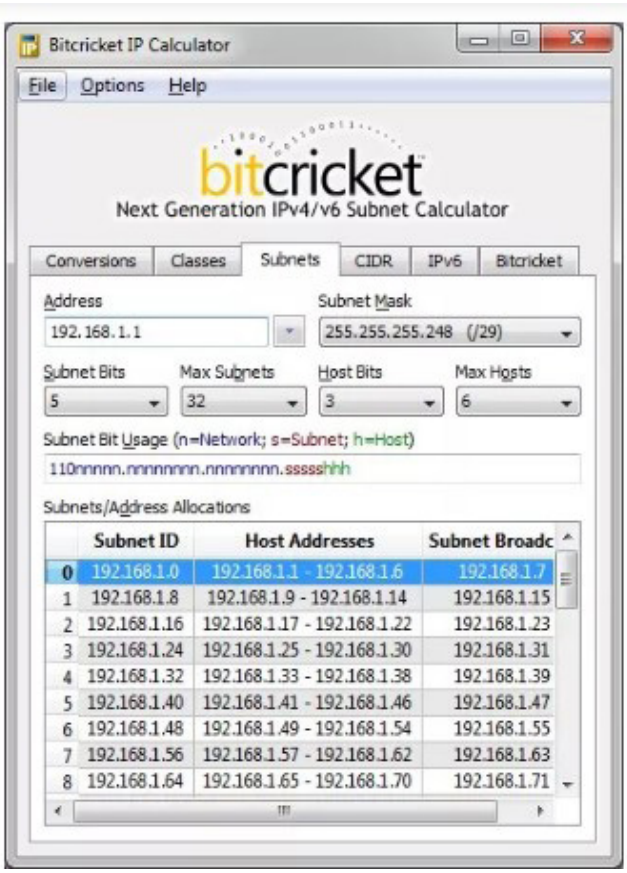
5. **Netstat**

Often, one of the things that are required to be figured out is the current state of the active network connections on a host. This is very important information to find for a variety of reasons. For example, when verifying the status of a listening port on a host or to check and see what remote hosts are connected to a local host on a specific port. It is also possible to use the netstat utility to determine which services on a host that is associated with specific active ports.



6. Subnet and IP Calculator

One of the most important tools in the belt of a junior network engineer is an IP network calculator. These can be used to unsure a correct IP address selection and with this a correct IP address configuration. While this type of tool is used by senior level network engineers, much of the information obtained from the tool becomes simpler to calculate the longer and more experience you have in the field. Two of the more commonly used free IP calculators include Wildpackets (Bitcricket) Network Calculator and Solarwinds Advanced Subnet Calculator.



7. Route

The last of the tools covered in this article is the route utility. This utility is used to display the current status of the routing table on a host. While the use of the route utility is limited in common situations where the host only has a single IP address with a single gateway, it is vital in other situations where multiple IP address and multiple gateways are available.

Basic Troubleshooting for Network Issues

Because of the variety of network hardware, network configurations, operating systems, and setups, not all of the below information may apply to your network or operating system.

Adapter resources

Verify that the network adapter is properly installed and detected by the computer with no conflicts. In Microsoft Windows, open the Device Manager and verify there are no errors. “Network adapters” should be present for each network adapter installed in the computer, similar to the example on the right.

Wired Network

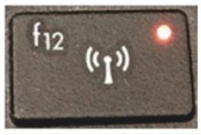
If this is a wired network, verify that the network cable is properly connected and make sure the LEDs next to the network jack are properly illuminated. For example, a network card with a solid green LED or light usually indicates that the card is either connected or receiving a signal. If the green light is flashing, this is an indication of data being sent or received. The picture to the right is an example of a LAN port with two LED indicators next to the RJ-45 port. With this port, one LED will light up if connected properly and the other will flash when transmitting data.

If there are no lights or the lights are orange or red, the card may be bad, not connected properly, or may not be receiving a signal from the network. If you are on a small or local network and have the capability of checking a hub, switch or router, verify that the cables are properly connected and that it has power. If after checking the connections, the LED indicators appear bad, the network adapter, port, or cable may be defective.

Wireless Network

Laptop Wi-Fi button

Laptop Wi-Fi Function Key



If you’re using a laptop with a wireless network, look for the laptop’s Wi-Fi button and make sure it is turned on. Many laptops have a Wi-Fi button that allows the wireless network to be turned on and off. The Wi-Fi button is often located just above the keyboard or on the front edge of the laptop, but it also may be integrated with F-key as well. The pictures to the right are examples of a Wi-Fi button and Wi-Fi indicator on F key that are enabled.

If the button is turned on, make sure you’re using the correct Wi-Fi hotspot by right-clicking on the Network icon in the Windows Notification and clicking “Connect to a network”. Usually, the network with the strongest connection (the most bars) will be your wireless router.

Finally, when connecting to most wireless networks, you need to enter the proper SSID password to connect to the network. If the incorrect password has been entered, you will not be able to access the network.

Adapter Functionality

Verify that the network card is capable of pinging itself by using the ping command. Windows users can ping the computer from a Windows Command Line Unix and Linux users can ping from the shell.

To ping the card or the local host, type either of the following commands:

```
ping 127.0.0.1
```

or

```
ping localhost
```

Connect to the Router

If all of the above steps have been checked, and your network has a router, make sure the computer can connect to the router by performing the below commands.

Determine the Routers Address

Using the ipconfig command (or ifconfig command for Linux), determine the router's address by looking at the Gateway address. Below are the steps for Microsoft Windows users. Linux users can substitute ipconfig for ifconfig.

1. Open the Windows command line
2. At the command prompt, type ipconfig and press Enter. You should see output similar to the example below.

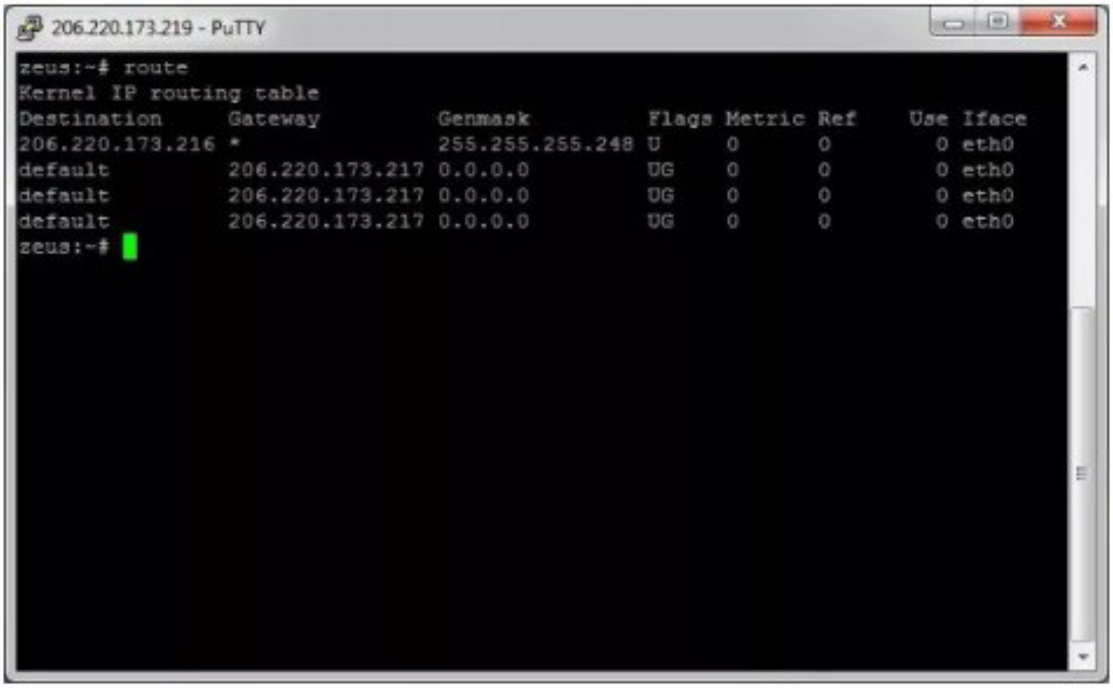
The Default Gateway is the address of your router. Most home routers have a gateway address that starts with 192.168, like the address shown above. Assuming your gateway address is 192.168.1.1, attempt to ping the router to see if it can send and receive information by running the below command.

ping 192.168.1.1

- If you get replies back from the router, the connection between your router and computer are good, and you can skip to the next step.
- If you do not receive any replies back from the router, either the router is not set up properly, or your connection between the router and the computer is not correct. Reset your router to make sure it is not a problem with your router by following the steps below.

1. Turn off the power to the computer and leave it off.
2. Unplug the power to your router and cable modem or DSL modem.\
3. Leave the power cables disconnected for 10-15 seconds and then plug in your modem and then your router again.
4. Finally, turn on your computer again and repeat this step to see if you can ping your router.

If you have a wireless network and followed the above steps, but cannot ping the router, turn the computer off again and connect the computer to the router using a network cable instead of wirelessly. If a wire also does not work, contact the manufacturer of the router for additional support or replacement.



2.2.3 Hardware Problems

Most of the time, problems can be fixed using simple troubleshooting techniques, like closing and reopening the program. It's important to try these simple solutions before resorting to more extreme measures. If the problem still isn't fixed, you can try other troubleshooting techniques.

- **Power Button Will Not Start Computer:**

  Solution 1: If the computer does not start, start by examining the power cord to confirm that it is plugged securely into the back of the computer case and the power outlet.

  Solution 2: If it is plugged into an outlet, ensure it is a working outlet. To check the outlet, plug in another electrical device, such as a lamp.

  Solution 3: If the computer is plugged in to a surge protector, verify that it is turned on. This might require reseting the surge protector by turning it off and then back on. You can also plug a lamp or other device into the surge protector to verify that it's working correctly.

  Solution 4: If you are using a laptop, the battery may not be charged. Plug ththe ACadapter into the wall, and then try to turn on the laptop. If it still doesn't start up, you may need to wait a few minutes and try again.

- **All Programs on The Computer Run Slowly:**

  Solution 1: Run a virusscanner. You may have malware running in the background that is slowing things down.

  Solution 2: Your computer may be running out of hard drive space. Try deleting any files or programs you don't need.

  Solution 3: If you're using a PC, you can run Disk Defragmenter.

- **The Computer Is Frozen:**
  Solution 1 (Windows only): Restart Windows Explorer. To do this, press and hold Ctrl+Alt+Delete on your keyboard to open the Task Manager. Next, locate and select Windows Explorer from the Processes tab and click Restart. You may need to click MoreDetails at the bottom of the window to see the Processes tab.
  Solution 2: Press and hold the Power button. The Power button is usually located on the front or side of the computer, typically indicated by the power symbol. Press and hold the Power button for 5 to 10 seconds to force the computer to shut down.
  Solution 3: If the computer still won't shut down, you can unplug the power cable from the electrical outlet. If you're using a laptop, you may be able to remove the battery to force the computer to turn off.
- **The Screen Is Blank:**
  Solution 1: The computer may be in Sleep mode. Click the mouse or press any key on the keyboard to wake it.
  Solution 2: Make sure the monitor is plugged in and turned on.
  Solution 3: Make sure the computer is plugged in and turned on.
  Solution 4: If you're using a desktop, make sure the monitor cable is properly connected to the computer tower and the monitor.
- **The Mouse or Keyboard Has Stopped Working:**
  Solution 1: If you're using a wired mouse or keyboard, make sure it's correctly plugged into the computer.
  Solution 2: If you're using a wireless mouse or keyboard, make sure it's turned on and that its batteries are charged.
- **The Sound Isn't Working:**
  Solution 1: Check the volume level. Click the audio button in the top-right or bottom-right corner of the screen to make sure the sound is turned on and that the volume is up.
  Solution 2: Check the audio player controls. Many audio and video players will have their own separate audio controls. Make sure the sound is turned on and that the volume is turned up in the player.
  Solution 3: Check the cables. Make sure external speakers are plugged in, turned on, and connected to the correct audio port or a USB port. If your computer has color-coded ports, the audio output port will usually be green.
  Solution 4: Connect headphones to the computer to find out if you can hear sound through the headphones.

2.2.4 Operating System Problems

Memory management is the functionality of an operating system which handles or manages primary memory and moves processes back and forth between main memory and disk during execution. Memory management keeps track of each and every memory location, regardless of either it is allocated to some process or it is free. It checks how much memory is to be allocated to processes. It decides which process will get memory at what time. It tracks whenever some memory gets freed or unallocated and correspondingly it updates the status.

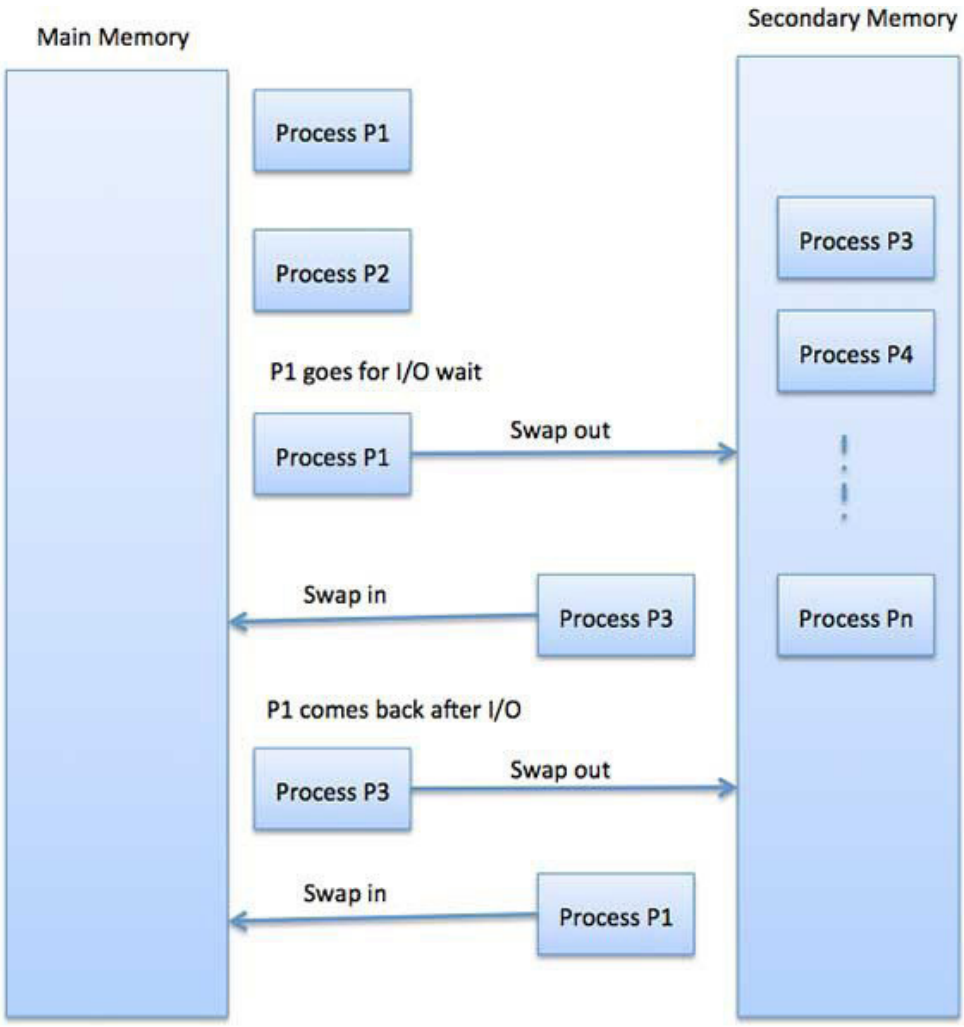


Fig 2.2.4.1: Memory management for OS

Swapping

Swapping is a mechanism in which a process can be swapped temporarily out of main memory (or move) to secondary storage (disk) and make that memory available to other processes. At some later time, the system swaps back the process from the secondary storage to main memory.

Though performance is usually affected by swapping process but it helps in running multiple and big processes in parallel and that's the reason Swapping is also known as a technique for memory compaction.

The total time taken by swapping process includes the time it takes to move the entire process to a secondary disk and then to copy the process back to memory, as well as the time the process takes to regain main memory.

Let us assume that the user process is of size 2048KB and on a standard hard disk where swapping will take place has a data transfer rate around 1 MB per second. The actual transfer of the 1000K process to or from memory will take

Now considering in and out time, it will take complete 4000 milliseconds plus other overhead where the process competes to regain main memory.

Memory Allocation

Main memory usually has two partitions –

- Low Memory – Operating system resides in this memory
- High Memory – User processes are held in high memory

Operating system uses the following memory allocation mechanism.

S.N.	Memory Allocation & Description
1	**Single-partition allocation** In this type of allocation, relocation-register scheme is used to protect user processes from each other, and from changing operating-system code and data. Relocation register contains value of smallest physical address whereas limit register contains range of logical addresses. Each logical address must be less than the limit register.
2	**Multiple-partition allocation** In this type of allocation, main memory is divided into a number of fixed-sized partitions where each partition should contain only one process. When a partition is free, a process is selected from the input queue and is loaded into the free partition. When the process terminates, the partition becomes available for another process.

Fragmentation

As processes are loaded and removed from memory, the free memory space is broken into little pieces. It happens after sometimes that processes cannot be allocated to memory blocks considering their small size and memory blocks remains unused. This problem is known as Fragmentation.

Fragmentation is of two types –

S.N.	Fragmentation & Description
1	**Single-partition allocation** Total memory space is enough to satisfy a request or to reside a process in it, but it is not contiguous, so it cannot be used.
2	**Internal fragmentation** Memory block assigned to process is bigger. Some portion of memory is left unused, as it cannot be used by another process.

The following diagram shows how fragmentation can cause waste of memory and a compaction technique can be used to create more free memory out of fragmented memory –

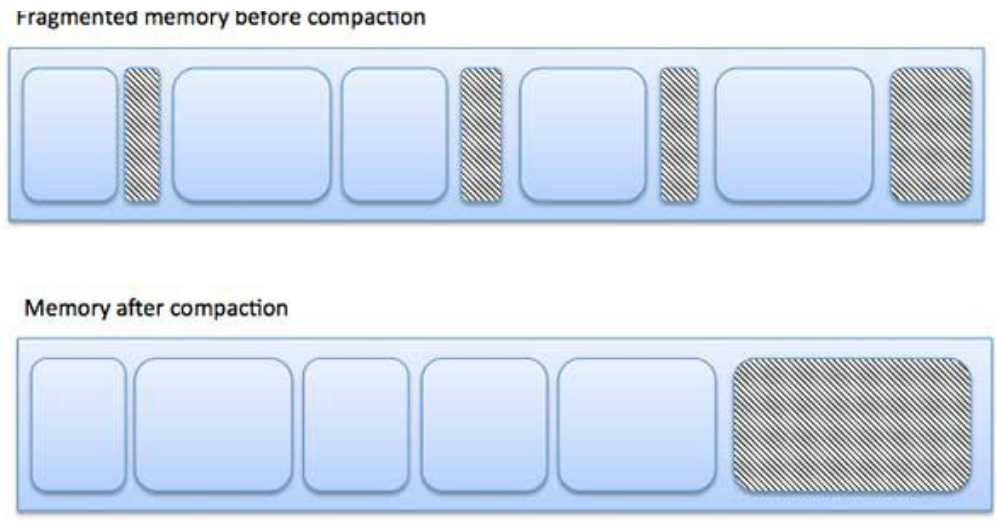


Fig 2.2.4.2: Memory Chart

External fragmentation can be reduced by compaction or shuffle memory contents to place all free memory together in one large block. To make compaction feasible, relocation should be dynamic.

The internal fragmentation can be reduced by effectively assigning the smallest partition but large enough for the process.

2.2.5 Voice, Telephone or Video-Related Problems

Voice, telephone or video related problems occur due to hardware malfunction.

- Video or the display is dependent on the Video Graphics card of the system. The VGA card is placed in the motherboard within the CPU. Monitor, which is the video output or the display unit of the system is connected to the VGA port via VGA cable. Video or display gets distorted if either of the VGA cable or VGA port is faulty. Check the port and cable before replacing or troubleshooting
- Voice, like video, is also dependent on the sound card which is present in the motherboard. However, voice or audio may be input or output. For example, if someone is recording audio using mic/ telephone, then it is considered as input. On the contrary, sound or audio of music or movies is output. Both of them are connected to the motherboard through two different cables. To troubleshoot voice related issues, the first things to examine are sound card and cables. However, for both video and audio, if the motherboard is damaged, functioning cables, ports or cards will not work properly

2.2.6 Database Problems

Databases are enabling companies to use data to inform real-time decisions about their business as well as to use predictive analytics to make better informed, real-time decisions. Here are three of the biggest challenges, as well as the solutions for each.

1. Unstructured Growth of Data

As companies have started to gather more and more data, they've often seen that data being stored or used in ways they didn't quite expect.

Some of them put it into databases that aren't actually designed to reference it, while others fail to properly organize it in a way that makes it useful. A few unlucky companies have even run out of storage space, rendering them unable to continue acquiring data.

This kind of unstructured growth represents a fundamental flaw in the company's database design—if your system can't adequately handle all of the data its being given, then quite frankly, it's not good enough.

Solution:

A redesigned, all-in-one database designed to handle and store new kinds of information—even when it's not expected. This kind of future-proofing allows a company to immediately begin collecting and using certain kinds of data when they realize they need it.

2. **Unsecured Databases**

Along with the sprawling growth of systems, many companies have seen that their data—and more importantly, their customers' data—isn't as secure as it ought to be. Every additional system and piece of software is fundamentally a vulnerability that hackers could exploit to gain access to the network, and most add-ons aren't nearly as secure as the main database.

Solution:

Rather than being stored in disparate "silos," all information should be contained in one central location, with a single point of entry that can be used to stop unauthorized access. If your previous system was built well for its time, it may be possible to simply add the new security measures—otherwise, a new database may be necessary.

3. Finding Qualified Database Administrators

A database administrator (DBA) is an individual charged with overseeing the company's database system on every level. This includes everything from deciding when to replace it to being responsible for its security… and quite frankly, people with the right skills for the job are hard to find.

Fundamentally, a DBA needs to have enough technical expertise to understand the system and enough management skill to be put in charge of managing one of the core parts of the company's operations. Furthermore, since database designs can vary so widely, there's no guarantee anyone with the perfect skill set is walking around.

Configuring Wireless Devices

A wireless network at home lets you get online from more places in your house. This article describes the basic steps for setting up a wireless network and starting to use it.

Before you can set up your wireless network, here's what are essential to set up a wireless network:

- Broadband Internet Connection and modem: A broadband Internet connection is a high-speed Internet connection. Digital Subscriber Line (DSL) and cable are two of the most common broadband connections. You can get a broadband connection by contacting an Internet service provider (ISP). Typically, ISPs that provide DSL are telephone companies and ISPs that provide cable are cable TV companies. ISPs frequently offer broadband modems. Some ISPs also offer combination modem/ wireless routers. You can also find these at computer or electronics stores, and online.
- Wireless Router: A router sends info between your network and the Internet. With a wireless router, you can connect PCs to your network using radio signals instead of wires. There are several different kinds of wireless network technologies, which include 802.11a, 802.11b, 802.11g, 802.11n, and 802.11ac.

- Wireless Network Adapter: A wireless network adapter is a device that connects your PC to a wireless network. To connect your portable or desktop PC to your wireless network, the PC must have a wireless network adapter. Most laptops and tablets—and some desktop PCs—come with a wireless network adapter already installed.

To check whether PC has a wireless network adapter:

1. Select the Start button, type device manager in the search box, and then select Device Manager
2. Expand Network adapters
3. Look for a network adapter that might have wireless in the name

Setting up the modem and Internet connection:

After you have all the equipment, you'll need to set up your modem and Internet connection. If your modem wasn't set up for you by your Internet service provider (ISP), follow the instructions that came with your modem to connect it to your PC and the Internet. If you're using Digital Subscriber Line (DSL), connect your modem to a phone jack. If you're using cable, connect your modem to a cable jack.

Positioning the wireless router:

1. Put your wireless router somewhere where it will receive the strongest signal with the least amount of interference. For better results, follow these tips:
2. Place your wireless router in a central location. Place the router as close to the center of your home as possible to increase the strength of the wireless signal throughout your home
3. Position the wireless router off the floor and away from walls and metal objects, such as metal file cabinets. The fewer physical obstructions between your PC and the router's signal, the more likely that you'll be using the router's full signal strength.
4. Some networking equipment uses a 2.4 gigahertz (GHz) radio frequency. This is the same frequency as most microwaves and many cordless phones. If you turn on the microwave or get a call on a cordless phone, your wireless signal might be temporarily interrupted. You can avoid most of these issues by using a cordless phone with a higher frequency, such as 5.8 GHz.

Messaging

Microsoft Outlook: Microsoft Outlook is the preferred email clients use to access email. It also includes calendaring, contact, task management functionality. Organizations can also integrate Outlook with Microsoft's SharePoint platform to share project notes, documents, collaborate with colleagues, and send reminders and much more.

Microsoft Outlook may be used as a standalone application, but is also part of the Microsoft Office suite. Outlook's current version is Microsoft Outlook 2010. Outlook is also available for the Apple Mac; its current version is Outlook 2011.

Blackberry Messenger or BBM: BlackBerry Messenger, also referred to as BBM, was a messaging service on BlackBerry mobile devices. BBM allows instant messaging and video calls on BlackBerry, Windows Phone, Android, and iPhone mobile devices. Users can send files, pictures, recorded voice notes, QR codes, map locations, and emoji over the service, as well as animated GIFs up to 32 KB in size. However, from 31st May, 2019, BBM service will be unavailable for Android and iPhones.

Lotus Notes: Lotus Notes is a brand of groupware that is now owned by IBM. Lotus Notes is used with a variety of local and collaborative server applications, including email, calendars, personal information

managers (PIM) and the Web. Developed in the 1970s, early versions of Lotus Notes were threaded discussions used to facilitate contact database management. Recent versions help desk systems, customer relationship management (CRM) tools and blogging.

Servers

Windows Server 2012 Active Directory

Windows Server 2012, formerly codenamed Windows Server 8, is the latest version of Windows Server. The successor of Windows Server 2008 R2, its improvements include overall upgrades in cloud computing and storage infrastructure.

Installation of Windows Server 2012

1. Insert the Windows Server 2012 R2 DVD-ROM and turn on your computer. You should see a message informing you that Windows is copying temporary files; if not, you should access the BIOS setup program included with your computer and modify the boot sequence so that the computer boots from the DVD.
2. After a few minutes, you receive the Windows Server 2012 R2 screen. Click **Install now** to begin the installation.
3. Windows copies temporary files and then displays the Get important updates for Windows Setup screen shown in. If you're connected to the Internet, select **Go online to install updates now (recommended).**
4. On the next **Install Windows** screen, click **Install now**.
5. You receive the options, which enable you to install the complete Standard or Datacenter version of Windows Server 2012 R2 with a GUI or Windows Server 2012 R2 Server Core. Select the **Windows Server 2012 R2 Datacenter (Server Core Installation)** option and then click Next.
6. You are asked to accept the license terms. Select the check box labeled **I accept the license terms** and then click **Next**.
7. You receive the options to upgrade or install a clean copy of Windows Server 2012 R2. Select Custom (advanced) to install a clean copy of Windows Server 2012 R2. The upgrade option is available only if you have started the installation from within Windows Server 2008, Windows Server 2008 R2, or the original version of Windows Server 2012.
8. Select the disk on which you want to install Windows and then click **Next**.
9. This takes some time (particularly when installing on a virtual machine), and the computer restarts several times.
10. After 15–30 minutes (depending on your hardware), Windows restarts a last time and informs you that your password must be changed before logging on for the first time. Click OK.
11. Type and confirm a strong password. When informed that the password is changed, click OK. After a minute or so, the desktop appears, containing a command window but no Start screen or desktop icons. This is the standard Windows Server Core interface.
12. To set the correct time, type control timedate.cpl. By default, Server Core sets the time zone to Pacific Time. If you are in a different time zone, you will need to change this. Set the appropriate time zone, change the date and time if necessary, and then click OK.
13. Windows installs Server Core with a randomly generated computer name. To set a name of your choice, type netdom renamecomputer %computername% /newname: ServerC1 (where, in this instance, ServerC1 is the name you're assigning; substitute your desired server name).

14. Windows warns you that the rename process might have an adverse impact on some services. Type Y to proceed.
15. You are informed that the computer needs to be restarted in order to complete the rename. Type shutdown /r /t 0 to reboot your server.
16. After the server reboots, press Ctrl+ Alt+ Delete and log on using the password you set in step

Upgrading Windows Server 2012

You can upgrade a computer running Windows Server 2008 R2 with Service Pack 1 (SP1) or later to Windows Server 2012 R2, provided that the computer meets the hardware requirements for Windows Server 2012 R2. You cannot upgrade a Windows Server 2003 or older computer or a computer running any client version of Windows to Windows Server 2012 R2.

To upgrade to Windows Server 2012 R2, proceed as follows:

1. While logged on to Windows Server 2008 R2 as an administrator, insert the Windows Server 2012 R2 DVD-ROM.
2. When the Install Windows screen appears, click Install now.
3. Select your operating system, either the standard or Windows Core version of Windows Server 2012 R2; then click Next.
4. Accept the licensing terms and then click Next.
5. On the Which Type of Installation Do You Want? page, select Upgrade.
6. Windows checks compatibility of your hardware and software and displays a compatibility report that informs you of any potential upgrade problems. Review this report and make any changes you feel are required. When you are ready to proceed, click Next.
7. Take a lunch break while the upgrade proceeds. This will take 60 minutes or longer, depending on your hardware configuration or use of virtual computing software. The server will reboot three or four times.
8. After the final reboot, log on using the password previously used in Windows Server 2008 R2. Windows prepares your desktop and displays the Server Manager tool

A server running Active Directory Domain Services (AD DS) is called a domain controller. It authenticates and authorizes all users and computers in a Windows domain type network—assigning and enforcing security policies for all computers and installing or updating software.

An Active Directory performs a variety of tasks which include providing information on objects such as hardware and printers and services for the end users on the network such as Web email and other applications.

- **Network Objects:** Network objects are anything that is associated with the network such as a printer, end user applications, and security applications that are implemented by the network administrator. Network objects can also contain additional objects within their file structure which are identified by a folder name. Each object has its own unique identification by the specific information that is contained within the object.
- **Schemas:** Since network objects each have their own identification which is also known as a characterization schema, the type of identification is the determining factor as to how each object will be used on the network.
- **Hierarchy:** The hierarchal structure determines how each object can be viewed within the hierarchy which consists of three different levels which are known as a forest, tree, and domain with the forest

being the highest level that allows the network administrator to see all of the objects in the active directory. The trees are the second level of the hierarchy each of which can hold multiple domains.

VMware

VMware is a software company, well known in the field of system virtualization and cloud computing. VMware's software allows users to create multiple virtual environments, or virtual computer systems, on a single computer or server. Essentially, one computer or server could be used to host, or manage, many virtual computer systems, sometimes as many as one hundred or more.

This cloud computing system was designed to support applications built on Java, Ruby on Rails, Sinatra, and others, as well as provide support for MySQL, MongoDB, and other database platforms. Today, VMware develops and markets many virtualization software programs, mostly aimed towards business use, but home users can use some of their software as well. Notable software titles include VMware ESX and VMware ESXi, VMware vCloud, VMware ACE, and VMware ThinApp.

Citrix

Citrix Server refers to Citrix's line of desktop virtualization products: XenDesktop and XenApp. These products allow IT departments to host centralized desktops and applications, respectively. These products enable users to access applications from anywhere, no matter what hardware they are using, including tablets. Citrix touts XenApp and XenDesktop to cut IT costs and increase security while providing a standardized environment.

The advantage of a Citrix Server is that organizations with heterogeneous environments can have the same applications. Users with Windows, Mac and Linux desktops can have a standard environment.

Remote Troubleshooting Tools

pcAnywhere

pcAnywhere Solution uses remote control technology. One can connect to another computer or server and work as though he is sitting in front of it. pcAnywhere Solution supports network connections over a local area network (LAN), wide area network (WAN), or the Internet.

pcAnywhere Solution provides you with the following features:

- Role-based security through console pages
- Control settings of the managed host
- Audit log and reporting
- Security and scoping mechanism supports
- VNC and RDP integration

It might be helpful to understand some pcAnywhere terminology. For example, the client computer is called the host computer because it hosts the connection. The administrator's computer is called the remote computer or the console. This terminology comes from mainframe computing, where a remote user usually connected to a server or a mainframe computer. In pcAnywhere, the in-session frame is called the viewer.

In most cases, a remote user initiates the connection. They provide the information that is needed to connect to the host computer. The remote user can also select options to increase security or optimize performance. To make a connection, the host computer must be set up to wait for incoming pcAnywhere Solution connections.

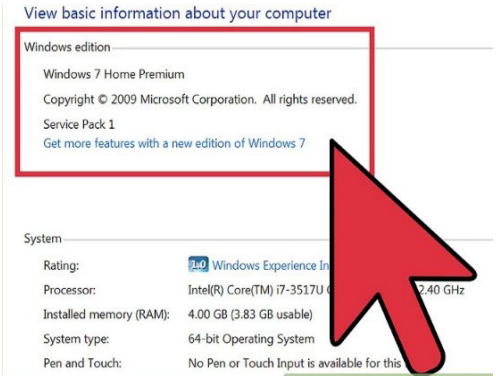
Remote Desktop

Remote desktop is a program or an operating system feature that allows a user to connect to a computer in another location, see that computer's desktop and interact with it as if it were local.

People use remote desktop access capabilities to do a variety of things, including the following:

- Access a workplace computer from home or when traveling
- Access a home computer from other locations
- Fix a computer problem
- Perform administrative tasks
- Demonstrate something, such as a process or a software application

Remote Desktop Connection Establishment

Steps	Images
Double-check the version of Windows on the target computer. The computer receiving the connection from your Windows 7 computer should have one of the following operating systems installed: • Windows 10 • Windows 8.1 (Professional or Enterprise) • Windows 7 (Professional, Home Premium Ultimate or Enterprise)	
Open the System control panel. Open the control panel and select "System and Security." Click "System."	
Click "Remote Settings." This will open the System Properties panel.	

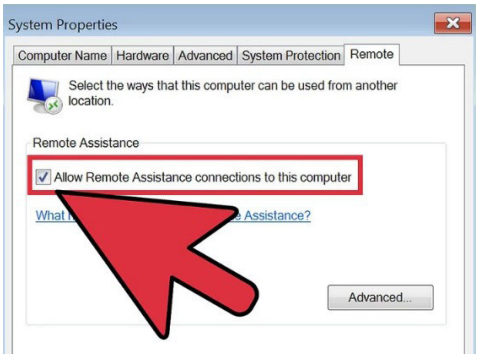
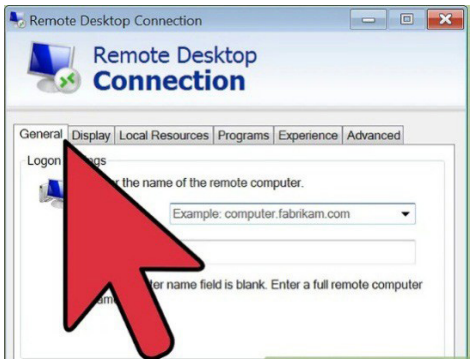
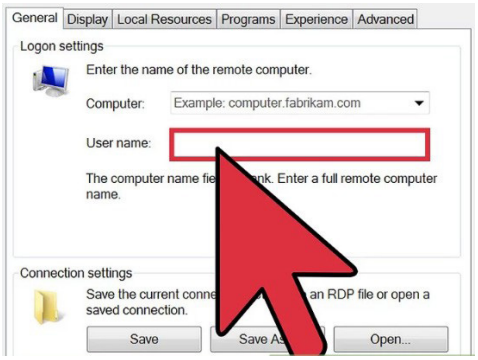
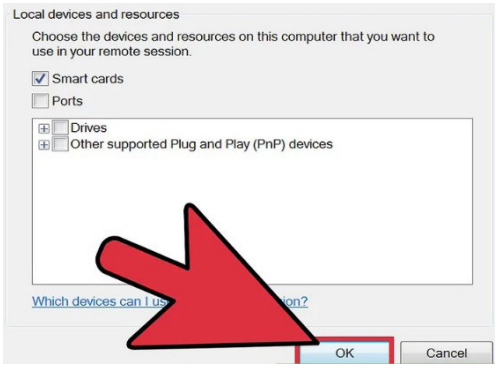
Steps	Images
Allow connections from other computers. Toward the bottom of the panel, you'll see several options for Remote Desktop. 1. Select "Allow connections from computers running any version of Remote Desktop" if you're not sure of the version of Windows installed on the system that will be making a connection 2. Select "Allow connections only from computers running Remote Desktop with Network Level Authentication" if both computers are running Windows 7. You'll only see this option on a Windows 7 computer, so don't panic if you don't see it in another version	
Click "Select Users." You'll be brought to a screen where you can add a new user account.	
Click "Add." You can select any of the computer's existing user accounts by typing a username and clicking on "Check Names." Select the account you wish to use and click "OK."	
Click "OK." Remote Desktop is now enabled on the target system.	

Table 2.2.6.1: Establishment of remote desktop connection

TeamViewer

TeamViewer is one of the most famous remote access control systems for computers. It is free for home non-commercial use, it has quite easy remote connection system through its own servers. Once we have this program installed either on our computer or on a computer we want to access to, we will see that this program has very simple interface divided in two columns: on the left we will see our computer information, and on the right – other computer's access information.

VNC Viewer

In computing, Virtual Network Computing (VNC) is a graphical desktop sharing system that uses the Remote Frame Buffer protocol (RFB) to remotely control another computer Multiple clients may connect to a VNC server at the same time.

Ammyy Admin

Ammyy (sometimes called AMMYY) is a software company which created the remote desktop software called Ammyy Admin. It is often used by scam artists who cold-call homes to try to gain access to their computer.

PC Lifecycle management tools

Preventive maintenance is a regular and systematic inspection, cleaning, and replacement of worn parts, materials, and systems. Preventive maintenance helps to prevent failure of parts, materials, and systems by ensuring that they are in good working order.

Preventive maintenance reduces the probability of hardware or software problems by systematically and periodically checking hardware and software to ensure proper operation.

Hardware:

Check the condition of cables, components, and peripherals. Clean components to reduce the likelihood of overheating. Repair or replace any components that show signs of damage or excessive wear.

Use the following tasks as a guide to create a hardware maintenance program:

- Remove dust from fan intakes
- Remove dust from the power supply
- Remove dust from components inside the computer
- Clean the mouse and keyboard
- Check and secure loose cables

Software:

Verify that installed software is current. Follow the policies of the organization when installing security updates, operating system updates, and program updates. Many organizations do not allow updates until extensive testing has been completed. This testing is done to confirm that the update will not cause problems with the operating system and software.

Use the tasks listed as a guide to create a software maintenance schedule that fits the needs of your computer equipment:

- Review security updates
- Review software updates
- Review driver updates

- Update virus definition files
- Scan for viruses and spyware
- Remove unwanted programs
- Scan hard drives for errors
- Defragment hard drives

Benefits:

Be proactive in computer equipment maintenance and data protection. By performing regular maintenance routines, you can reduce potential hardware and software problems. Regular maintenance routines reduce computer downtime and repair costs.

A preventive maintenance plan is developed based on the needs of the equipment. A computer exposed to a dusty environment, such as a construction site, needs more attention than equipment in an office environment. High-traffic networks, such as a school network, might require additional scanning and removal of malicious software or unwanted files. Document the routine maintenance tasks that must be performed on the computer equipment and the frequency of each task. This list of tasks can then be used to create a maintenance program.

The following are the benefits of preventive maintenance:

- Increases data protection
- Extends the life of the components
- Increases equipment stability
- Reduces repair costs
- Reduces the number of equipment failures

Summary

- Every process or wing must have a support material to resolve customers' issues
- The executives must refer to the supporting materials and consult it before providing any resolution
- Priority is used to establish timescales, set deadlines, access TATS and effort to respond to and resolve an issue (Service Request). Priority is derived from an Impact and Urgency Priority Matrix
- Customer retention is the activity that an organization undertakes in order to reduce customer defections
- Troubleshooting is a systematic approach to problem solving that is often used to find and correct issues with complex machines, electronics, computers and software systems
- Most of the time, problems can be fixed using simple troubleshooting techniques, like closing and reopening the program. It's important to try these simple solutions before resorting to more extreme measures
- Databases are enabling companies to use data to inform real-time decisions about their business as well as to use predictive analytics to make better informed, real-time decisions.

Notes

Exercise

Fill in the blanks with appropriate responses

1. Live chat provides a quick, _____-way interaction
2. Setting a password is a fundamental action to prevent _____.
3. The most commonly used network tool is _____.
4. Memory management keeps track of _____.
5. Databases are enabling companies to use data to inform _____.

Activity

Activity 1

- This activity is in the form of "Quiz Competition"
- The Trainer will divide the class into three groups viz. Group A, Group B and Group C
- The Trainer will conduct a quiz competition to evaluate the understanding of the topic
- The questions will be based on the troubleshooting steps as discussed in Unit 2.4
- There will be 10 points for correct responses and -5 for incorrect responses or no responses
- The group with highest point will be adjudged the winner.

Activity 2

- In this session, the Trainer will divide the class into few groups
- The Trainer will take the Trainees to a computer lab where they will be given their topics on Common problems in the IT Field and Solutions
- Each group will be given a specific topic on which they have to work.
- The 1st group will work on Accounts related issues
- The 2nd group will work on Operating System related issues
- The 3rd group will work on Database related issues
- The teams will get 20 minutes to complete their given work
- The Trainees must work with essential tools and use the methods as discussed to resolve respective issues
- The trainer will take 10 minutes to evaluate the work of Trainees
- The team that can complete their given work with finesse will be appreciated with accolades.

Scan the QR codes or click on the link to watch the related videos

youtu.be/nNaLLR_kI3k

Identify the nature and range of queries

Notes

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सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

3. Skills for Query Managment

IT - ITeS SSC
nasscom

Unit 3.1 - Query Resolution Software
Unit 3.2 - Resolve Queries within Your Area of Competence or Authority

SSC/N7201

Key Learning Outcomes

At the end of this module, you will be able to:

1. List different software needed for query management and tracking, recording customer complaints like MS office, MS Excel, and other licensed software
2. Distinguish the types of technical and non-technical queries

Unit 3.1: Query Resolution Software

Unit Objectives

At the end of this unit, you will be able to:

1. List different software required to record and track queries and complaints

3.1.1 Demonstrate Use of Query Resolution Tools

Management tools and systems for recording, categorizing, documenting, classifying, prioritizing and resolving customer queries

MS Office offers you a bunch of applications such as MS Word, MS Excel, MS PowerPoint, and MS Outlook. However, you would require MS Office and MS Excel for the purpose of query handling i.e. keeping a track of customer queries and complaints.

Microsoft Word: Allows users to type text and add images to a document.

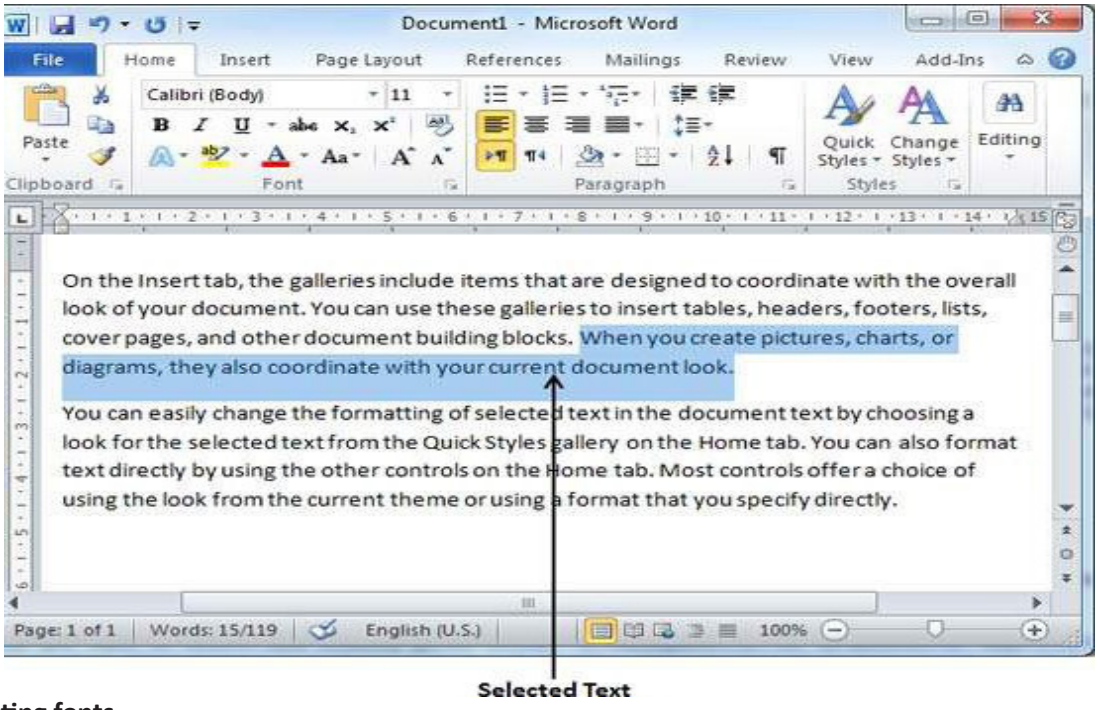
- **Microsoft Excel:** Allows users to enter data into a spreadsheet and create calculations and graphs.
- **Microsoft PowerPoint:** Allows users to add text, pictures and media and create slideshows and presentations.
- **Microsoft Outlook:** Allows users to send and receive email.
- **Microsoft OneNote:** Allows users to make drawings and notes with the feel of a pen on paper.
- **Microsoft Access:** Allows users to store data over many tables.

A popular email management choice especially in the workplace, Microsoft Outlook also includes an address book, notebook, web browser and calendar. Some major benefits of this program are:

- **Integrated search function:** You can use keywords to search for data across all Outlook programs.
- **Enhanced security:** Your email is safe from hackers, junk mail and phishing website email.
- **Email syncing:** Sync your mail with your calendar, contact list, notes in OneNote and…your phone!
- **Offline access to email:** No Internet? No problem! Write emails offline and send them when you're connected again.

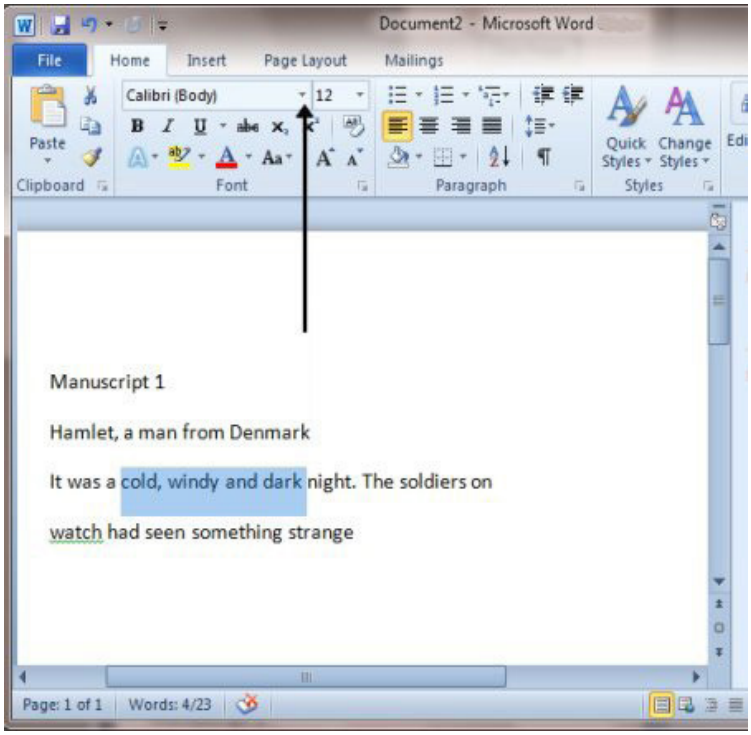
Working with MS Word
Selecting text

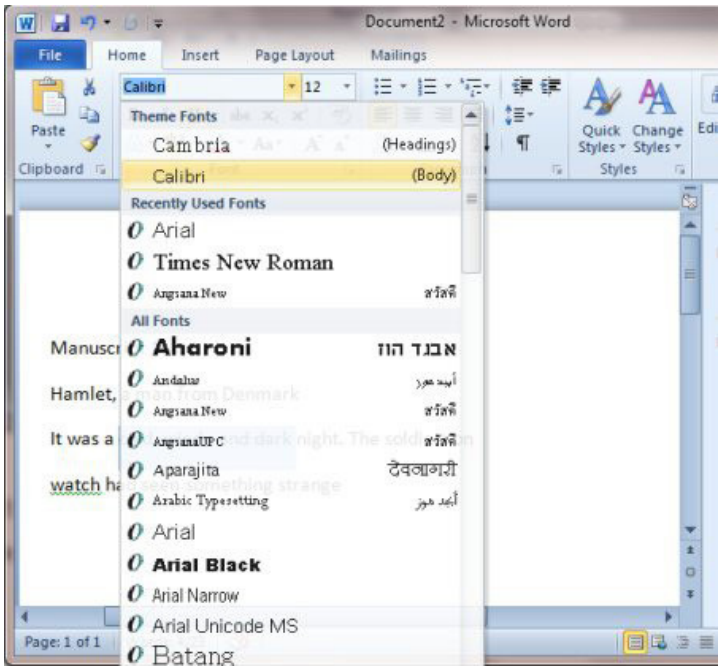
To select a particular word, sentence or paragraph, simply press and hold the cursor from the starting point of selection and drag it till the end point of selection. After doing so, you can release the mouse to view the selected text. This selected text can then be copied or cut and then pasted wherever it must be used.



Selecting fonts

There are a large number of font options available on MS Word which can be selected for use as and when required. In order to change the font style, one simply has to select the appropriate text line and drag the cursor to the options panel on top of the screen. There is a dropdown option available from where one can select the font of choice which automatically changes the highlighted text to the appropriate selection.

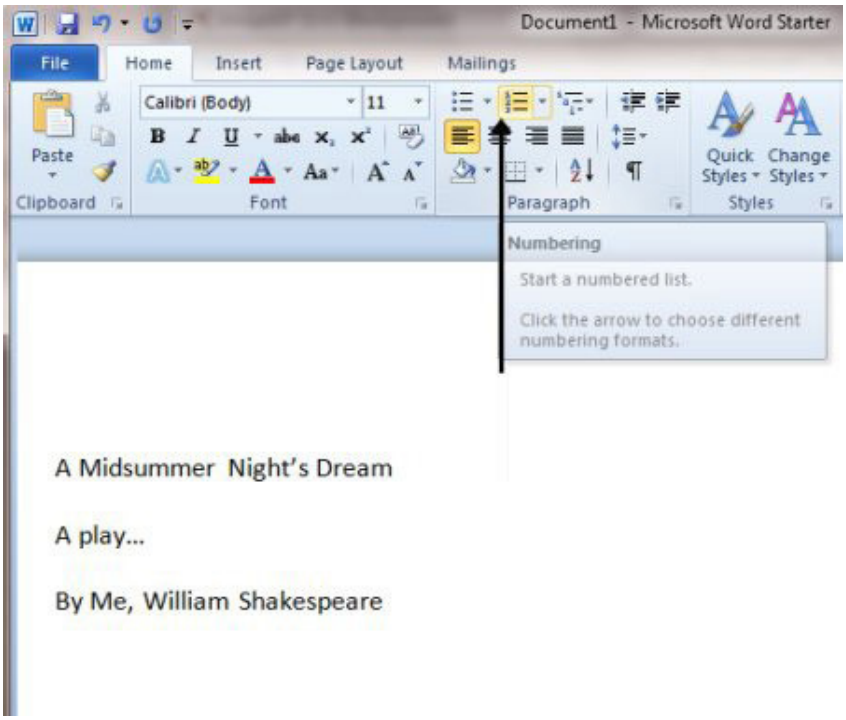




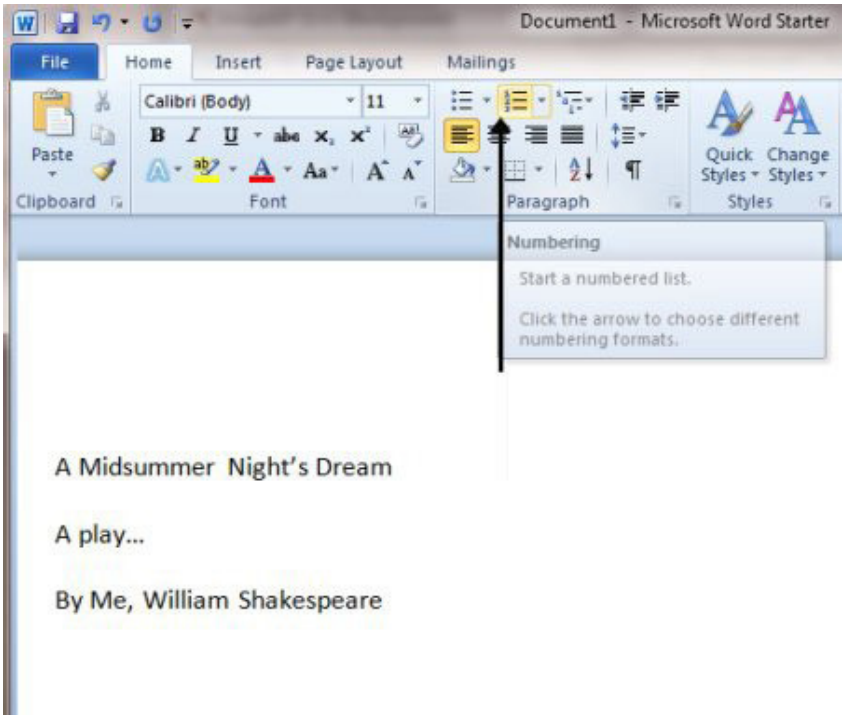
Working with Lists

Sometimes there may be a need to create a list of items or sentences which must be ordered sequentially. For this purpose, one may use the 'bullets and numbering' option available on MS Word. The following steps must be followed:

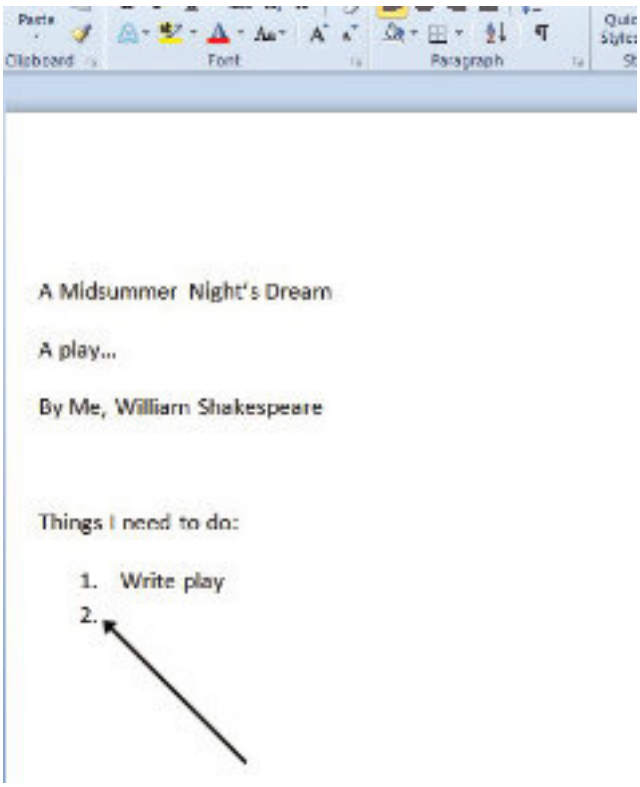
1. Place the cursor at the appropriate starting point of the document and click the numbering icon present in the options panel on top of the workspace.



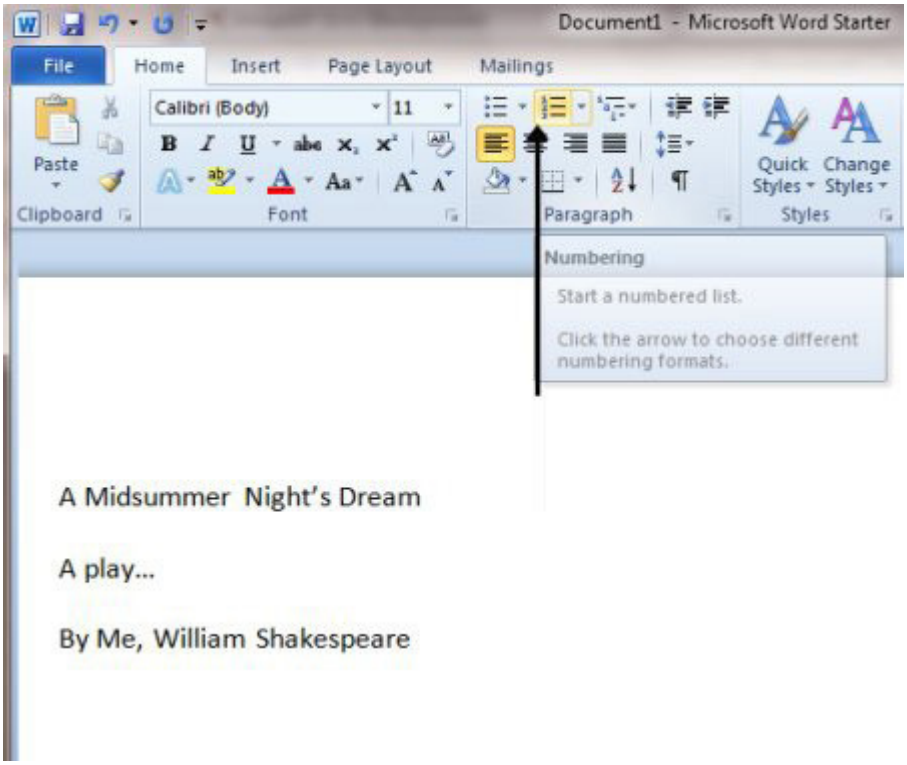
2. The first number gets inserted into the document.



3. Type the first item and then on pressing 'Enter' the next line gets automatically numbered.

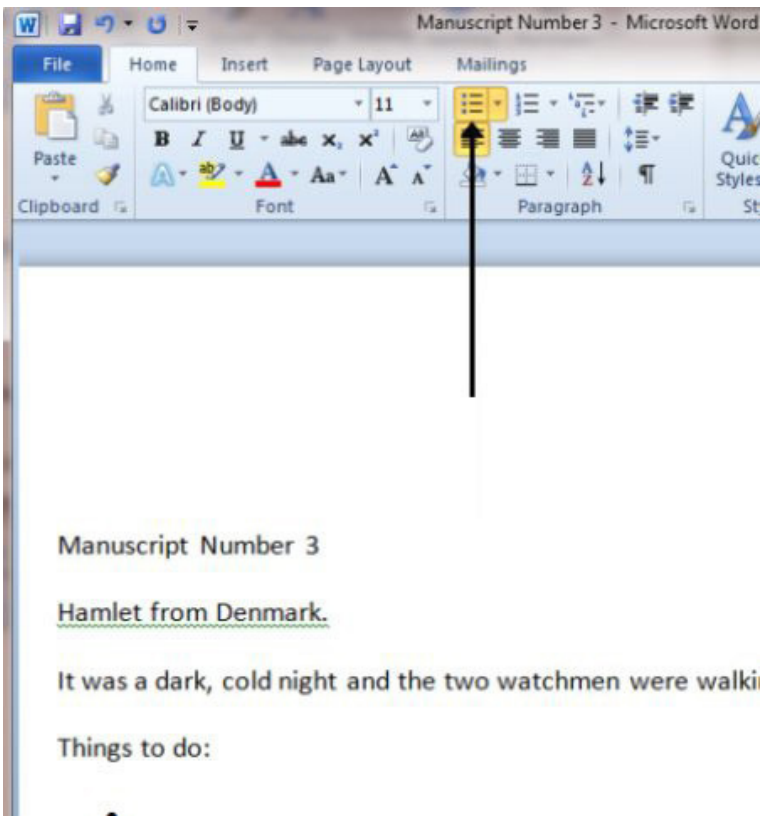


4. To stop numbers from getting inserted, simply click the numbering panel once again to go back to normal paragraph format.

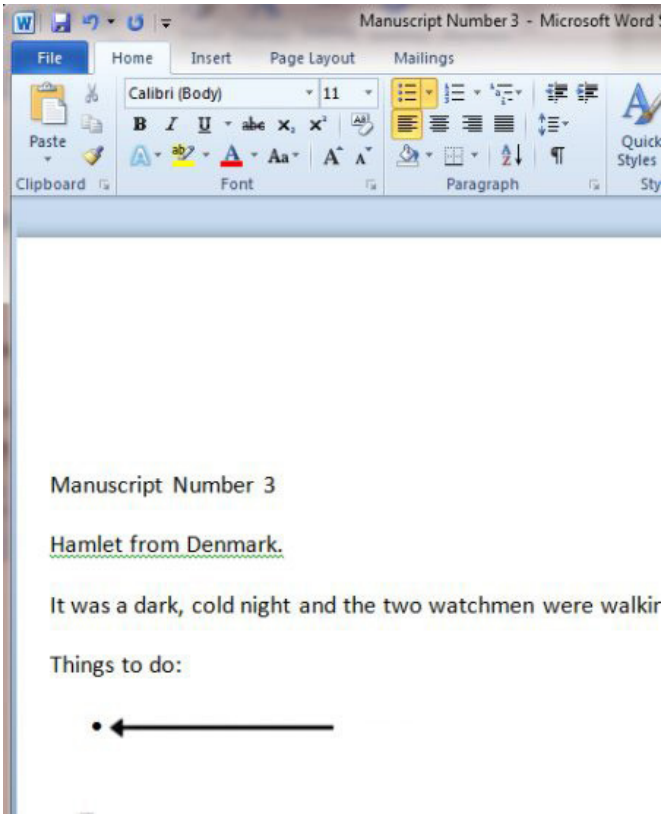


In case of creating a bulleted list, the following steps must be followed:

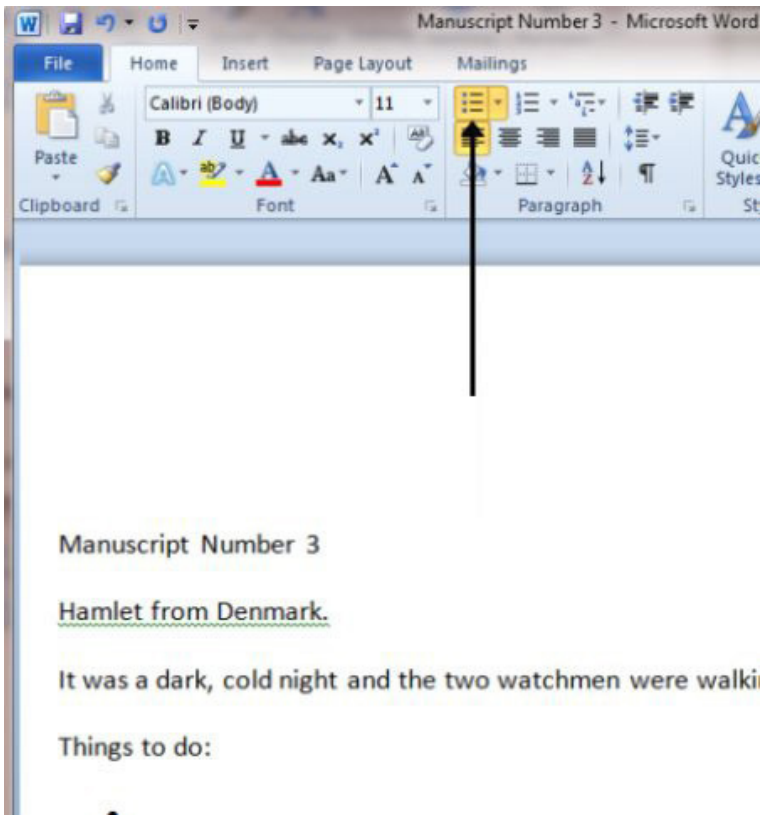
1. Click the bullets icon present in options panels on top of the workspace.



2. A bullet point will be inserted into the page.



3. You can type out the text and every time you press 'Enter', a new bullet point will be created.
4. To stop creating more bullets, simply click on the bullets options once again. Now you go back to the paragraph format.



5. Alternatively, both for numbered and bulleted lists you may type out the entire text material, then select the text and finally choose the bullets/ number option to automatically create a list.

Starting MS Excel

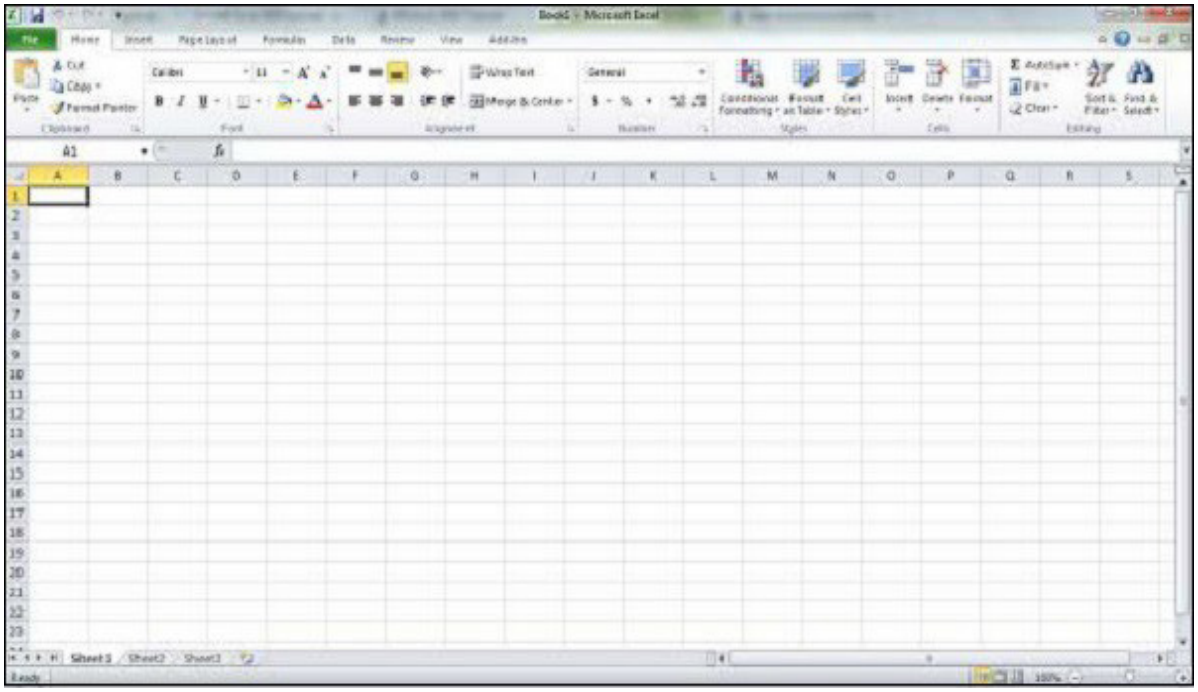
1. Click on the Start button.

2. Click on All Programs option from the menu.

3. Search for Microsoft Office from the sub menu and click it.

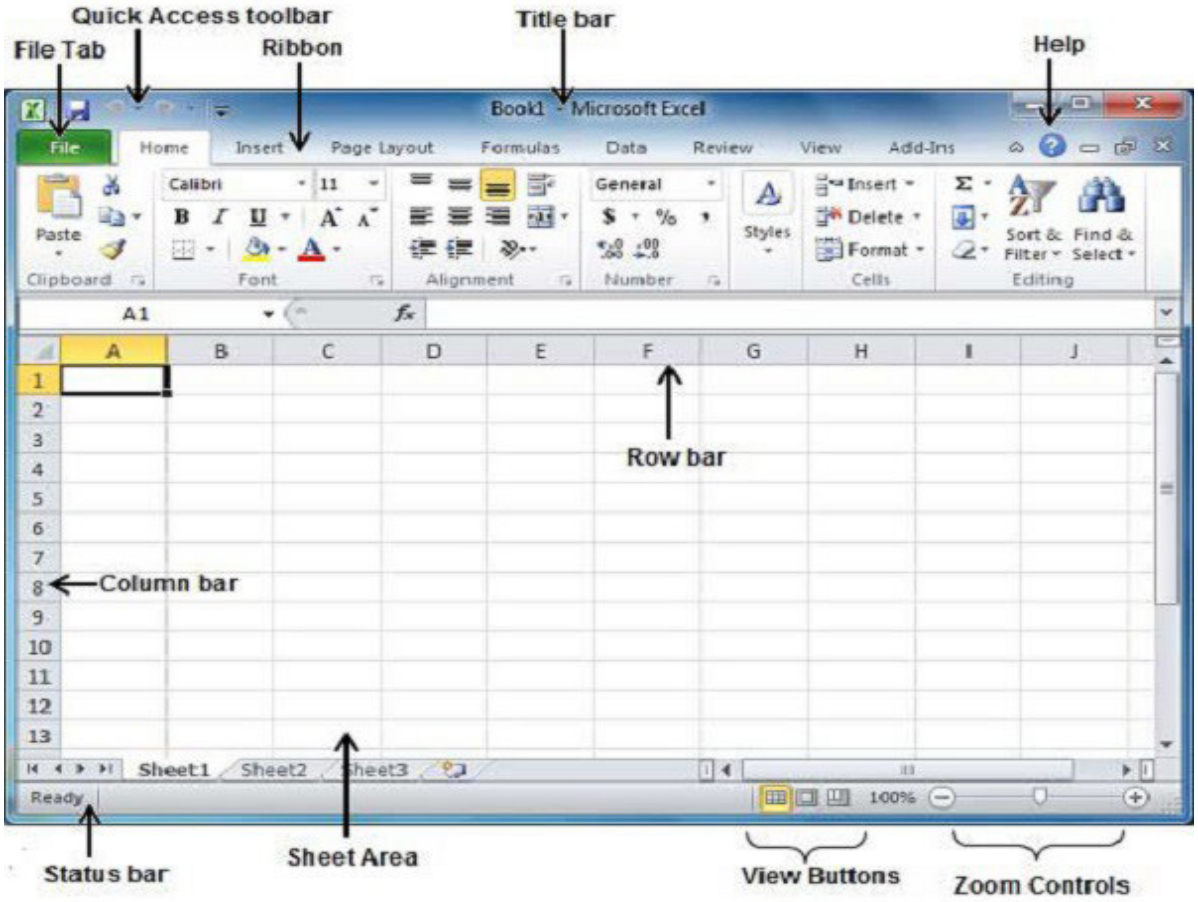
4. Search for Microsoft Excel 2010 from the submenu and click it.

5. This will launch the Microsoft Excel 2010 application and you will see the following excel window.



Excel Interface

Basic components of the Excel interface include-



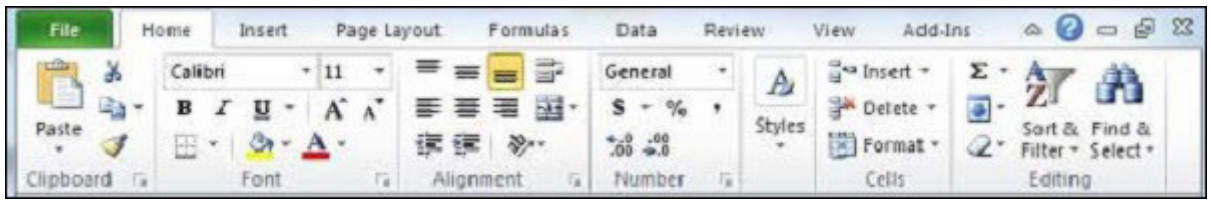
File Tab:

The File tab replaces the Office button from Excel 2007. You can click it to check the Backstage view, where you come when you need to open or save files, create new sheets, print a sheet, and do other file-related operations.

Quick Access Toolbar:

You will find this toolbar just above the File tab and its purpose is to provide a convenient resting place for the Excel's most frequently used commands. You can customize this toolbar based on your comfort.

Ribbon:



Ribbon contains commands organized in three components —

- **Tabs** — They appear across the top of the Ribbon and contain groups of related commands. Home, Insert, Page Layout are the examples of ribbon tabs.
- **Groups** — They organize related commands; each group name appears below the group on the Ribbon. For example, group of commands related to fonts or group of commands related to alignment etc.
- **Commands** — Commands appear within each group as mentioned above.

Title Bar:

This lies in the middle and at the top of the window. Title bar shows the program and the sheet titles.

Help:

The Help Icon can be used to get excel related help anytime you like. This provides nice tutorial on various subjects related to excel.

Zoom Control:

Zoom control lets you zoom in for a closer look at your text. The zoom control consists of a slider that you can slide left or right to zoom in or out. The + buttons can be clicked to increase or decrease the zoom factor.

View Buttons:

The group of three buttons located to the left of the Zoom control, near the bottom of the screen, lets you switch among excel's various sheet views.

- **Normal Layout view** — This displays the page in normal view.
- **Page Layout view** — This displays pages exactly as they will appear when printed. This gives a full screen look of the document.
- **Page Break view** — This shows a preview of where pages will break when printed.

Sheet Area:

The area where one enters data. The flashing vertical bar is called the insertion point and it represents the location where text will appear when you type.

Row Bar:

Rows are numbered from 1 onwards and keep on increasing as you keep entering data. Maximum limit is 1,048,576 rows.

Column Bar:

Columns are numbered from A onwards and keeps on increasing as you keep entering data. After Z, it will start the series of AA, AB and so on. Maximum limit is 16,384 columns.

Status Bar:

This displays the sheet information as well as the insertion point location. From left to right, this bar can contain the total number of pages and words in the document, language etc.

You can configure the status bar by right-clicking anywhere on it and by selecting or deselecting options from the provided list.

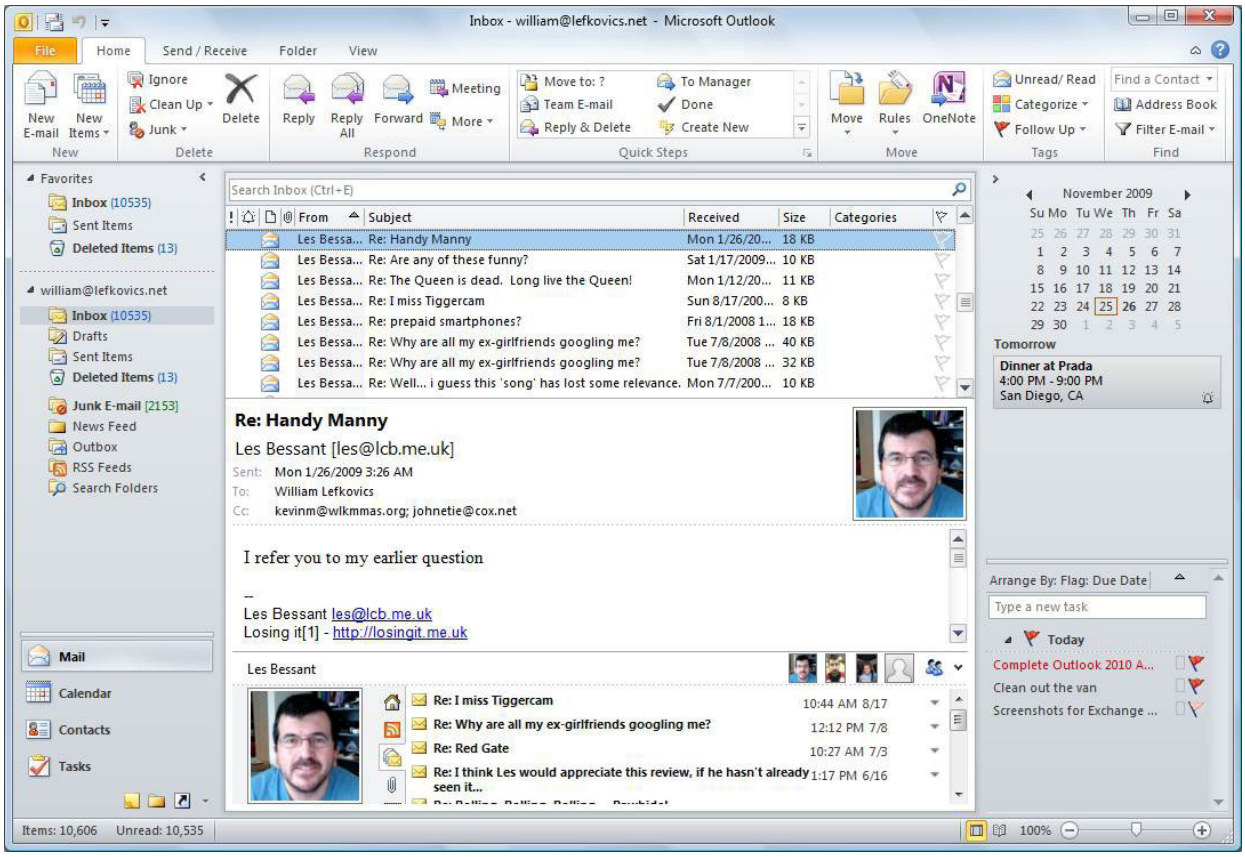
Dialog Box launcher:

This appears as a very small arrow in the lower-right corner of many groups on the Ribbon. Clicking this button opens a dialog box or task pane that provides more options about the group.

Working with MS Outlook

Microsoft Outlook is a personal information manager from Microsoft, available as a part of the Microsoft Office suite. Although often used mainly as an email application, it also includes a calendar, task manager, contact manager, note taking, journal, and web browsing.

Thus, it has multiple uses for official purposes. It can be used as a stand-alone application, or can work with Microsoft Exchange Server and Microsoft SharePoint Server for multiple users in an organization, such as shared mailboxes and calendars, Exchange public folders, SharePoint lists, and meeting schedules.



There are some general categories of issues and queries for which a customer contacts the customer-care agent.

S.No.	Type of Query	Mode of Resolution
1.	Product defect or confusion	E-mail/ chat
2.	Shipping issues	E-mail/ chat
3.	Billing issues	E-mail/ chat
4.	Social interaction	E-mail/ chat
5.	Purchasing	E-mail/ chat

Table 3.1.1.1: Types of query and possible resolutions

Unit 3.2: Resolve Queries within Your Area of Competence

Unit Objectives

At the end of this unit, you will be able to:

1. Discuss various SLAs and understand their implications

3.2.1 Organizational Guidelines and Service Level Agreements (SLAs)

Service-level agreement (SLA)

- A service-level agreement (SLA) is a part of a service contract where a service is formally defined.
- In practice, the term SLA is sometimes used to refer to the contracted delivery time (of the service or performance). As an example, internet service providers will commonly include service level agreements within the terms of their contracts with customers to define the level(s) of service being sold in plain language terms.
- In this case the SLA will typically have a technical definition in terms of mean time between failures (MTBF), mean time to repair or mean time to recovery (MTTR); various data rates; throughput; jitter; or similar measurable details.
- In other words, we can say that a service-level agreement is a negotiated agreement between two or more parties, where one is the customer and the others are service providers

Customer-based SLA:

- An agreement with an individual customer group, covering all the services they use.
- For example, an SLA between a supplier (IT service provider) and the finance department of a large organization for the services such as finance system, payroll system, billing system, procurement/ purchase system, etc.

Service-based SLA:

An agreement for all customers using the services being delivered by the service provider. For example:

- A car service station offers a routine service to all the customers and offers certain maintenance as a part of offer with the universal charging.
- A mobile service provider offers a routine service to all the customers and offers certain maintenance as a part of offer with the universal charging
- An email system for the entire organization. There are chances of difficulties arising in this type of SLA as level of the services being offered may vary for different customers (for example, head office staff may use high-speed LAN connections while local offices may have to use a lower speed leased line).

Multilevel SLA:

The SLA is split into the different levels, each addressing a different set of customers for the same services, in the same SLA.

- **Corporate-level SLA:**
  Covering all the generic service level management (often abbreviated as SLM) issues appropriate to every customer throughout the organization. These issues are likely to be less volatile and so updates (SLA reviews) are less frequently required.
- **Customer-level SLA:**
  Covering all SLM issues relevant to the particular customer group, regardless of the services being used.
- **Service-level SLA:**
  Covering all small issue relevant to the specific services, in relation to this specific customer group.

3.2.2 Get Confirmation that Queries Have Been Resolved to Satisfaction

Customer retention is the activity that an organization undertakes in order to reduce customer defections. Successful customer retention starts with the first contact an organization has with a customer and continues throughout the entire lifetime of a relationship. A company's ability to attract and retain new customers, is related to its product or services.

Customer retention is more than giving the customer what they expect; it's about exceeding their expectations so that they become loyal to your brand. Creating customer loyalty puts customer value first rather than maximizing profits as a business strategy. The key factor in a competitive environment is more often than not the delivery of a consistently high standard of customer service.

Customer retention has a direct impact on profitability. Research by John Fleming and Jim Asplundh indicates that loyal customers generate 1.7 times more revenue than normal customers. Customer attrition, also known as customer churn, or customer defection, is the loss of clients or customers.

Customer satisfaction, a term frequently used in marketing, is a measure of how products and services supplied by a company meet or surpass customer expectation. Customer satisfaction is

defined as "the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified satisfaction goals In a survey of nearly 200 senior marketing managers, 71 percent found a customer satisfaction metric very useful in managing and monitoring their businesses.

It is seen as a key performance indicator within business and is often part of a balanced scorecard. In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy.

Various companies use different ways of CSAT mapping like automated SMS, emails, calls etc. after every transaction with customers.

A technical executive should try and exceed the specified maximum level of customer satisfaction scores and ensure instant customer feedback.

Summary

- Every company has a specific query-management system in place which allows the customer care executive to categorize the queries and arrange them in a certain way in order to resolve the issues faster and more efficiently in an organized manner
- Repeat important details back to the customer, saying “Okay, just to recap. This reassures them that you are paying attention
- A service-level agreement (SLA) is a part of a service contract where a service is formally defined
- An agreement with an individual customer group, covering all the services they use.

Notes

Exercise

Answer the following questions in one sentence

1. What are different applications available with MS Office?
2. What are the key aspects of customer satisfaction?
3. What is the full form of SLA?
4. Between customer retention and attrition, which is more important to you from a technical executive's perspective?
5. Is reading and paraphrasing identical?

Activity

Activity 1

- This activity is in the form of working with Microsoft Office
- The Trainer will introduce the basic Microsoft Office applications to the Trainees
- After that, the Trainees will use these applications to create sample chats (in MS Word)
- The will be a dictation session after that where the Trainer will read out a piece from a book
- Trainees must take down the dictation accurately in MS Word
- The Trainer will check the tasks and the best performers will be appreciated.

Scan the QR codes or click on the link to watch the related videos

youtu.be/75Xsxu44jBc

Standard script for query handling, and role play

Notes

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N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

4. Deal with Customer Queries

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Unit 4.1 - Evaluate Query Resolution
Unit 4.2 - Query, Request or Complaint

SSC/N07201

Key Learning Outcomes

At the end of this module, you will be able to:

1. Discuss the importance of documenting, classifying and prioritizing queries
2. Select a correct solution from customer relationship management (CRM) tool, basis the query

Unit 4.1: Evaluate Query Resolu□on

Unit Objectives

At the end of this unit, you will be able to:

1. Demonstrate greetings standards, careful visualizing, reading, summarizing, and obtaining customer confirmation of your understanding of the query

4.1.1 Follow Standard Scripts for Responding on Email/ Chat to Regular Customer Queries

Show empathy to build good rapport with the customer. The greeting part of a communication is of tremendous importance, as it leaves the customer with a first impression of the associate. As the proverb goes, one never gets a second chance to leave a good first impression. First impressions are important because, in the first few seconds of a conversation, people decide whether they like or they dislike the person they are talking to. Since people usually do business with people they like, it is important to be liked by your customer to multiply the chances to have his/ her commitment at the end of the communication.

At the beginning of a conversation, one needs to introduce himself/ herself and the company on behalf of which he/ she is calling.

Some sample statements are shared below:

- Good morning, my name is _____ and I am contacting you on behalf of _____."
- "Good afternoon, I'm _____ from _____."

The first sentence should be said in an enthusiastic and friendly tone of voice.

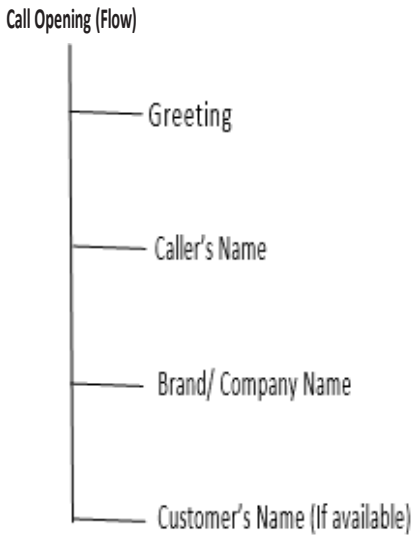

Fig 4.1.1.1: General flow of conversation opening

The opening of the conversation determines certain things such as:

1. Reason of the communication
2. Account/ Payment/ Service status

3. Rapport building (which plays a major role for the rest of the conversation)

In payments department, communications are mostly outbound. Outbound communication refer to the conversations which are commenced by the associate to a customer. Payment communications are important to:

- Inform the customer of the current status of payment
- Remind the customer of any due payment/ last date of the payment cycle
- Collect payment from the customer within due date

Verification of the customer details is an essential step of the payment-related communications. Details should be verified minutely so that the data is not exposed to others. For example, if Mr X is supposed to be contacted, the agent should ensure that he/she is speaking to Mr X or someone trustworthy and known to Mr X. The information that Mr X shared with the company are confidential and thus should not be shared with anyone else.

Every organization devises its own method of verifying customers. At the time of contract signing to avail a service or a product, a customer needs to submit few essential documents such as:

- Photocopy of Aadhar card
- Photocopy of Voter card
- Photocopy of PAN card

The determinants vary from organization to organization. Mostly, these details are captured during documentation as these are considered as unique and universal. This information help an agent to verify a customer.

For example, if an agent needs to verify a customer, he/ she may ask for the details of any of the submitted documents. This helps the agent to identify if the agent is communicating to the right person.

There are cases when the consumer is not the customer, i.e. if the customer, whose details have been captured during documentation, does not avail the service. The consumer is someone else known to the customer avails the service. In that case, the consumer should provide satisfactory answer to the agent during verification. Otherwise, the agent should not proceed further.

Post verification, any information related to payment such as bank details or billing cycle should be shared with the customer.

Account status refers to the current status of a customer's account. For example, if the customer has availed 50% of the promised service, the agent should aver the same on a call and should also add that the customer will enjoy the rest (i.e. 50%) of the service as well.

However, the agents from the payments department must inform the customer about the last date of the billing cycle. Till the last date of the cycle, the customer can enjoy the service provided, however, post that, payments should be made or new plans should be chosen to avail the service again.

Express your concern for any difficulties caused and your commitment to resolving queries Empathy vs. Sympathy

What is empathy?

- Empathy, the art of seeing a situation through a customer's eyes, is an essential component to a successful customer service culture.

- Empathy is not restricted to problem-solving, since a frustrated customer will want his feelings acknowledged before he is ready to accept your solution.
- Empathy is the art of understanding and acknowledging a customer's feelings and needs, before finding a solution that meets them.

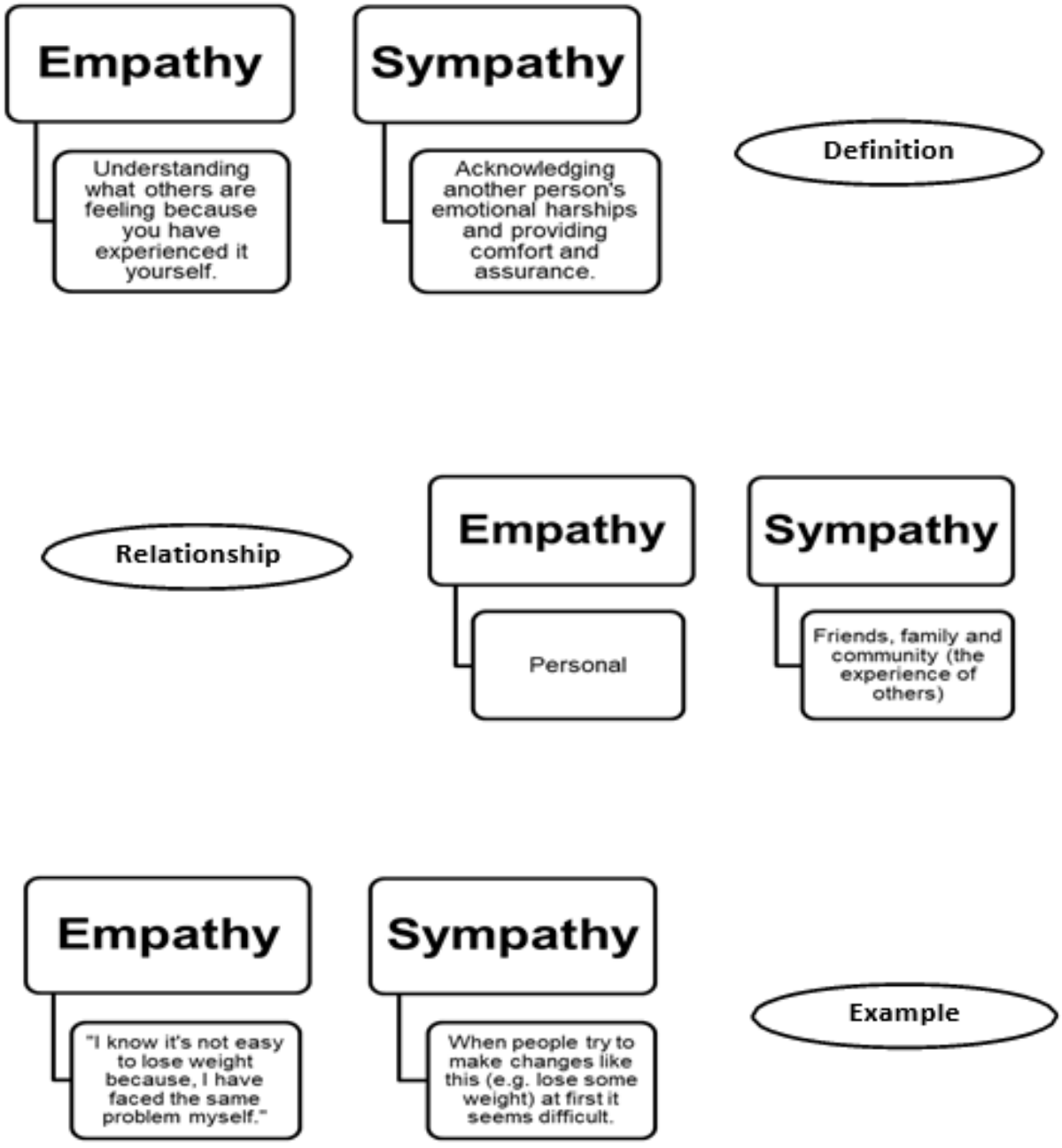

Fig 4.1.1.2: Definition, relationship and example of Empathy and Sympathy

4.1.2 Request for Clarification and Gain Confirmation on Customer Needs

Different questioning techniques for understanding customer queries and Record and categorize queries accurately using your organization's query management tool

To obtain information from customers, questions need to be asked. Whenever you make requests for information, you're using the skill of probing. Usually, probing takes the form of asking questions.

There are two types of probes – open and closed.

A request for information that allows the customer to speak freely is an open probe. Open probes generally begin with "what", "how", "why", "tell me", or "show me". A request that limits the customer's response to a few alternatives is a closed probe.

Closed probes generally begin with "do", "are", "is", or "which". They can be answered by "yes" or "no" or a choice among limited alternatives. Use open probes in the beginning of a conversation to gain information and when you want to expand on something, especially if a new topic has been brought up.

Sometimes open probes fail to get the information you need, or they may not be the most efficient way to find out what you want to know. When that's true, you'll find closed probes will help you undercover the specific information you need.

Probing also helps to understand customer's buying behaviour and needs too.

Fig 4.1.2.1: Analyse the queries of the customers before replying

Tips for Probing

- Make an appointment to prospect
- Make as many calls as possible targeting the right customers
- Make your calls brief
- Be prepared with a list of names before you call

- Work without interruption
- Consider prospecting during off-peak hours when conventional prospecting times don't work
- Vary your call times
- Be organized
- Every person is not a potential customer

Who

By asking questions with 'who, you should be able to understand the background of the customer.

- Who has the most obvious need for your products or services?
- Who are the ideal prospects? Don't limit yourself to existing customers.
- Who has the money to buy the products or services immediately?
- Who has the most urgent need to buy the products?
- Who has influence on the prospects?

Where

By asking questions with 'where', you should be able to qualify prospects.

- Where do the prospects live, work, socialize, worship or play?
- Where can you find useful mailing lists of people who fit your ideal profile?
- Where can you find directories to form your own lists?
- Where could you go to contact new prospects?

Why

By using why-based questions, you can set up priorities in qualifying prospects.

- Why would the prospect want to buy your product or service?
- Why would the prospect resist buying your product or service?
- Why is the time be good to approach the prospect?
- Why would this person set up an appointment with you?

What

These questions, if properly used, can boost your qualifying average.

- What will the prospect find most beneficial about your product or service?
- What questions could you ask that would get the prospect to talk about the needs?
- What more do you need to know about the prospect?
- What information should be gathered about the prospect?
- What is the single biggest problem the customer has?

When

This question is about timing. Don't try to set up an appointment at your convenience.

- When is the best time to contact a prospect? An important point - if he or she is a busy executive, never choose a Monday morning!
- When is the most productive time from the prospect's viewpoint?
- When is the prospect most likely to give you the time you need?
- When should you contact the prospect again if your first efforts were not successful?

How

You will not be able to ask many meaningful — how? Questions if you have not fully explored the other five.

- How can you be sure that you are doing a good job of follow- up prospecting? (Look at the —Who questions again.)
- How can you use your prospecting time more productively? (The
- "Where" questions can help you here.)
- How can you sharpen your qualifying skills? (Search for creative ways to put your products and services to good use. Look at the —Why questions.)
- How can you approach your prospects best? (Think about the —what questions what will they want to hear?)
- How can you make more time for meaningful prospects and qualifying the leads you generate?

4.1.3 Different Styles and Approaches to use When Working With Customers

DO's AND DON'Ts while you are on a call

- Keep the mike a few inches away from your mouth.
- Do not eat/ chew food when on a call.
- Have a notebook & pen ready to take down information.
- Smile & be confident and speak clearly.
- Use your "Please"s & "thank you"s.
- Use simple language and refrain from using jargon.
- Listen to the unspoken words of the customer.
- Pay attention to the customer. Do not fiddle with papers etc.
- Avoid use of jargons, slangs, and technical words

Magic Words and Phrases to use on a call

- However
- Yes
- Please
- Thank you for
- What I can do for you?

- I agree with you / you are right
- It may seem like that, however...
- I realise you must be feeling quite upset at the moment....
- I apologise for the delay.
- I appreciate your patience.
- As a special case for you.
- I am pleased to tell you.
- Anything else that I can do for you.
- How may I help you?
- My pleasure
- However, I regret to tell you
- I would like to help you in this
- I understand
- I will help you with...
- I assure you of
- May I ask you a few questions so that I understand your situation better?
- May I request you to
- Would you mind
- May I suggest that
- Kindly
- Certainly
- That's correct, yes
- I am sorry to hear that
- Please hold
- Have a Nice Day/ Have a pleasant evening / weekend etc.
- One moment please
- You are most welcome
- Thank you for your co-operation

Wicked Words and Phrases - DO NOT USE

- But
- No
- Never
- Sorry for the Inconvenience...
- That's not right
- Hold the line
- That's not correct

- Not possible
- I disagree with you
- Personalize the call - Address by last name rather than by only saying Hello (when coming back from Hold)
- What are you saying?
- Will you
- Fax me a letter
- Umm, Aha, Yeh, Ya,Uh-ha, Ha
- I'll try / I can't do that
- Can I speak
- Will you listen to me
- At least try and understand / why don't you understand
- You have to
- Hang on
- Problem noted
- Must /have to
- Are you sure
- I don't think so/I don't know
- I will not be able to call / I am not allowed calling
- May be you weren't there
- You must /will / have to make payment and you should.
- It's not possible that you didn't receive and I think

Unit 4.2: Query, Request or Complaint

Unit Objectives

At the end of this unit, you will be able to:

1. Categorise the customer message on chat or email whether it's Query, Request or Complaint

4.2.1 Categorising the Customer Message on Chat or Email Whether It's Query, Request or Complaint

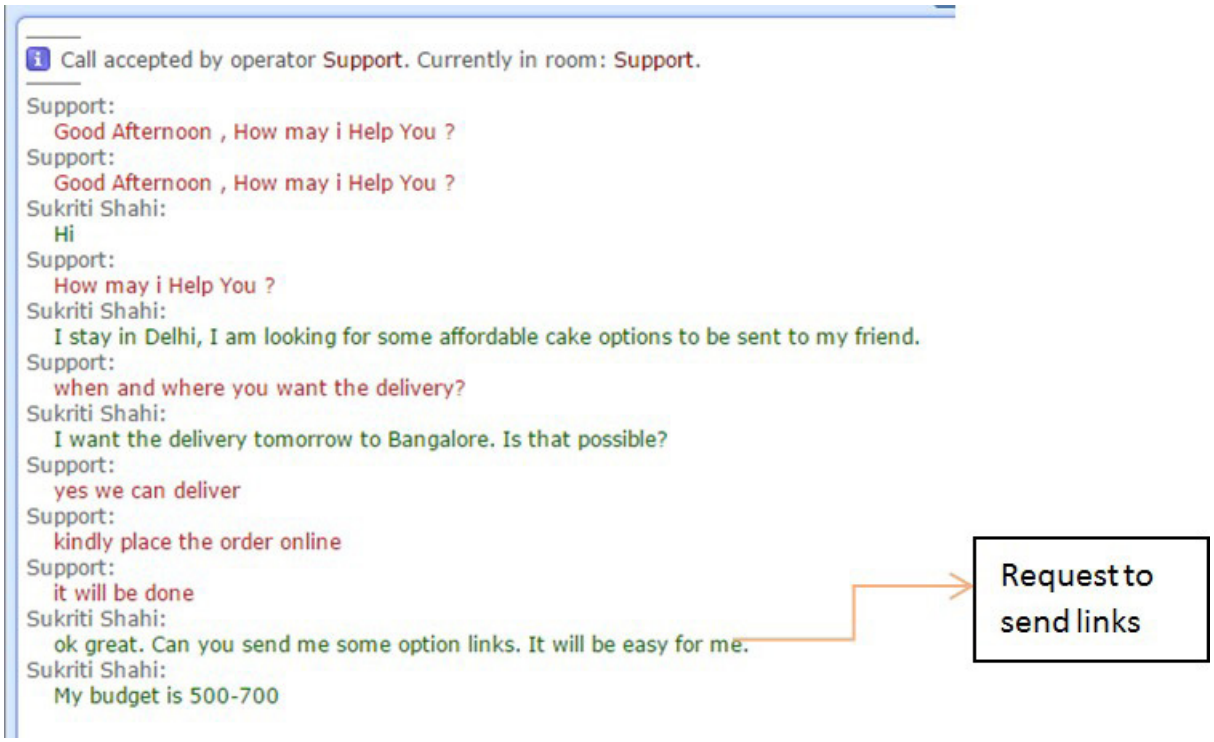

Fig 4.2.1.1: Example of a request from the customer

Here the customer is requesting the customer relationship manager to provide some product links to make her search better and save time.

Obtaining sufficient information from the customers

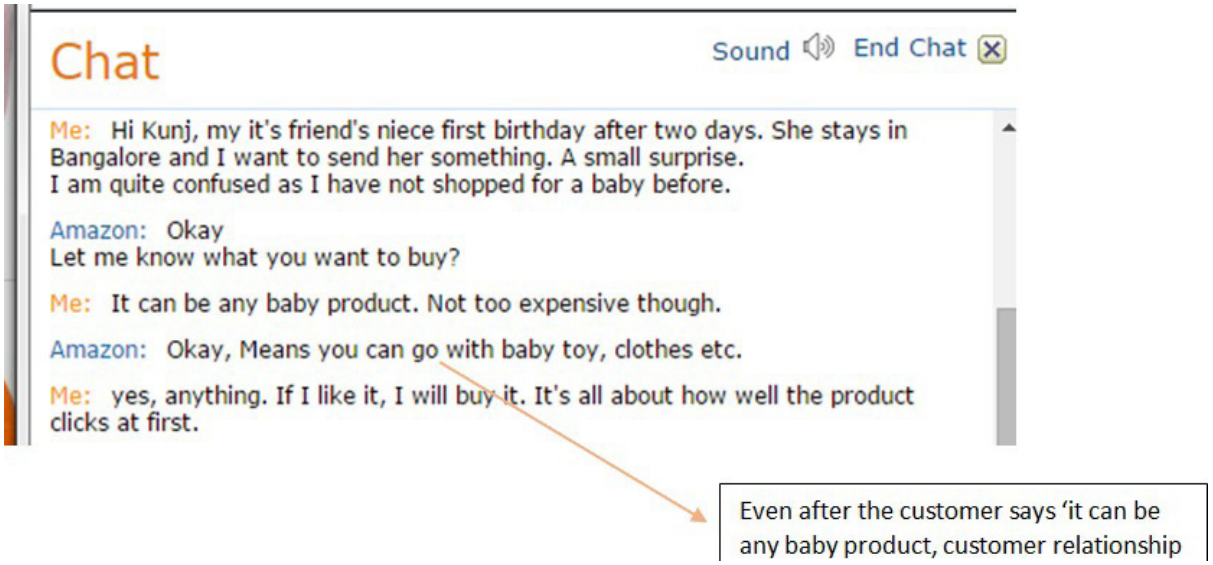

Fig 4.2.1.2: Confirm the assistance required by the customer

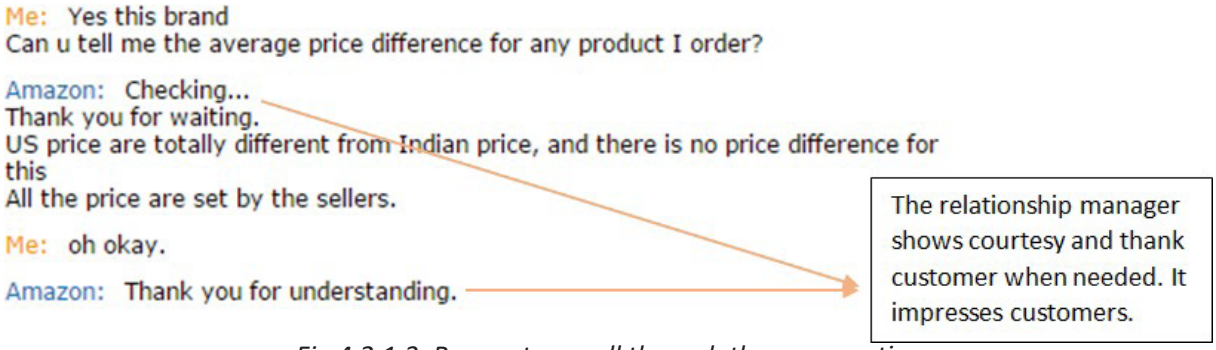

Fig 4.2.1.3: Be courteous all through the conversation

Summary

- Empathy, the art of seeing a situation through a customer's eyes, is an essential component to a successful customer service culture
- Empathy is not restricted to problem-solving, since a frustrated customer will want his feelings acknowledged before he is ready to accept your solution
- Empathy is the art of understanding and acknowledging a customer's feelings and needs, before finding a solution that meets them
- To obtain information from customers, questions need to be asked
- There are two types of probes – open and closed
- A request for information that allows the customer to speak freely is an open probe. Open probes generally begin with "what", "how", "why", "tell me", or "show me". A request that limits the customer's response to a few alternatives is a closed probe

- Closed probes generally begin with “do”, “are”, “is”, or “which”. They can be answered by “yes” or “no” or a choice among limited alternatives. Use open probes in the beginning of a conversation to gain information and when you want to expand on something, especially if a new topic has been brought up
- A service-level agreement (SLA) is a part of a service contract where a service is formally defined
- In practice, the term SLA is sometimes used to refer to the contracted delivery time (of the service or performance). As an example, internet service providers will commonly include service level agreements within the terms of their contracts with customers to define the level(s) of service being sold in plain language terms
- In this case the SLA will typically have a technical definition in terms of mean time between failures (MTBF), mean time to repair or mean time to recovery (MTTR); various data rates; throughput; jitter; or similar measurable details.

Notes

Exercise

Complete the sentences:

1. Customer retention is the activity that a selling organization undertakes in order to reduce _____.
2. Successful _____ starts with the first contact an organization has with a customer and continues throughout the entire lifetime of a relationship.
3. Customer retention has a direct impact on _____.
4. _____ also helps to understand customer's buying behaviour
5. _____, a term frequently used in marketing, is a measure of how products and services supplied by a company meet or surpass customer expectation.

Activity

Activity 1

- This activity is in the form of "Mock email session"
- The Trainer will drive the session
- Each Trainee should participate in this session as an agent
- The Trainer will play the role of a customer and will choose anyone from the class with whom he/she will have a mock email round
- The session will focus on the potential of the Trainees to fabricate their knowledge on the process flow along with proper soft skills
- The Trainer will send a query email to each trainee and play the game
- The Trainer will create tricky situations to examine whether the Trainees are confident or not
- Best performers will be appreciated by the class.

Activity 2

- This activity is in the form of "Probing Session"
- The trainer will divide the class into five groups (irrespective of the headcount)
- Every group will be assigned with the topics mentioned below:
  - Participants in group 1 will chat among each other but they should only use "Who" as a probing word. Anything apart for "Who" will be discarded and the trainee will be disqualified
  - Participants in group 2 will chat among each other but they should only use "What" as a probing word. Anything apart for "What" will be discarded and the trainee will be disqualified
  - Participants in group 3 will chat among each other but they should only use "Where" as a probing word. Anything apart for "Where" will be discarded and the trainee will be disqualified
  - Participants in group 4 will chat among each other but they should only use "When" as a probing word. Anything apart for "When" will be discarded and the trainee will be disqualified
  - Participants in group 5 will chat among each other but they should only use "How" as a probing word. Anything apart for "How" will be discarded and the trainee will be disqualified

- This is meant to be a fun game which sharpens the probing technique of the trainees
- The trainer will conduct the session and will mark trainees based on their technique
- Best performers will be appreciated by the class.

Notes

Skill India
कौशल भारत-कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

IT - ITeS SSC
nasscom

5. Documentation Process for Queries

Unit 5.1 - Different Styles/Approaches of Documentation

SSC/N7201

Key Learning Outcomes

At the end of this module, you will be able to:

1. List the common types of documentation process used to record queries
2. Select the correct category of documentation as per the list mentioned in the query management tool
3. Select relevant product reference guides or support materials to resolve queries

Unit 5.1: Different Styles/Approaches of Documentation

Unit Objectives

At the end of this unit, you will be able to:

1. Outline different styles/approaches of documentation when working with a variety of queries
2. Demonstrate note taking in incident query tool during capture of the information

5.1.1 Demonstrate Note Taking in Incident Query Tool During Capture of the Information

Closing the Chat

As you start the chat, it is equally important for you to close it on a warm note. Make sure the customer is through with his/her query and wants to end the chat. Make sure you sign off following the proper procedure of your company because how you converse is how the company's image will be perceived by the customer.

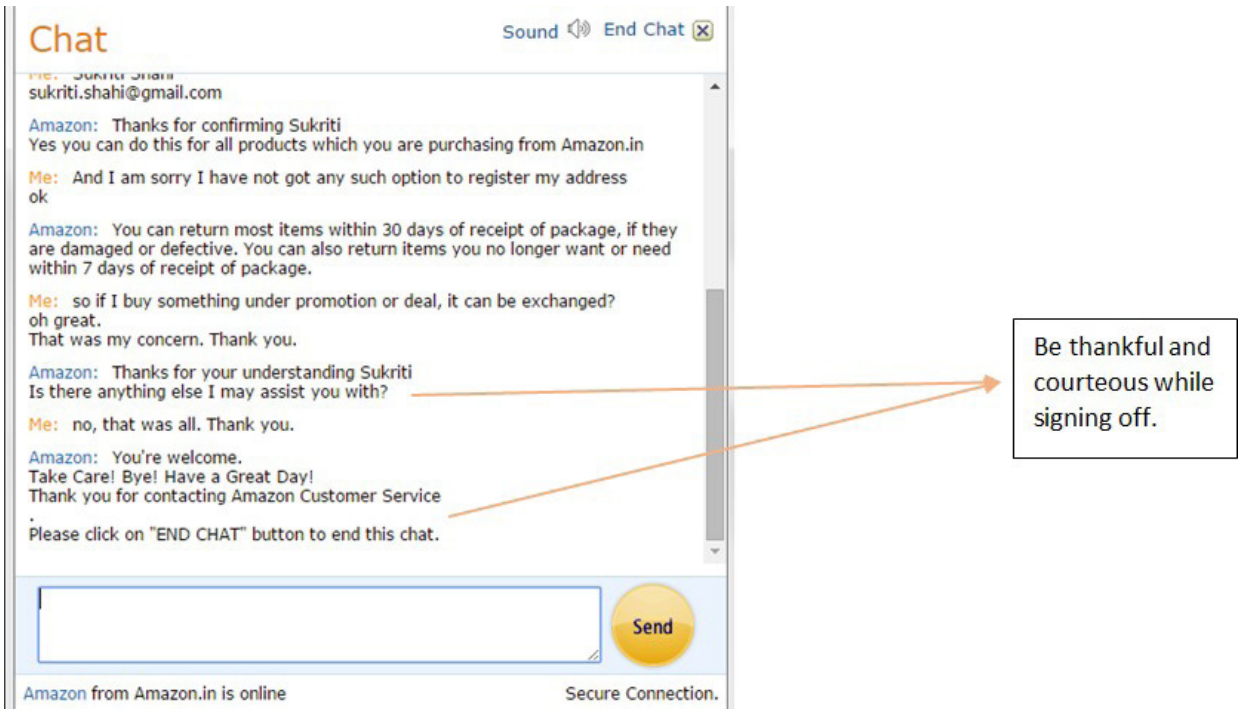

Fig 5.1.1.1: Be courteous while closing the chat

While Closing a Chat:

- Make sure you have resolved customer query to his satisfaction or have given him the viable alternative if the problem lies out of your expertise or concerned area.
- Do not forget to thank the customer to believe in your customer service and reach out to you when in need.
- Do ask the customer if there is any other issue he needs assistance with.

- Do not close the chat right away but be thankful and wish him good day or sign off according to your company procedure.
- Record the conversation for future purposes or references.
- Update your CRM according to the solution provided.
- Do not forget to take the feedback as per your company's procedure.

5.1.2 Access your Organizations Knowledge Base for Solutions to Queries

The product or the service that an organization caters to, varies from process to process. For example, an organization may collaborate with a laptop manufacturer and a separate wing of the respective organization communicates to the customers who use the laptops of that particular manufacturer. Thus, every process or wing must have a support material to resolve customers' issues. In the case discussed above, the wing which caters to the laptop manufacturer should possess a strong knowledge base, where the laptop related issues and resolutions are fabricated in details. Support materials may come in various forms. Those are:

- Users' Manual
- Knowledge Base
- Issues and Resolutions

The executives must refer to the supporting materials and consult it before providing any resolution. It might happen that an executive thinks that certain steps can help customers resolve an issue. However, it is advisable to refer to the supporting materials every time so that the room of error is zero. Let us go through a case study to understand the concept better.

5.1.3 Raising Service Tickets

A Service Request is a user request for information or advice, or for a standard change (a pre-approved change that is low risk, relatively common and follows a procedure) or for access to an IT service. A great example of a standard request is a password reset. Requests are usually handled by the Service Desk and do not require an RFC (Request for Change) to be submitted.

The process of receiving a call from the customer till raising a service request is manifold system. The steps of performing the same are:

1. Receive the call and greet the customer
2. Listen the issues faced by the customer minutely and acknowledge the same
3. Assure the customer that the issues will be taken care of immediately and try to fix the same
4. If the issue falls outside the competency level, raise a service request so that concerned persons can look into the matter
5. Confirm to the customer that a service request has been raised and share the service request number as a reference for future

Raising service tickets require painstaking documentation. The information you share with the customers such as resolution timeline should be realistic. For instance, if a customer contacts you with an issue with his dish TV and after initial probing you detect some technical glitches which require to be fixed by field technicians, convey the same message to him. Raise a service ticket against the complaint and then check for the availability of field technicians in his area. Once you have the entire information at your hand including resolution timeline, inform the same to the customer. Do not set false expectation. It will ultimately do harm to you and your organization.

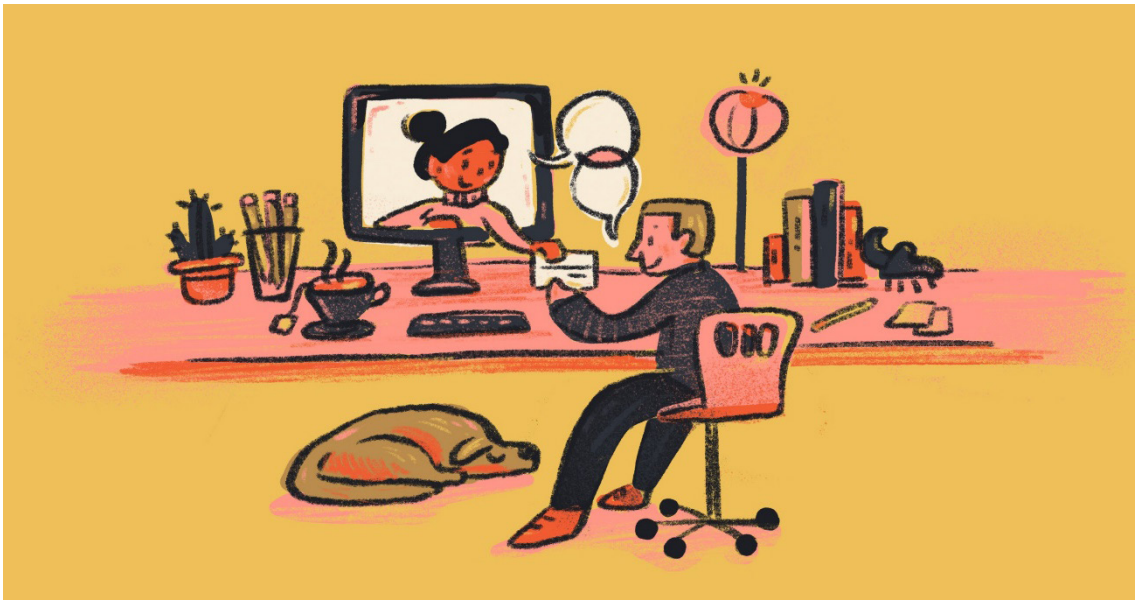

Fig 5.1.3.1: Raise service ticket and share the exact information with the customer

The process of raising service request varies from organization to organization. While some uses third party software to raise tickets, some have in-built facilities to do so.

While raising a service request, please keep the following aspects in mind:

- Capture correct information from the client and repeat it to the customer to cross-check
- While you capture information. Keep the customer engaged with a word of empathy
- Once you capture the necessary information, ask for some time (a couple minute at max) from the customer to process the ticket
- After you process the ticket, you will be able to generate a docket number with all necessary details
- Share the docket number and other information such as resolution timeline with the client
- Update your system about the service ticket by feeding the docket number

Field	Description
Summary	A short description of the request.
Reporter	The person who submitted the request.
Component/s	Segments of your IT infrastructure that relate to the request. For example, “Billing services” or “VPN server”. These are used for labelling, categorization, and reporting.

Field	Description
Description	A long, detailed description of the request.
Linked Issues	A list of other requests that affect or are effected by the request. If your business uses other multiple products, this list may include linked development issues.
Assignee	The service desk agent assigned to fulfill the request.
Priority	The importance of the request's resolution to the service desk. Usually in regards to your business needs and goals. Sometimes calculated by impact and urgency.
Labels	A list of additional custom labels used for categorizing or querying records.
Request participants	A list of extra customers or vendors who take part in resolving the request.
Approvers	A list of business or financial contacts responsible for approving the service request.
Organizations	A list of customer or vendor groups interested in the request's resolution.
Impact	The effect of the service request, usually in regards to service level agreements.
Urgency	The time available before the business feels the service request's impact.
Pending reason	A short description or code that indicates why the service request is not progressing.
Product categorization	A category of IT asset or system that the request effects.
Operational categorization	A category of action or function required to fulfill the request.

Table 5.1.3.2: Essential fields of a service request

IT companies, especially the companies that directly deal with the customers provides specific services. For example, Company A is associated to a Telecom Service Provider and Company A deals with the customers of that Telecom Organization. Company A must communicate directly with the customers and take care of various issues faced by the customers. To perform the same, Company A must have a strong and streamlined resource backup which will enable it to provide better service. Dealing with service requests is one of the key jobs of such a company. A customer might face network connectivity issue and contacts Company A which represents a Telecom Organization. The executives must take down the issue faced by the customer and raise a proper and well-documented service request for the back-end team. The back-end team comprises the technical support personnel who will look into the issue and fix it. Therefore, a service request plays an important role to note down and fix various issues.

Common examples of IT Service Requests are:

- Password Reset
- Password Change
- Password Retrieval
- User ID Creation
- Granting Access to a particular IT Service, say, the HRMS site of the company

Service Requests generally include the following scope:

- Access Management
- Application Installation
- Peripheral Installation
- Anti-virus Installation
- Security Hardening
- Employee Triggered Requests (related to employees like Colleagues, Line Managers and Subject Matter Expert)

5.1.4 Prioritize Service Requests/Incidents According to Organizational Guidelines

Priority is used to establish timescales, set deadlines, access TATS and effort to respond to and resolve an issue (Service Request). Priority is derived from an Impact and Urgency Priority Matrix.

- **Impact -** Measures the effect of a Service Request (For ex, Number of Customers Affected / Influenced by the Service Request).
- **Urgency -** Measures how long it will be until the Service Request has a significant impact on the business (For ex, the server may go temporarily down, if all employees request for e-mail password change on the same day).

The Request Impact Matrix

Category	Description
High (H)	• A large number of staff are affected and / or not able to do their job without the Request getting closed. • A large number of customers are affected and /or acutely disadvantaged, without the Request getting closed. • The financial impact of the Incident is high. • The damage to the reputation of the business is likely to be high, in case the Request is not closed promptly.

Category	Description
Medium (M)	• A moderate number of staff are affected and / or not able to do their job without the Request getting closed. • A moderate number of customers are affected and / or acutely disadvantaged, without the Request getting closed. • The financial impact of the Incident is moderate. • The damage to the reputation of the business is likely to be moderate, in case the Request is not closed promptly.
Low (L)	• A minimal number of staff are affected and / or able to deliver an acceptable service but this requires extra effort. • A minimal number of customers are affected and / or inconvenienced but not in a significant way. • The financial impact of the Incident is minimal. • The damage to the reputation of the business is likely to be minimal.

The Request Urgency Matrix

Category	Description
High (H)	• The effect of the Request aggravates and increases rapidly. • Work that cannot be completed by staff is highly time-bound. • A minor Request can be prevented from becoming a major Incident by acting immediately on it. • Several users with VIP status have requested for this service.
Medium (M)	• The damage caused by the Incident increases considerably over time. • A single user with VIP status has requested for this service.
Low (L)	• The damage caused by the Incident only marginally increases over time. • Work that cannot be completed by the Help Desk Attendants is not time sensitive.

Few Examples of Service Request Prioritization

Priority1: High priority person(s) service request or activity with a strict deadline

Priority 2: Core office request for information for upcoming (but not as strict) deadline

Priority 3: Role request for ARS to complete job tasks

Priority 4: Request to add a new mailbox for new user (with an upcoming but not immediate deadline)

Priority 5: Information about a new service with no urgency specified

Case Study: Raising Service Request Example 1

Technical Support Executive: Welcome to XYZ Ltd. This is Priyanka. How may I help you sir?

Customer: Hello! My name is Vipin Verma and I am a business card holder of your bank. I have a current account and I operate and monitor financial transactions online using the details of my business card. But recently my card has been blocked since I inserted wrong OTP thrice. Please enable the service as I want to access and use my card. You see, it is very important to me.

Technical Support Executive: I understand how you feel Sir, however, please don't worry, let me check the issue and resolve it. Before I proceed, could you please provide me your ID number and your card number?

Customer: Sure. My ID number is 9876 and my card number is 1234 3456 6789.

Technical Support Executive: Thank you sharing the details. Please be on hold for 2 minutes, while I look into the matter.

After 2 minutes

Technical Support Executive: Thank you for being on hold Sir! I would like to inform you that your business card has been blocked since yesterday. That's why you are unable to use it.

Customer: (Shocked) I know that. I don't want to listen to the issue once again from the bank. I want a solution.

Technical Support Executive: (Calmly) Please don't panic Sir! I understand the situation you are in, I have been through the same. I will be able to help you with the situation. I will go ahead and submit a requisition in your name. I am sure that you will be able to use your business card again within half an hour.

Customer: Thank you so much! You have been such a great help.

Technical Support Executive: Is there anything else I may assist you with?

Customer: No, that's all. Thank you once again.

Technical Support Executive: Thank you for calling ABC Ltd. Have a great day

Summary

- Support materials may come in various forms. Those are:
  - Users' Manual
  - Knowledge Base
  - Issues and Resolutions
- The executives must refer to the supporting materials and consult it before providing any resolution
- A Service Request is a user request for information or advice, or for a standard change (a pre-approved change that is low risk, relatively common and follows a procedure) or for access to an IT service
- While raising a service request, please keep the following aspects in mind:
  - Capture correct information from the client and repeat it to the customer to cross-check
  - While you capture information. Keep the customer engaged with a word of empathy
  - Once you capture the necessary information, ask for some time (a couple minute at max) from the customer to process the ticket
  - After you process the ticket, you will be able to generate a docket number with all necessary details
  - Share the docket number and other information such as resolution timeline with the client
  - Update your system about the service ticket by feeding the docket number.

Notes

Exercise

Consider the following scenarios and evaluate the priority of the issues. After detecting the priority level of the issues, rearrange them from High to Low.

1. A system is affected by virus which has apparently zero impact on the productivity of the organization
2. The server room gets impacted owing to major fault. All the systems in the organization are vulnerable which associates the risk of data leakage
3. The power supply of a particular wing is damaged and thus the employees of that wing are unable to work
4. An employee has forgotten his password and raised a service request to resolve the issue.
5. The router of the workplace is not working fine and as a result the productivity of the employees is getting hampered.

Activity

Activity 1

- This activity is in the form of "Role Play"
- The trainer will divide the class into few groups
- Each group will be assigned with the following task
- A customer sends a query inquiring for a data plan of 2G. Talk to him/her and understand his/her needs
- Analyze if his/her needs, can be fulfilled by the 2G plan or they require a 3G plan. In either of the cases, try for an up sell
- A customer chats regarding information on an SMS packs
- Eventually you get to know that the customer also has WhatsApp but doesn't use it due to high prices of Data packs
- Offer him/her better plans in net packs and brief him about why it would be better than using an SMS pack
- The trainer will ask the trainees to carry out the role play activity
- The key focus of the trainer will be on the soft skills of the trainees
- The trainees should execute the chats under the supervision of the trainer
- The best performers will be appreciated by the class.

Activity 2

- This activity is based on the usage of organizational knowledge base
- The Trainer will arrange for a dummy CRM with chat flow, script and knowledge base
- The Trainees must take mock chats driven by the Trainer
- The Trainer will present situations where Trainees should refer to existing knowledge base and respond accordingly
- The Trainer should also look for the hold and overall flow adherence of the Trainees
- Best performers will be appreciated by the class.

Notes

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6. Process of Query Resolution

Unit 6.1 - Identify the Nature of the Customer

SSC/N7201

Key Learning Outcomes

At the end of this module, you will be able to:

1. Analyse data and activities stored in CRM tool to understand the past records of a customer before giving resolution
2. Discuss various balanced judgments to different situations that could be used as a resolution

Unit 6.1: Identify the Nature of the Customer

Unit Objectives

At the end of this unit, you will be able to:

1. Categorize the mood of the customer (angry, dissatisfied, seeking advice, dominant) before proceeding with the resolution

6.1.1 Examine the Possibilities of Adapting Different

Design various problem-solving approaches in different situations

Customer Trait	How to Handle
Demand immediately to speak to the management. Let me talk to your supervisor now...! 	• Try to determine if this attitude comes from having called before and always check case notes. • Apologize. • If you cannot resolve the issue, get a team leader or supervisor to take the call. Remember, you have not failed because you had to escalate. This may be the best solution to create customer satisfaction.
Overly demanding, assertive, shouting. "Just bought this computer two days ago and it doesn't work. I need someone to help me right now...!" 	• Acknowledge the customer's frustration (the human side). Use good active listening skills to determine the real problem. Do not be too chatty; they are upset. Be direct, use close-ended questions (this helps settle them down. Always be courteous. If possible, give value to their issue.
Arrogant...for example... I am a MCSE, of course, I know that.... 	• Always be courteous. • Acknowledge what they are saying (boasting about).

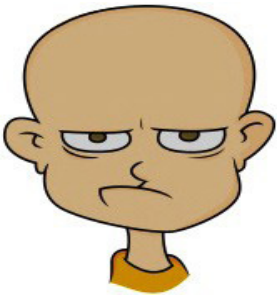
Customer Trait	How to Handle
Unhappy, a complainer. 	• Hear them out. • Empathize. • Apologize if applicable. • Take action to solve their concern (within your guidelines). • You may need to suggest an alternative solution (eg: hp support online).
Dissatisfied with product or information. 	• Listen to understand their real concern. • Collect information to solve the issue. • Apologize for the error if misinformation was given. • Focus on solving their concern-NOT on assessing blame.

Table 6.1.1.1: Types of customers

6.1.2 Evaluate the Use of Data and Activities Stored in Customer Management Tool

Design templates to record the query with the resolution for future reference

Templates are always handy to record queries quickly. Before we get into templates and some samples, first let us understand why templates are essential.

Assume that a customer calls you with a complaint against call drop issues. Call drop issues are triggered by network problems and it is generally the entire locality that falls under a faulty network tower suffers from such an issue, not one or two persons individually.

Now, if you have a template to record call drop issues and raise a service request ready with you, you can handle the volume of complaint calls expected to come from a locality affected by the call drop issue. On the contrary, if you do not have a template handy, you have to go for manual documentation which could be time consuming, tedious and could result in errors if you are particularly rushed with the number of calls.

This is why templates are always crucial. Let's see the advantages of creating and maintaining templates.

- Templates bring pace to your task
- It allows you to work error-free
- Templates standardize query handling process
- Templates are easy to create and effective tool to capture and share necessary details

- In case of raising service request or generating tickets, templates play an instrumental role

Templates are standard formats for documenting observations. The observation includes various aspects of the company. The type or the key parameters of the template change depending on the department. For instance, the template that is used by the transport department of a firm should be entirely different to that of the technical department which take care of operations.

The information provided in the template is used for performance examination.

Different techniques used to obtain data/information and how to apply these

- **Case Studies**

This method basically maintains that the information that is collected is based on the experience of the clients.

- **Focus Groups**

This data or information method is reliant on group discussions with in-depth topic assessment. This can be about marketing tactics, evolutionary aspects related to data, their sources, and searches, codes, programming languages or even any form of bugs.

How to Carry Out Rule-Based Analysis on the Data/Information

The rule-based study practically involves decision-making process or conditional branching. It is a design of methodology production whose basis lies in software factors - analysis of techniques to make appropriate decisions for a new project.

In this rule, we will find the presence of three or more conditions like pseudo codes or if statement. The performance requirement is the accommodation of rule engine solution.

Process of Application

1. **Select the input variables**

   As there are many variables present in a new project, creation of a matrix is essential between methodologies and factors. We can see the presence of factors in methodologies.

2. **Bad Sub Rules**

   There are certain types of factors that cannot be connected with other types of factors. If they are combined, this step cannot lead to the creation of bad sub rules. In this case, two rule categories are recognised. They are:

   - System rules with high requirement stability, low complexity and small size system
   - System rules with low requirement stability, medium complexity and size system

3. **Variable Reduction**

These factors are identified but their elimination doesn't make any impact. These generally comprise application domain and project type.

4. **Category Merge**

For methodology identification, formation of many categories takes place and its foundation can be on project type.

5. **Hypothetical Examples**

We can see the beginning of hypothetical example sets if we look at extreme cases. The rule- based analysis is based on the acknowledgment of factors like less complexity, high requirement stability, and small size.

Who to Go To In The Event Of Inaccurate Data/Information and How to Report This

In an organization, the hierarchy usually involves a singular/group of power at the top with succeeding levels of power beneath them. This is the leading mode of organization among large organizations; most corporations, governments, and organized religions are hierarchical organizations with different levels of management and power or authority.

Check the accuracy of work, involving colleagues and the formats in which you need to provide it

Every project has a stipulated timeline. A project commences with setting a goal followed by other aspects like developing, testing, and quality analysis and final deployment.

Set-up Goals

Every stage has its own format where information has to be filled in precisely. A project goal template must be implemented and details must be filled in regularly. A sample format is given below:

PROJECT GOAL AND OBJECTIVES WORKSHEET

PROJECT NAME				PROJECT MGR.	
DATE CREATED		VERSION DATE		VERSION NO.	0.0.0

TEST GOALS & OBJECTIVES AGAINST SMART CRITERIA

SPECIFIC • MEASURABLE • ACHIEVABLE • RELEVANT • TIME-BOUND

GOAL STATEMENT	
OBJECTIVE NO.	An objective should look like this: "To increase the native plants between 1st and 3rd Streets by 50% by March 31st."
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Fig 6.1.2.1: Project goal template

Summary

- Templates are always handy to record queries quickly
- The advantages of creating and maintaining templates. o
  - o Templates bring pace to your task
  - o It allows you to work error-free
  - o Templates standardize query handling process
  - o Templates are easy to create and effective tool to capture and share necessary details
  - o In case of raising service request or generating tickets, templates play an instrumental role
- The rule-based study practically involves decision-making process or conditional branching
- A project goal template must be implemented and details must be filled in regularly.

Notes

Exercise

Match Column A with Column B

Column A	Column B
Unhappy Customer	• Acknowledge the customer's frustration (the human side) • Use good active listening skills to determine the real problem
Arrogant Customer	• Hear them out • Empathize • Apologize if applicable
Dissatisfied Customer	• Give the customer enough time to vent out anger
Irate Customer	• Apologize for the error if misinformation was given • Focus on solving their concern-NOT on assessing blame
Demanding Customer	• Always be courteous • Do not use profanity against insolence

Activity

Activity 1

- This activity is in the form of customer management mock chat sessions
- The Trainer will play the role of the customer and must ensure to cover different types of scenarios as discussed in the module
- Trainees should take the chat and proceed according to the script with proper chat opening, greeting, empathizing and acknowledging the issues of the customer
- According to the type of customer, Trainees must take different approaches
- Each Trainee must take at least three calls where he or she faces three different scenarios
- The Trainer will guide Trainees with their approaches and rectify them if needed
- Best performers will be appreciated by the class.

Activity 2

- This activity is in the form of mock template creation
- The Trainer will discuss the importance of templates first and will show some dummy templates
- Post that, the Trainer will ask the Trainees to create their own mock templates
- Each Trainee must prepare at least three different templates
- Once Trainees finish creating templates, the Trainer will ask them to submit their task
- The Trainer will go through the templates and will share his or her feedback
- Based on the feedback shared by the Trainer, Trainees should rework on the templates.

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7. Deal Remotely with Basic IT Service Requests/Incidents – Non Voice

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Unit 7.1 - Monitor Systems to Identify Promptly Automated Alerts and Customer Service Requests

Unit 7.2 - Analyse Automated Alerts to Accurately Identify the Nature of Incidents

Unit 7.3 - Policies and Compliance Requirements that Apply to IT Service Requests and Incidents

SSC/N7201

Key Learning Outcomes

At the end of this module, you will be able to:

1. Identify promptly automated alerts and customer service requests
2. Analyse automated alerts to accurately identify the nature of incidents
3. Discuss the policies and compliance requirements that apply to IT service requests and incidents

Unit 7.1: Monitor Systems to Identify Promptly Automated Alerts and Customer Service Requests

Unit Objectives

At the end of this unit, you will be able to:

1. Demonstrate how to access, monitor and validate automated alerts and customer service requests

7.1.1 How to Access, Monitor and Validate Automated Alerts and Customer Service Requests

There are 2 types of Alert Monitoring processes, namely,

- Active Monitoring of Components and Services: Pro-active actions to define the behaviour of the system or service
- Passive Monitoring of Components and Services: Passive acknowledgment of the behaviour of the system or service

Monitoring of Automated Alerts is accomplished by executing the below roles and functions:

Static Process Roles

Alert Process Owner

- Initiator of the process
- Accountable for defining the process strategic goals and allocating all required process resources

Alert Process Manager

- Manager of the entire process
- Responsible for its effectiveness and efficiency

Dynamic Process Roles

- These roles are dynamically created during the Alert Management Process.

Alert Owner

- The attribute in the records contains the value of the Role / Function currently accountable for the Alert.

Alert Agent

- The attribute in the records contains the value of the Role / Function currently responsible for either an activity or task within the overall activity of the Alert.

Service Specific Roles

Service Expert/Service Specialist

They can consult and/or act as

- Alert Analyser and Classifier
- Alert Action Reviewer / Auditor
- Service Owner

Customer Specific Roles

The process of accessing and validating Automated Alerts involves the following:

- Categorization and Filtering of Alerts
- Recording of Alerts
- Adherence to Alert Guidelines
- Controlling and Authorizing Alerts
- Defining the Critical Success Factors (CSF)
- Defining the Key Performance Indicators (KPI)
- Effecting Documentation
- Facilitating Evaluation and Closure

Categorization and Filtering of Alerts

The Classification and Filtering of an Alert aims at providing a control factor for the particular Alert, which will be used for need-based decision making with respect to Alert handling. The most challenging activity within the Alert Handling is the classification and filtering of Alerts. Thresholds set to high can lead to dangerous situations when issues are realized too late, whereas Thresholds defined too low lead to an overload of information and Alert Messages, thus exceeding the pre-specified capacity of monitoring tools and staff.

- **Informational Alerts -** The Alert is logged and hence no further steps are required
- **Exceptional Alerts -** Alert is forwarded to Incident, Problem or Change Management, thus generating RFC, Incident Record or Problem Record
- **Warning Alerts** - Alert is proceeded on in next process step

Recording of Alerts

The following information are required, in predefined formats, for appropriate recording of alerts.

- **Unique Identifier -** Alert ID
- **Alert Device -** Name / Type / ID Number of device alerting and device being affected by the alert
- **Alert Component -** Name of component alerting and component being effected by alert
- **Type of Alert / Type of Failure** - Incident / Change / Problem / Failure occurred
- **Alert Time / Date -** Date and Time of Alert
- **Status -** Status of the Alert, which is set while passing a Control Activity
- **Services -** Service(s) affected by this Alert
- **Alert Description -** The description of the Alert including the Alert Argument

Alert Log - Log comprising of all Alert Notifiers and Records for a certain time period. Time period to be

defined in Security Management or other Service Process

Additional information items (artefacts), such as the Request for Alert / Change (RFC) or the Forward Schedule of Alert / Change(FSC), typically can be realized by considering the information out of one or more process records and either filtering, merging, correlating or interpreting these information.

Adherence to Alert Guidelines

The accessing and validating process of Alerts needs to adhere to few basic guidelines, namely,

- Every Incident in IT service or IT infrastructure triggers the creation of a new Alert Record
- The Alert Agent is responsible for documenting each activity in the Event & Alert Record
- The Alert Owner has to control the Alert Agent
- The Alert Owner and Alert Agent can only transfer their duties if the new person or group agrees
- The subsequent Alert Owner or Agents have to be recorded in the appropriate attribute in the Alert Record
- The Alert Owner and Alert Agent should preferably be a person rather than a group

Refer to the Service Description and Service Level Agreement in order to consider Service-specific and Customer-specific rules for the definition of thresholds and actions.

Controlling and Authorizing Alerts

In daily IT operations, a permanent system and service monitoring is in place, generating Alerts. Alerts created by automated tool and manual operations are displayed, recorded and logged for classification. The activities that follow suit are:

- **Authorization Check -** Is the Alert Triggering System or person authorized to provide that information?
- **Documentation and Verification -** Alert Record is filled in and checked for completeness and formal correctness, i.e. it is verified that all mandatory information has been provided. If this is not the case, or if the Alert generating system or person is not authorized to send Alerts, the said Alert record can be rejected
- **Status Update -** The Alert Record is then shifted to the status "recorded-accepted" or "recorded-rejected"

The Activity specific guidelines are:

- Alert Provider is set to the person or systems who triggered the Alert
- Alert Sponsor is set to the person who triggered the Alert, if no other sponsor is known
- Alert Agent is set to Alert Management Team, if the Alert Agent is unavailable
- Alert Owner is set to Alert Management Team, if the Alert owner is unavailable
- Alert Description must contain a crisp and meaningful description of the Alert
- The Process Instance, which triggered the Alert, should be referred to as the Unique Identifier of the Alert

Defining the Critical Success Factors

Critical Success Factors (CSF) involved are:

- Defining the correct level of filtering of alerts
- Closely integrating Alert Monitoring in the Service Management Processes

- Defining Thresholds together with Service Design and Service Operations through a Trial and Error process
- Dedicating appropriate tools for Alert Monitoring for supporting the automated monitoring of systems and services

Defining the Key Performance Indicators (KPI)

The Key performance Indicators defined in the Alert Management System are:

- Number of Alerts over a given period of time
- Number of Alerts that required human intervention
- Number of Alerts that could be solved without human intervention
- Number of Alerts that defined incidents and problems
- Number of Alerts triggered by Known Incidents
- Number of Alerts repeated
- Number of Alerts indicating issues in other Service Operation Processes, namely, Availability, Continuity and Performance etc.

Effecting Documentation

The Alert Management Documentation process involves adherence to a predefined set of guidelines, namely,

- The Alert Agent has to update documentation
- Alert Owner has to verify the documentation
- If the verification stage returns dissatisfactory results, the Alert Agent is requested to improve the documentation
- Process Interface - Information about Services and Configuration Items affected by the Alert are updated in the CMDB (Configuration Management Database), via the help of Configuration Management

Facilitating Evaluation and Closure

This phase is also known as Post Implementation Review (PIR). This stage is performed according to the regular level of SLA quality defined in the Service Description.

- A PIR is performed, and its results are recorded
- If the PIR does not attest a successful Alert counter action, a rollback must be triggered
- Consequently, Change Management needs to be informed
- The Alert record is updated to the status “closed-verified” or “closed-failed”, depending on the success of the Alert reflected by the post implementation review and the necessity of a rollback

Successful Evaluation of the Alert System involves answering the following Questionnaire:

- Does the Alert, classified as an issue, recur?
- Did the Alert counter action meet the desired targets (In terms of KPIs like TAT)?
- Was the Alert counter action implemented on time?
- Did any incident occur while the Alert counter action passed through the process?

- Was the Alert counter action performed, without exceeding the allocated financial budget?
- Has the Alert been documented and the CMDB (in some cases) updated respectively?
- Did everyone involved in the Event & Alert counter action stick to the process SLAs and guidelines?
- Was any information missing, which was essential to take decision at any stage of the process?

Accessing and monitoring the IT Service Requests involve the following:

- A customer or an employee requests help from the service catalogue or via email
- The service desk assesses the request against the pre-defined approval and qualification processes. If required, they send the request for financial or business approval
- A service desk agent works to fulfil the service request, or forwards the request to someone who can
- After resolving the request, the service desk closes the ticket
- The agent consults the customer to ensure they are satisfied with the services

The Service Request template involves:

- **Service Requests**, which do not require approval. It is recommended to use them for pre-approved service requests
- **Service Requests with approvals**, which mandatorily require the Approval phase. It is recommended to use these for requests that need either business or financial approval

Fig 7.1.1.1: Process-flow of a service request circulation (Image courtesy: https://confluence.atlassian.com)

7.1.2 Validate Automated Alerts to Ensure They Are Genuine Incidents

Validating and shortlisting alerts are difficult, tiresome yet a very crucial task. The shortlisting of the alerts post minute validation speeds up the process of fixing issues. At times, systems receives false alerts or fake alerts which require to be eliminated. Otherwise, the process of resolving issues will suffer. Therefore, an engineer must be able to analyse and infer whether the alerts are genuine or not. The followings are the advantages of validating the authenticity of the raised alerts.

Speed of assessment – Validates alerts in minutes to eliminate false positives and identify real threats, so one can cater to it quickly.

Efficient Time Management – Reduces the time and resources required to manually comb through volumes of false alarms and low priority alerts.

Security Preservation: Advanced detection combines forensic automation and memory analysis techniques tailored to detect malware and suspicious code on compromised systems.

Wholesome Development – Provides collected intelligence and allows analysts to drill down into identified issues to aid in swift remediation and incident response.

Unit 7.2: Analyse Automated Alerts to Accurately Identify

Unit Objectives

At the end of this unit, you will be able to:

1. Describe the procedure of accessing organization's knowledge base to identify issues and solutions
2. Use organization's guidelines and standard scripts to resolve issues
3. Discuss the process of escalating issues outside competency level
4. Evaluate the suitability of solutions/workarounds

We have already discussed why and how to refer to the organization's knowledge base and use the standard script to resolve issues (Please see to 2.2.1: Relevant product reference guides or support materials to help resolve problems)

Here we will discuss the process of communicating with the seniors or experts for assistance.

7.2.1 Refer Service Requests/Incidents outside Your Level of Competence and Authority to Appropriate People

Refer queries outside your area of competence or authority promptly to appropriate people

The primary goal of an executive is to learn various things from the experienced and senior employees. An executive, graduating fresh from college, knows the basic things about his/ her job role. However, to be at par in terms of industrial context and standards, an engineer should seek guidance from the experts and seniors at the organisation.

While obtaining guidance from appropriate people, an executive must keep the following things in mind:

Dos and Don'ts while obtaining guidance from appropriate people

- Always approach a person maintaining company protocol. For example, if an engineer needs some assistance from person of higher authority, he/ she must follow the appropriate hierarchy to approach
- An executive should first ask for guidance to the immediate boss or the Team Lead. If the issue is not resolved, then he/ she should seek assistance from the manager or someone immediate in the hierarchy It is advisable to fix an appointment with the concerned person beforehand, if possible
- Always carry notebook and pen, or any kind of instrument to document the main points and avoid forgetting things. Approaching a person for same issue is not only redundant but also annoying.
- Maintaining a Minutes of Meeting is a good practice. Minutes of Meeting comprises the guest of the discussion. It not only helps keeping a written documentary of the discussion, but also as a future point of reference

- Maintain professional behaviour while taking assistance from anyone. Do not cut into his/ her point with personal opinion. If you want further clarification, ask questions after he/ she finishes his conversation. While seeking clarification in team meetings, a person should always raise his/her hands before asking questions
- Always thank a person whenever you receive any assistance from him/ her

Obtaining guidance is the first step towards continuous learning. However, the emphasis is on the implementation of the learning outcomes at work. An executive must try to implement the guidance to improve the quality of work. This not only helps one grow as a learner, but also boost the confidence level.

Unit 7.3: Policies and Compliance Requirements that Apply to IT Service Requests and Incidents

Unit Objectives

At the end of this unit, you will be able to:

1. Explain the significance of complying with relevant standards, policies, procedures, guidelines and service level agreements (SLAs)

7.3.1 Comply with Relevant Standards, Policies, Procedures, Guidelines and Service Level Agreements while Dealing with IT Service Requests/Incidents

For an employee, it is important to meet the work requirements in the given timeline. The work requirements include the followings:

- Activities (what you are required to do)
- Deliverables (the outputs of your work)
- Quantity (the volume of work you are expected to complete)
- Standards (what is acceptable performance, including compliance with service level agreements)
- Timing (when your work needs to be completed)

It is important for an employee to agree to their work requirements, be in sync with and obtain guidance from appropriate people like:

- Subject Matter Expert (SME)
- Team Lead (TL)
- Manager
- Floor Manager
- Process Manager
- Immediate Seniors
- Floor Supports

It is important for an employee to stick to the Service Level Agreements (SLAs).

- Service level agreement is a vital component of the service contract.
- In practice, SLA refers to the time considered to finish a job as per the contract. As an example, internet service providers will commonly include service level agreements where the timeframe of the net-service will be considered.
- SLA comprises of two basic components; Mean Time Between Failures (MTBF) and Mean Time To Recovery (MTTR).
- In plain language, SLA is the negotiated agreement between two or more parties. One of the parties is the customers, and the other party should be the service-provider.

Service-level agreement (SLA)

- A service-level agreement (SLA) is a part of a service contract where a service is formally defined.
- In practice, the term SLA is sometimes used to refer to the contracted delivery time (of the service or performance). As an example, internet service providers will commonly include service level agreements within the terms of their contracts with customers to define the level(s) of service being sold in plain language terms.
- In this case the SLA will typically have a technical definition in terms of mean time between failures (MTBF), mean time to repair or mean time to recovery (MTTR); various data rates; throughput; jitter; or similar measurable details.
- In other words, we can say that a service-level agreement is a negotiated agreement between two or more parties, where one is the customer and the others are service providers

Customer-based SLA:

An agreement with an individual customer group, covering all the services they use.

For example, an SLA between a supplier (IT service provider) and the finance department of a large organization for the services such as finance system, payroll system, billing system, procurement/ purchase system, etc.

Service-based SLA:

An agreement for all customers using the services being delivered by the service provider. For example:

- A car service station offers a routine service to all the customers and offers certain maintenance as a part of offer with the universal charging.
- A mobile service provider offers a routine service to all the customers and offers certain maintenance as a part of offer with the universal charging
- An email system for the entire organization. There are chances of difficulties arising in this type of SLA as level of the services being offered may vary for different customers (for example, head office staff may use high-speed LAN connections while local offices may have to use a lower speed leased line).

Multilevel SLA:

The SLA is split into the different levels, each addressing a different set of customers for the same services, in the same SLA.

Corporate-level SLA:

Covering all the generic service level management (often abbreviated as SLM) issues appropriate to every customer throughout the organization. These issues are likely to be less volatile and so updates (SLA reviews) are less frequently required.

Customer-level SLA:

Covering all SLM issues relevant to the particular customer group, regardless of the services being used.

Service-level SLA:

Covering all small issue relevant to the specific services, in relation to this specific customer group.

Exercise

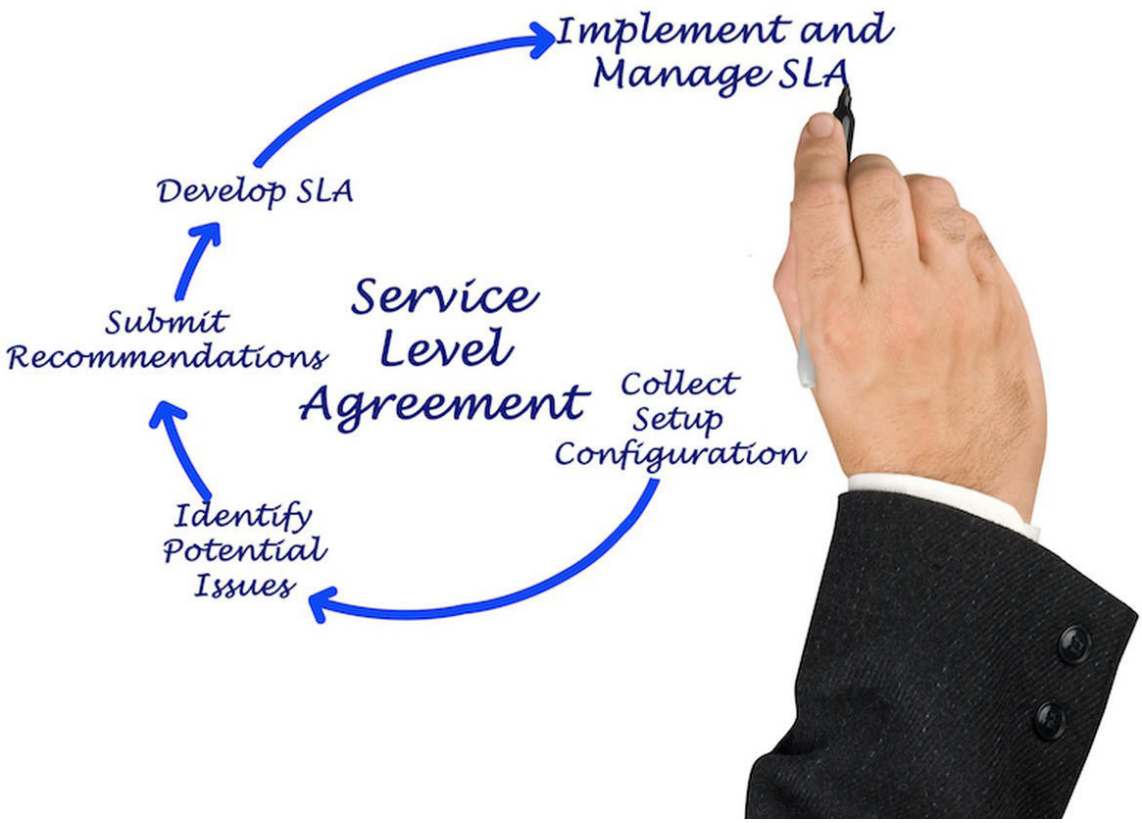

Fig 7.3.1.1: Service Level Agreement

Relevant standards, policies, procedures, guidelines and service level agreements (SLAs)

- The Service Request process should be followed for all Requests for Change (RFC) or Assistance Service Requests (ASR) for support of existing services, regardless of whether the request is eventually managed as a project or through the Service Request process.
- Requests do not have to originate with the Service Desk to be considered. Anyone in the organization, who receives a request from a customer for preapproved services, should forward that request with as much detail as available to the IT Help Desk Attendant/s.
- Support for or enhancement of existing services requires a Service Request case to be opened.
- If the ITIL system already provides a service to a customer, but that customer wants to significantly expand that service beyond the existing cost support model in place, the request should be treated as a Service Catalogue Request and managed accordingly.
- No work is to be performed on an Enhancement Change Request until estimates have been created and the request has been prioritized by the appropriate Review Team.

Summary

- Active Monitoring of Components and Services: Pro-active actions to define the behaviour of the system or service
- Passive Monitoring of Components and Services: Passive acknowledgment of the behaviour of the system or service
- The Classification and Filtering of an Alert aims at providing a control factor for the particular Alert, which will be used for need-based decision making with respect to Alert handling
- The shortlisting of the alerts post minute validation speeds up the process of fixing issues
- Always approach a person maintaining company protocol. For example, if an engineer needs some assistance from person of higher authority, he/ she must follow the appropriate hierarchy to approach. An employee should first ask for guidance to the immediate boss or the Team Lead. If the issue is not resolved, then he/ she should seek assistance from the manager or someone immediate in the hierarchy
- It is unprofessional to ask for assistance directly to someone at the top of the hierarchy without addressing the same to the immediate boss.

Notes

Exercise

Write down the significance of the following components of recording alerts

1. Alert Component
2. Type of Alert / Type of Failure
3. Alert Description
4. Status
5. Services

Activity

Activity 1

- This activity is in the form of "Working with Alerts"
- The Trainer will take Trainees to the Lab and will show them how to access, validate and monitor alerts
- The Trainees will take down notes of the steps
- Post that, the Trainer will create mock alerts for every Trainee
- The Trainees will work on the alerts, filling in necessary fields and processing the same
- The Trainer will create a few fake alerts to check if the Trainees are able to distinguish the genuine alerts from the fake ones
- The best performers will be appreciated by the class.

Notes

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8. Software Requirement for Query Management

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Unit 8.1 - Use of CRM Software Tool

SSC/N7201

Key Learning Outcomes

At the end of this module, you will be able to:

1. Identify the type of technicalities required for query management through e-mail/ chat (inbound or outbound)

Unit 8.1: Use of CRM Software Tool

Unit Objectives

At the end of this unit, you will be able to:

1. Distinguish features of the CRM Software tool to capture query management through e-mail/ chat (inbound or outbound)

8.1.1 How to Read Data Using CRM System and Analyze Information

If you are accepting order, then you have the benefit of the script being available to you in front of your computer screen. That is thanks to the CRM software.

- The Customer Relationship Management or CRM software on the computer system gives you the script
- All that you must do is to read out the questions from the computer screen over the phone and type in the customer's responses into the CRM
- The details of the order are, thus, logged into the system. This requires a lot of concentration because you must read, speak, listen and type simultaneously while taking the order from the customers

Demonstrate the use of CRM software tool for maintaining database

CRM system helps an organization identify, segregate and target potential clients and generate leads. A key marketing feature is measuring and tracking the effectiveness of social media campaigns, including telephone,email, direct mail, search, and social media. The CRM system tracks and monitors which individuals view, respond,click, and participate in any posts or call to action. It also helps generating reports on overall campaign metrics like views, clicks, responses, leads generated, deals closed, collection and revenue. Most of the CRM systems are capable of tracking, recording, and maintaining customer interactions which in turn nurtures relationships from first contact to the closure, bestowing a 360-degree view of the customer relationship.

However, it is crucial for an Associate Customer Care Executive to be able to read and interpret the data in CRM systems. The stpes to enhance the skill are discussed below:

Step 1: Investigating the Ins and Outs of Your CRM Data

The first step to effective mining of the CRM for information, interactions and statistics is to scrutinize the CRM system. In addition to that, it is useful to search for details in onsite or online backup data storage where CRM data might also be archived.

The immediate goal is to form an understanding of the following:

- Types of available data
- Their sources (manually entered, imported, or machine-generated)
- Approved or widely used formats
- How to extract the data out of the current systems

It is imperative to remember that in this step, one is not yet analyzing the data in the conventional sense. Instead, it is the step to decide exactly when, where and how these data can be used.

Step 2: Grouping the Data Together

Prior to meaningful utilization of the collected data, it is important to get the available data together in an easily accessible place. For example, as a a set of interconnected tables, a whole relational database or a series of spreadsheets that permits you to run reports and queries. There are several useful practices around these steps.

Structuring data according to the unit of analysis is also a vital part of this step. It can be individual contacts, individual customer account, or a segment of customers. Having defined that, it becomes easy to define indices to link the data tables in the CRM system, so that they are woven around the unit of analysis.

Step 3: Mapping Out Data Analyses

Before diving deep in the CRM system interpretation, one needs to develop the game plan. In fact, that's the true secret of high-impact data analysis work — mapping out the results before commencing the work.

By this point, the available data has been been tied around the unit of analysis and the analysis will begin from this step. Firstly, an agent should work on mapping out the analytical steps to be performed. Always focus on the anlytical deductions that will help achieving the objectives set by the organization. Therefore, begin with defining the kind of conclusions that will help accomplishing the same, and work backwards from the expected results to the analyses that will provide those results (or prove otherwise).

It is beneficial to consider the following:

- The quantity to be evaluated
- What are the objectives to be juxtaposed it against

Evaluate how CRM software handles issues related to Contact management, Lead management, Email tracking, social media management, Query Resolution, etc.

Insight for	Unit of Analysis	Required Data	Expected Output
Marketing Strategy	Leads/Contacts	• Leads/contacts demographic data • Activity data • Lead/contact conversion data	• Prevalent characteristics of leads/ contacts • Conversion rates • Effectiveness of sales & marketing activities
	Marketing Campaigns	• Leads/ contacts associated with campaigns • Conversion & activities data • Campaign costs	• Performance of campaigns • Conversion rates • Cost per opportunty • Cost per lead • Avg. Time taken per conversion

Insight for	Unit of Analysis	Required Data	Expected Output
Sales Operations	Accounts and Opportunities	• Opportunity data • Opportunity history data • Account demographic data	• Segmentation of opportunities and accounts by demographic and firmographic factors • Conversion rates • Sales cycle stages and length
	Opportunities and Contacts	• Opportunity history data • Associated contacts and associated activities history	• Buyer roles and buyer personas
	Opportunities	• Opportunity history • Associated opportunity owner	• Sales rep performance analysis • Opportunity coverage analysis
Customer Onboarding and Success	Accounts	• Account demographic information • Billing information • Associated contacts and history	• Current customer segmentation • Use case analysis • Buyer and user personas
	Support Cases	• Activities data	• Success metrics • Customer support

Step 4: Executing the Analyses and Interpreting the Results

Once the plan is chalked out in details and prepared properly, the agent is ready to dive in and begin analyzing the data with available toolsets and data scripts. At this point it is recommendable to set up automation steps and templates, to avoid starting analysis from scratch.

Again, for each of the analyses, think of the ultimate answers, and optimize calculation steps toget exactly those answers. The less data is touched, the fewer the steps one needs to carry out, in turn the less error prone the results are.

Summary

- If you are accepting order, then you have the benefit of the script being available to you in front of your computer screen. That is thanks to the CRM software.
  - The Customer Relationship Management or CRM software on the computer system gives you the script
  - All that you must do is to read out the questions from the computer screen over the phone and type in the customer's responses into the CRM
  - The details of the order are, thus, logged into the system. This requires a lot of concentration because you must read, speak, listen and type simultaneously while taking the order from the customers
- CRM system helps an organization identify, segregate and target potential clients and generate leads
- The first step to effective mining of the CRM for information, interactions and statistics is to scrutinize the CRM system
- Structuring data according to the unit of analysis is also a vital part of this step. It can be individual contacts, individual customer account, or a segment of customers
- Always focus on the anlytical deductions that will help achieving the objectives set by the organization. Therefore, begin with defining the kind of conclusions that will help accomplishing the same, and work backwards from the expected results to the analyses that will provide those results (or prove otherwise).

Notes

Exercise

State True or False against the following statements

1. The Customer Relationship Management or CRM software on the computer system does not give you the script.
2. CRM is an integrations software with multiple facilities.
3. You must group the data and structure it manually before feeding it to the CRM tool.
4. The first step to effective mining of the CRM for information, interactions and statistics is to scrutinize the CRM system
5. CRM allows you to raise service requests and tickets.

Activity

Activity 1

- This activity is in the form of "Lab Session"
- The trainer will take the trinees to the lab which must comprise a standard CRM system
- The trainer will show the trainees how to work with CRM system, specifically, searching customer's details, updating customer's details, reading interactions and estimating cutomer's needs
- The trainees will carry their notebook and pen so that they can note down vital points
- If the trainees have any query, they will raise their hand and ask the question to the trainer
- The trainer will answer the questions one by one.

Activity 2

- This activity is in the form of "Hands-on"
- The trainer will divide the class into several groups depending on the head count
- The groups will be assigned with the following tasks:
- Search a customer details in the CRM system
- Update the CRM system maintaining the SOP
- Read and interpret previous interactions to understand customer's needs
- The trainer will allot CRM systems with access to the groups
- Each group will work on the given tasks within a timeframe alloted by the trainer before the session begins
- The trainer will keep an eye on the performance of each trainee
- The best performers will be appreciated by the class.

Notes

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National
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Transforming the skill landscape

9. Maintain an Inclusive, Environmentally Sustainable Workplace

IT - ITeS SSC
nasscom

Unit 9.1 - Sustainable Practices

Unit 9.2 - Respect Diversity and Strengthen Practices to Promote Equality

SSC/N9014

Key Learning Outcomes

By the end of this module, paricipants will be able to:

1. Illustrate sustainable practices at workplace for energy efficiency and waste management.
2. Apply different approaches to maintain gender equality and increase inclusiveness for PwD.

UNIT 9.1: Sustainable Pracices

Unit Objectives

By the end of this unit, participants will be able to:

1. Demonstrate how to optimize usage of electricity/energy, materials, and water in various tasks.
2. Explain the process of implementation of energy efficient systems in a phased manner.
3. Identify and segregate recyclable, non-recyclable and hazardous waste generated for disposal or efficient waste management.

9.1.1 Opimize Usage of Electricity/Energy, Materials, and Water

Greenery within and around the office premises and other corporate environments helps not only to enhance the décor of the workplace, but also has a positive impact on the productivity of the employees. Greenery helps people to concentrate on work, creates positive vibes among the workers and the visitors.

Apart from the introduction of greenery, conservation of energy and optimization of usage are equally important. There are certain essential tools and equipment that are used in every workplace, which require electricity. For example, air conditioner, light, fan, computer, coffee vending machine are such electrical gadgets or appliances which are extensively used in the offices. Similarly, steady water supply in the washroom is another important requirement. Optimized usage of all these essential energy or commodities is absolutely significant to conserve energy and create an eco-friendly work environment.

What does greenery do?

- Plants in workplaces purify the air; they reduce the concentration of CO_2 (Carbon dioxide gas) and other volatile organic compounds, keeping the air fresh and healthy.
- External vegetation moderates heat in and around office block in the summertime, pulling down heat stress and decreasing the necessity for air-conditioning.
- Green roofs and facades proliferate insulation or the absorption capacity of heat, plummeting heating and cooling expenses.
- Plants in and around office buildings release water vapour which moistens the air, dipping headaches
- 'Green views' also boost focus, and aid quicker recovery from stress.
- Green environments encourage people to undertake activities such as a lunchtime walk, keeping staff alert and healthy. Long periods of sitting adversely affect health.

Plan the implementaion of energy efficient systems

Here are some simple energy management ideas one can implement in the work station.

- Do not use artificial lighting in offices when natural light is sufficient
- Open draperies and raise shades whenever adequate light from windows is available
- Use energy-saving fluorescent lights and lamps
- Switch off lights and appliances in unoccupied office spaces or unused rooms such as conference room.
- Switch on the lights and ACs/ fans during the conference
- Turn off the bathroom's fan and lights whenever they are not occupied
- Install the light sensors to remind and educate office users about wasted light
- Use rechargeable batteries for calculators and other office devices
- Turn off computers that are not used, and utilize computers' energy/power management tools (i.e. sleep mode, hibernate mode, screen saver)
- Reduce the use of lighting during night cleaning
- Keep office doors and windows closed if heating and air conditioning is on
- Switch off HVAC systems in offices when they are not in use
- Ensure thermostats are correctly adjusted
- Purchase and use high-efficiency office equipment and devices
- Set up a self-adult system for the office energy consumption

Iniiaives towards efficient use of natural resources and energy, reducion and prevenion of polluion

These are some measurements that help optimize the usage of energy in the workplace. However, another important aspect of optimizing the usage of energy and other materials is proper maintenance. Organizations should prepare a checklist to measure and maintain energy and material conservation. Following is a sample checklist for the energy and material conservation module at workplaces.

Category	Checklist Items
Energy management	Establishment of energy management organization, and employee education
	Energy conservation targets and investment budget setting
	Grasp status of implementation of energy conservation
	Measurements and recording of monthly usage (electricity, gas, oil, and water)
	Preparaion of staisics, including graphs showing differences from previous month or year
	Grasp of energy intensity (MJ/m2/year)
	Establishment of management standards
Heat source and heat-conveying equipment	Temperature control for chilled water, cooling water, and hot water
	Adjustment of the flow rate and pressure of pumps and fans
	Steam leakage and insulation management
	Management of air ratio and exhaust gas of combustion equipment
	Control of steam pressure and blow-down
	Cooling water quality control (electrical conductivity)
	Control of opening of valves and dampers (e.g. automatic valves)
Air-condiioning and venilaion equipment	Proper temperature setting
	Turning off air-conditioning for rooms not in use or unoccupied
	Adjustment of appropriate outside air intake volume
	Review of operating hours
	Effective operation of total heat exchanger (e.g. Rosunai)
	Local cooling and local exhaust
	Indoor air quality control (e.g. CO2)
	Installation of (manual or automatic) inverter device to ventilation fans
	Suspending either of the operation of a 4-pipe air conditioning system, if used
	Control of ventilation in car parking space (CO concentration control)

Water supply/drainage and sanitaion equipment	Control of supplied water flow and pressure
	Water saving measures (e.g. water-saving top and automatic flashing)
	Change temperature and pressure setting on the heat source equipment depending on the season
	Operation with intervals in hot water supply circulation pump
	Utilization of rain water and well water
	Management of kitchen equipment (e.g. cooking and washing machines)
Management of electric power receiving and transforming faciliies	Optimization of demand
	Usage control
	Voltage adjustments
	Power factor management
Operaion management of lighing equipment	Optimum illumination control
	Switching off lights when they are not necessary (use of daylight)
	Cleaning of lighting fixtures and change to more energy-saving fixtures
	Replace incandescent lamps to fluorescent lamps
	Adoption of energy-saving FFE (furniture, fixture, and equipment)
Operaion & management of elevaing machines	Operation
	Adoption of inverter control
	Adoption of human motion sensors to escalator
Buildings	Blocking of solar radiation on the windows (e.g. shading curtains and light-shielding films)
	Blocking of solar radiation on the roof (heat reflection coating)
Others	Maintain the place around the condensing units for air-conditioning and chillers
	Utilization of heat from hot spring
	Installation of boilers using waste materials as fuel
	Utilization of solar heat
	Wind, solar, and small hydro power generation
	Use late-night electricity
	Co-generation

Table 9.1.1 Energy and Material Conservaion Checklist

Various energy opions including renewable and non-renewable

Renewable Energy is an endless energy source that does not deplete upon use and produces no or minimum waste. Such energy sources are renewed spontaneously on a human timescale. The International Energy Agency (IEA), an independent authority on Environment and Sustainable Development based in Paris, explains: " "Renewable Energy is produced from perpetually replenishing natural processes. It derives in its different forms straight from the Sun or from heat generated deep inside the earth. Electricity and heat generated from solar, wind, ocean, hydropower, biomass, geothermal resources, biofuels, and hydrogen obtained from renewable resources are included in the definition."

- **Wind Power:** Wind power is a source of solar power. Wind energy (or wind power) refers to the utilisation of wind to create electricity. Wind turbines transform wind's kinetic energy into mechanical energy. A generator converts mechanical energy to electrical energy.
- **Geothermal Energy:** Although the Sun warms the Earth's surface, it is not responsible for the planet's interior temperature.
- **Solar Energy:** Solar energy is the conversion of solar energy into thermal or electrical energy. Solar energy is the most abundant and cleanest renewable energy source currently accessible.
- Bioenergy is renewable energy derived from biological and natural sources. Even landfills and garbage zones are bioenergy resources due to technological advancements. It can be utilised as a renewable energy source, supplying heat, gas, and fuel.
- **Hydropower Energy:** Hydropower, often known as hydro-energy, is a type of renewable energy that utilises water held in dams and flowing in rivers to generate electricity in hydropower plants. The blades rotate a generator that turns the mechanical energy of the spinning turbine into electrical energy.

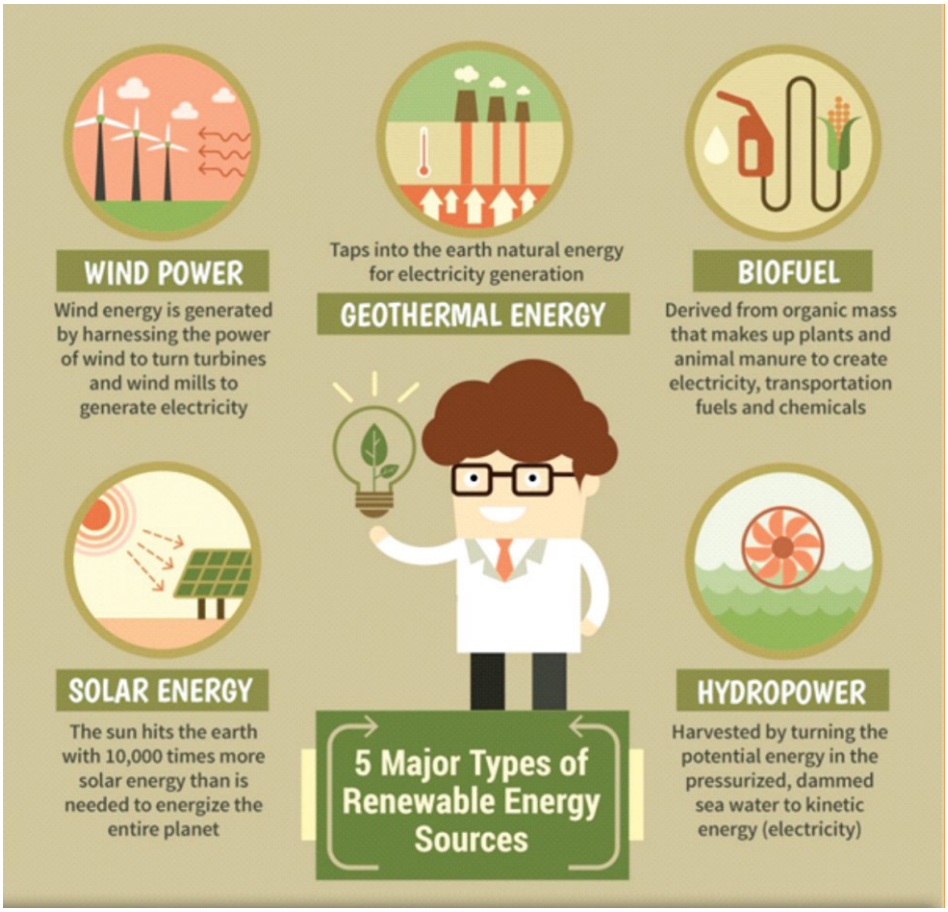


Fig 9.1.1 Renewable Energy Sources

Renewables generate no greenhouse emissions during energy production, making them the cleanest and most viable way to combat environmental damage. Unlike conventional energy sources such as coal, gas, oil, and nuclear, whose supplies are finite, clean energies are derived from and adapt to natural cycles. This makes them a crucial component of a sustainable energy system that allows for the development of the present without endangering future generations.

Electricity First Aid Emergency Procedures

The first aid kit should have the following essential items for giving first assistance:

- Cuts, scratches, punctures, grazes and splinters
- Muscular sprains and strains
- Minor burns
- Amputations and/or major bleeding wounds
- Broken bones
- Eye injuries
- Shock

To ensure that workers have a thorough understanding of first aid in the workplace, one must establish and implement first aid protocols. The procedure must include:

- The type of first aid kits and their locations.
- The placement of first aid amenities include first aid rooms
- Who is accountable for the first aid supplies and facilities, and how often should they be inspected and maintained?
- How to create and maintain adequate communication systems (including equipment and procedures) to ensure timely communication with first aiders in the event of an emergency.
- The essential communication equipment and methods when first aid is required (especially for remote and isolated workers). These procedures should include information on where the communication equipment is located, who is accountable for it, and how it should be maintained.
- The work locations and shifts assigned to each first aid responder. These procedures should include the names and contact information for every first responder.
- Arrangements to guarantee that first aiders receive adequate instruction.
- Arrangements to ensure that employees obtain proper first aid information, instruction, and training
- Requesting information about any first aid needs that may require specific treatment in a medical emergency, such as severe allergies, when an employee begins work. Information about a worker's health must be kept confidential and shared with first aid personnel only with the worker's permission.
- Instructions on how to report work-related injuries and illnesses.
- Methods to prevent exposure to blood and bodily fluids.
- What to do if a worker or other individual is too injured or ill to remain at work, such as if they need assistance with transportation to a medical facility, home, or a place where they may rest and recover.
- Access to debriefing or counselling services to assist first responders and employees following a significant workplace incident.

Here the steps to free a person from electrocuion

Switch off the main power.	
Don't touch the person who is electrocuted.	
Try to remove the person from the electrical source with the help of non-conducting objects like stick, cardboard, bamboo, etc.	
Lay the person in this position.	

Table 9.1.2 Steps to save a person from electrocuion

9.1.2 Segregate Recyclable, Non-Recyclable and Hazardous Waste

Hazard is defined as a factor, which may cause harm to people and properties alike, like electricity, inflammable products, explosive material, corrosive chemical, using heavy ladders at workplace etc. Simply put, a Hazard is simply a condition or a set of circumstances that present a potential for harm. Risk is defined as the likeliness or the chance that a hazard can actually cause harm to somebody. For example, smokers of cigarettes run the risk of developing Cancer. The potential or imminent danger that Risks and Hazards expose the concerned premises to, is known as Threat. For example, a person, who has the potential of blowing up a building, is a threat to that building and its inhabitants.

The steps involved in Risk Management are:

Fig 9.1.2 Risk Management Matrix

The most common waste materials procured in a workplace can be categorized in the following:

Liquid Waste

- Sludge, dirty water, organic liquids, waste water after washing.

Solid Waste

- Industrial slag, plastics waste, wood waste, paper waste, metals, and glass.

Organic Waste

- Biodegradable food waste, animal waste, vegetable waste, garden waste, rotten meat of animals can be deposited at Landfills or converted into Manure and Biogas.

Recyclable Waste

- Paper, metals, wood, organic waste etc. can be recycled.
- Must be placed in appropriate Recycling Bin and treated according to the nature of the waste.
- For example, organic waste can be converted into manure and Biogas.

Hazardous Waste

- Such waste may be flammable, corrosive, radioactive, toxic etc.
- These can potentially harm the environment and must be placed in clearly and legibly labelled bins for appropriate treatment and disposal.

Fig 9.1.3 Waste Segregation and Disposal Bins

Hazards and potential risks / threats can be identified and then reported to supervisors or other authorized persons in the following ways:

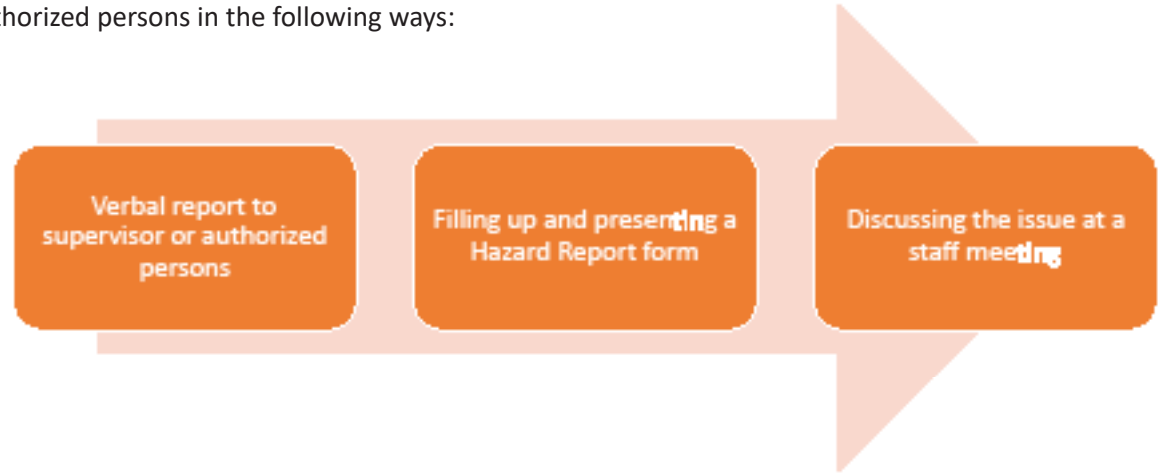


Fig 9.1.4 Flowchart of Reporting Potential Hazrd

Identification of hazard implies the job is half done. In order to take adequate precautionary measures against hazards, one needs to identify the hazards commonly found in the workplace. The common methods of hazard identification are:

Job Hazard Analysis (JHA)

- This is a popular technique to identify the perils associated with specific tasks in a job role, in order to lessen the risk of injuries to employees.
- The steps involved in successfully conducting JHA are:

A. Divide the enire job role into small tasks or steps

Let us understand the concept with the help of an example, where JHA is being conducted on corporate work such as Technical Support Engineer.

Steps	Hazards Associated	Recommendaions
1. Handling tools and equipment of the trade		
2. Working with common electrical appliances of the workspace		
3. Stress factor of the job role		

Table 9.1.3 JHA Checklist for Hazard Idenificaion

A. Spot out the hazards associated with each step by asking questions like:

- What can go wrong with this task?
- What would be the consequences if the task went wrong?
- How could the task go wrong?
- What are the other contributing factors?
- What are the chances that this hazard will take place?

B. Review and discuss the scope of the hazards with the employees, who would actually do the tasks on hand

C. Find out strategies and ways to mitigate or avoid the hazards

D. Review and revise the JHA periodically

Hazard and Operability (HAZOP) Study

- This technique involves a structured and systematic examination of an existing method / procedure, thus, in turn, identifying and assessing the associated hazards.
- These hazards can be easily identified in the form of Deviations in the process parameters (physical conditions and elements like flow, pressure, temperature, humidity, etc.
- The severity of Deviation can be illustrated with the help of specific and predetermined Guide Words.
- A Deviation is a manner in which the process conditions stray away from the expected values.

The steps involved in conducing HAZOP are:

- Segregating the entire system or process into sections or components
- Select a study node or point
- Define the expected outcome or consequence

- Choose a process parameter, based on the expected consequence
- Implement a suitable Guide Word
- Determine the Cause behind the deviation
- Start with the cause that may lead to the worst possible consequence
- Assess the deviations thus detected
- Devise and prescribe action
- Record and document information
- Repeat the process from B

Guide Word + Process Condition / Parameter = Deviation.

For example, No + Signal = No Signal

Common examples of Guide Words and their meanings are:

Guide Word	Meaning	Example
No (Not, None)	None of the desired consequence is achieved	No flow of gas through the gas cutting nozzle due to accumulated dirt
More (Higher than, More of)	Quantitative increase in a certain process parameter	More heat generated and higher temperature achieved than expected, during sawing operations
Less (Lesser than, Less of)	Quantitative reduction in a certain process parameter	Lower pressure than expected
As well as (In addition to)	All the design intentions are achieved and an additional activity takes place	All valves closed at the same time
Reverse	The logical opposite of the design intention takes place	The Power Drill continues drilling even after shutting down the power supply
Other Than	An unexpected activity takes place	Presence of liquid fuel in Gas Cylinder

Table 9.1.4 Guide Words and their Interpretaion

The 3 Rs of Waste Opimizaion

- **Resource Opimizaion:** Raw materials must be used to the fullest, so that minimal waste is procured while converting the raw materials into finished products.
- **Recycling of Scrap Material:** Scraps, when created, must immediately be incorporated in the manufacturing process, so that they get reused completely as raw material.
- **Enhanced Quality Control:** This can be implemented by minimizing the number of rejects per batch. This is easily achievable with a higher frequency of careful inspection, accompanied with constant monitoring.
- **Exchange of Waste:** ome wastes cannot be completely eliminated from the manufacturing process. Such waste can be effectively managed via Waste Exchange techniques, where the waste procured in a certain process becomes the raw material of another, and vice versa.

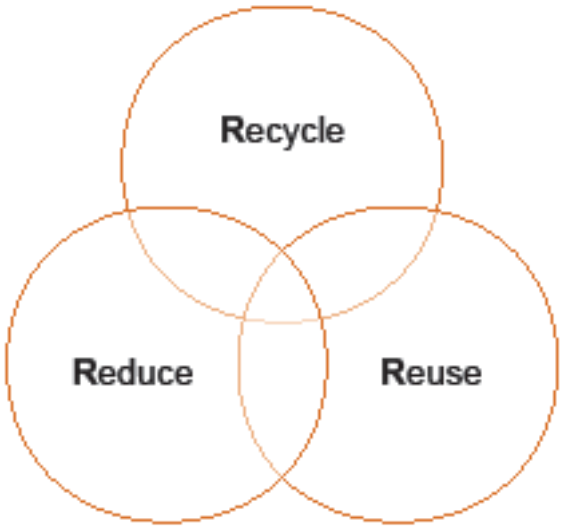


Fig 9.1.5 Rs of Waste Optimization

Landfill

- Waste, that cannot be recycled, is deposited and a layer of soil is added on top of it

Incineraion

- Involves controlled combustion of waste
- 90% volume of waste gets reduced and converted into incombustible, light-weight materials like ash, gases and heat
- Gases are released into the environment while the heat is utilized in power generation

Biogas Generaion

- Organic waste are biodegradable and can be converted into Biogas in Biogas Plants, with the help of certain fungi and bacteria
- The residue, after generation of Biogas, is used as Manure

Manure Generaion and Composing

- Organic waste are often left buried under soil beds
- They decompose into rich manure, full of nutrients and minerals

Vermicomposing

- Involves the degradation of organic waste into manure, with the help of worms
- The worms feed on the organic waste and convert them into manure

Notes

Scan the QR Code to watch the related videos

https://www.youtube.com/watch?v=wQ7zJYBuY74

Demonstrate how to optimize usage of electricity, energy, materials, and water in various tasks

UNIT 9.2: Respect Diversity and Strengthen Pracices to Promote Equality

Unit Objectives

By the end of this unit, participants will be able to:

1. Explain the diversity policy of the organization.
2. Comply to PWD inclusive policies for an adaptable and equitable work environment.

9.2.1 Concept of Gender, Gender Equality and Gender Discriminaion

Policies and procedures about gender inclusivity, equality and sustainability while working with colleagues

The Constitution of India applies uniformly to equality of opportunity for all citizens (including every legal citizen of India, whether they are the disabled) in matters relating to employment or healthy or disabled. Under the Constitution the appointment to any office under the State. As a matter of fact, the employees of an organization constitute of major diversity. They come from different region, with different cultural and religious beliefs. However, the employer should provide equal opportunity to each and every employee, irrespective of gender, culture, religion. Particularly, the Indian Government has taken several measurements to ensure gender equality in the workplace. To establish women's right in the workplace, the government has passed bills. The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013 is an Indian law that aims to protect women against sexual harassment in the workplace. On September 3, 2012, it was approved by the Lok Sabha (the lower chamber of the Indian Parliament). The Rajya Sabha (the upper house of the Indian Parliament) approved it on 26 February 2013.

The major features of the policy include:

- The Act defines sexual harassment in the workplace and establishes a complaint resolution process. It also gives protections against fraudulent or misleading charges.
- The Act also includes 'quid pro quo harassment' and 'hostile work environment' as kinds of sexual harassment when they occur in conjunction with an act or behaviour of sexual harassment.
- The Act's expansive definition of "aggrieved woman" encompasses all women, regardless of their age or job level, whether in the organised or unorganised sectors, public or private, and also includes clients, consumers, and domestic workers.

- Section 2 defines an employer as any person responsible for the management, supervision, and control of the workplace, including those who establish and administer the organization's policies (g).
- While the "workplace" in the Vishaka Guidelines is limited to the traditional office setting where there is a clear employer-employee relationship, the Act includes organisations, departments, offices, branch units, etc. in the public and private sectors, organised and unorganised, hospitals, nursing homes, educational institutions, sports institutes, stadiums, sports complexes, and any place visited by the employee in the course of employment. This regulation will apply to non-traditional workplaces that entail telecommuting as well.
- The Committee is required to conclude its investigation within ninety days. The report will be given to the employer or the District Officer, depending on the circumstances, and they are required to take action within sixty days.
- Employers must establish an Internal Complaints Committee in each office or branch with 10 or more employees. The District Officer must form a Local Complaints Committee in each district, and at the block level if necessary.
- The Complaints Committees have the same authority to acquire evidence as civil courts.
- The Complaints Committees are supposed to provide conciliation prior to commencing an investigation if the complainant so requests.
- The investigation procedure under the Act must be kept confidential, and anyone who violates confidentiality is subject to a Rs 5,000 fine.
- Among other requirements, the Act compels employers to conduct education and sensitization initiatives and adopt policies against sexual harassment. The objective of Awareness Building can be attained via Banners and Posters displayed in the building, eLearning courses for employees, managers, and internal committee members, classroom training sessions, and email, eLearning, or classroom training for communicating the organization's sexual harassment policy. It is advised that eLearning or Classroom Training be provided in the employee's primary language of communication.
- Employers are now subject to penalties. Noncompliance with the Act's requirements is penalised by a fine of up to Rs. 50,000/-. Repeated infractions may result in harsher penalties and the revocation of a company licence or deregistration.
- The government can order an official to check the workplace and sexual harassment-related records of any organisation.
- To investigate any complaints made under the Act, which also applies to students in schools and colleges and hospital patients, employers and local governments would be compelled to set up grievance panels. Employers who refuse to comply can be fined up to 50,000 Indian Rupees.

9.2.2 Organizaion's Redressal Mechanisms

Inclusive tools and practices of communication to acknowledge/validate, share and promote the cause of gender parity at workplace

Women's safety and its related topics are addressed and debated globally. The number of sexual harassment reports continues to rise at an alarming rate each year. Therefore, in order to protect the safety of its female employees, a particular business must provide for their needs.

So, a company must inform women about the various facilities that they are going to provide them. Some of the basic facilities include the following.

1. **Transportaion faciliies:**

   Transportation plays a huge role in ensuring women safety. Ensuring that the women will be accompanied by trusted drivers will help enhance women's safety. Be transparent about the security that you may provide during night trips. Every woman must be aware of the various safeguards that the company may provide.

2. **Reporing Abuse:**

   The management must be prompt in its decision making whenever there is a mishap. The ways of reporting abuse must be made clear to the woman to ensure speedy remedy.

3. **Maternity-related grievance:**

   Employers are required to notify women entering the workforce in writing and electronically about the maternity benefits provided under the Maternity Benefit Act.

   The law permits women to work from home during their maternity leave if the nature of their work permits it.

4. **CCTV Cameras**

   Ensure that every station is equipped with CCTV cameras which are nowadays the most vital component for investigating sexual harassment cases.

5. **Security Guards**

   Ensure that adequate amount of security guards are stationed at strategic places so that any threat to women's safety can be nullified. Ensure that the women are informed about the various places where the security guards are present.

6. **Women's Helpline:**

   Share a leaflet containing the Women's helpline number/s and other important contacts.

7. **Chain locks/latches**

   Provide women with chain locks and latches so that their luggage can be properly and securely kept and to avoid any form of theft.

8. **Smoke Detector:**

   Inform the women about the location of smoke detectors inside the premises.

   Providing these basic amenities will ensure that the women enjoy comfortable accommodation without any fear.

All forms of gender discriminaion, violence and inequality

The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013 establishes a system for investigating and redressing accusations of sexual harassment against women in the workplace. It also gives protections against fraudulent or misleading charges.

The principal clauses of the Act impose the following obligations on employers in order to ensure a safe workplace for women:

- Display penal consequences of sexual harassment
- Organize workshops and sensitization programs
- Formulate an internal policy, charter, resolution, declaration
- Form an 'Internal Complaints Committee' (ICC) where the number of employees is more than ten
- Provide necessary facilities to the committees
- Secure attendance of witnesses/respondent
- Monitor timely submission of committee reports
- Assist the woman in pursuing a criminal case if she so chooses
- Maintain confidentiality of the inquiry process. The Act lays down a penalty of Rs 5,000 (US$68) on the person who has breached confidentiality
- With sexual harassment being a crime, employers are obligated to report offenses

To tackle the problem of sexual harassment at workplace, the Ministry of Corporate Affairs, through a notification dated July 31, 2018, amended the Companies (Accounts) Rules 2014. The notification makes it mandatory for private companies to disclose their compliance with the Act in their directors' annual report.

Furthermore, the Act places responsibility on the appropriate state government to notify the district officer for setting up a Local Complaints Committee (LCC).

HR managers are on the front lines when it comes to changing cultural attitudes about sexual harassment.

Below are some best pracices that HRs can develop to ensure safe work environment for women:

- Update the official employee handbook that outlines the procedure that will take place when sexual harassment is being experienced at work. Include an unequivocal statement that sexual harassment will not be tolerated.
- Give out a clear, simple, and easy-to-understand description of what constitutes harassing behaviour or conduct, including examples of the types of behaviours that are considered harassing at the workplace.

- Implement training for all to include more focus on gender identity and sexual orientation, and emphasize gender neutrality regarding who may experience sexual harassment.
- Sensitize male employees and reinforce confidence among women to come forward and file complaints.
- Stay updated on employment law changes where their employees live or work. HRs must also utilize professional associations, legal counsel and online resources to ensure that the company is compliant and aware of existing and upcoming legislative changes related to employee rights.

Use Internal & External Communicaion to Colleagues

It is often said that one's behaviour is the mirror to one's character. Indeed, your behaviour speaks a lot about the kind of person you are. Your educational degrees hold little importance if you are not a well- mannered person. You need to conduct well in almost every situation whether you appear for a job interview or pursue post-graduate degree, at your workplace or while dealing with your clients, in your school/college or while attending parties. Even at your home in front of your relatives, it is your good behaviour which counts the most. But behavioural etiquette is something which cannot be forced on anyone, it has to be cultivated and nurtured within oneself.

Showing compliant behavioural eiquette towards women is very important.

What are the various instances where one can show such etiquette? Let's take a look:

- **Before entering the room:** You must always knock and ask for permission before entering. This is perhaps the most basic etiquette. You must ensure that the privacy of the woman is unharmed. So, knock and take verbal permission before entering a room.
- **Avoiding touch contact:** You must always ensure that you do not intrude on the customer's personal space. This is not only unprofessional but also unhygienic. So try your best to avoid touch contact. If absolutely necessary, ask for permission and then assist the customer.
- **Using Abusive languages or gestures:** This is the last thing a women/customer expects from you. Ensure that you never use any foul language in front of the customer. Ensure that you don't abuse your colleagues in front of the guests.

Women are empowered by society and the law; some essenial rights that are universally applicable to both sexes, but specifically for women, are as follows:

- Rights as a woman to dignity and respect, which entails that no man of any age is permitted to make sexual approaches, tease, or harass a woman.
- No one has the right to make women feel uncomfortable in the workplace, at home, on the streets, at school, college, or at a social gathering.

- Rights to physical and mental security: No one has the right to use physical force, to torture women physically or psychologically, or to coerce women in any way, regardless of their relationship to the perpetrator.
- Complaint privilege: Women have the right to lodge a complaint when even the slightest of their rights are abused. Take counsel and follow the correct course of action in such situations, regardless of the individual's status as a superior, relative, or neighbourhood bully.
- Security rights as a woman employee according to Visakha rules for preventing sexual harassment in the workplace.
- Physical or emotional violence against women is not a woman's inevitable fate, as is sometimes asserted. Dominant behaviour is neither a person's right nor a woman's destiny; therefore, it is perfectly acceptable to complain about it.

A security procedure is a predetermined sequence of operations that accomplishes a certain security task or function. Typically, procedures are structured as a sequence of steps to be followed as a consistent and recurring strategy or cycle to achieve a desired outcome.

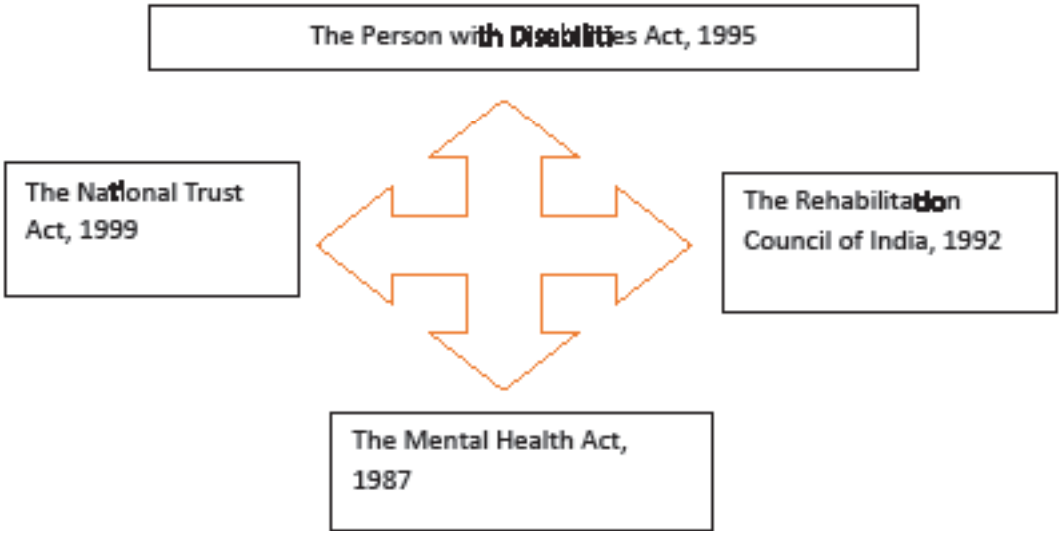
Once adopted, security procedures give a specified set of steps for performing the organization's security affairs, hence facilitating training, process auditing, and process improvement. Procedures give a starting point for adopting the consistency required to reduce variation in security procedures, hence enhancing organization-wide security control.

An employer must ensure that the employees feel safe at all times without being over threatened by the security procedures and related environment.

9.2.3 Comply to PWD Inclusive Policies

How to maintain and provide a conducive work environment that is free from any harassment; faciliies and ameniies to PWD

The Indian Government respects the equality and therefore no discrimination should be made on the ground of disability. The Constitution guarantees all people, including those with disabilities, the right to justice, freedom of thought, speech, belief, faith, and worship, equality of status and opportunity, and the development of brotherhood. No disabled person may be required to pay taxes for the promotion and maintenance of a specific religion or religious group. To enforce the same, the government has passed laws to protect disables and their right to equality. The laws pertaining to disables are as follows:



Improve through specifically designed recruitment pracices, PWD friendly infrastructure, job roles, etc.

The 2016 Act expands the term of 'disabled person' to include persons with disability, persons with benchmark disability, and persons with disability and high support requirements. This inclusive concept classifies 21 categories of disabilities as "specific disabilities."

The Act is applicable to both government and private establishments. According to the law, a private establishment is a corporation, firm, cooperative or other society, associations, trust, agency, institution, organisation, union, or other government-designated establishment.

The Act mandates that all organisations develop and publish an Equal Opportunity Policy. All types of discrimination against those with disabilities are forbidden, unless it can be demonstrated that such discrimination is proportionate and essential for accomplishing legitimate ends.

The Act provides additional benefits for people with certain disabilities, including work openings in government agencies, educational opportunities, land distribution, and poverty alleviation programmes, among others.

To provide swift justice, special courts are established in each district to hear matters involving the infringement of the rights of disabled individuals. The maximum penalties for violating the rights of disabled people is $7,750 (Rs 500,000) and the maximum term of jail is five years.

Use and advocate for appropriate verbal/nonverbal communicaion, schemes and benefits of PWD

Although the majority of Act compliances apply only to government facilities, private establishments are also subject to the Act and must adhere to the following requirements:

- Frame and publish an Equal Opportunity Policy on the organization's website or in a prominent location inside the organization's premises. The Policy shall outline the accommodations and benefits made available to disabled employees. In addition, a copy of the Policy must be filed with the State Commissioner.
- Establishments with more than 20 employees must appoint a Liaison Officer to monitor the recruitment of handicapped individuals and the provision of specific facilities for them.
- Establishments must identify job openings that would be suitable for disabled candidates. In establishments receiving government incentives, a minimum of five percent of open positions must be reserved for disabled individuals.
- The employer must ban unlawful discrimination against disabled individuals in the workplace.
- The business must provide additional facilities or special advantages to disabled employees, such as special leave and training programmes, to boost their accessibility.
- All establishments must adhere to the government-issued accessibility standards for disabled individuals. The accessibility standards apply to infrastructure and communication technology in the workplace that must be accessible to impaired individuals.
- Every covered employer is required to maintain a record of its disabled personnel.

Summary

- Greenery within and around the office premises and other corporate environments helps not only to enhance the décor of the workplace, but also has a positive impact on the productivity of the employees
- Plants in workplaces purify the air; they reduce the concentration of CO2 (Carbon dioxide gas) and other volatile organic compounds, keeping the air fresh and healthy
- External vegetation moderates heat in and around office block in the summertime, pulling down heat stress and decreasing the necessity for air-conditioning
- Green roofs and facades proliferate insulation or the absorption capacity of heat, plummeting heating and cooling expenses
- Plants in and around office buildings release water vapour which moistens the air, dipping headaches
- Hazard is defined as a factor, which may cause harm to people and properties alike, like electricity, inflammable products, explosive material, corrosive chemical, using heavy ladders at workplace etc.

- In order to take adequate precautionary measures against hazards, one needs to identify the hazards commonly found in the workplace
- The Constitution of India applies uniformly to equality of opportunity for all citizens (including every legal citizen of India, whether they are the disabled) in matters relating to employment or healthy or disabled.
- The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013 establishes a system for investigating and redressing accusations of sexual harassment against women in the workplace.
- The 2016 Act expands the term of 'disabled person' to include persons with disability, persons with benchmark disability, and persons with disability and high support requirements.

Activity

Acivity 1

Energy Conservaion - Prepare a sample checklist and monitor

- This activity is in the form of "Prepare a sample checklist and monitor energy usage"
- This activity targets to make the trainees understand the optimization of energy in the workplace
- The trainer will divide the class into three groups
- The trainer will distinguish one particular room for the case study
- Each group will be assigned with the following tasks
    - Count the number of lights, fans and ACs in the case study room
    - Note down the duration of their usage
    - Assess the proper usage and wastage
    - Prepare a checklist to evaluate how to optimize the energy usage
    - Submit a document furnishing observations
- The trainer will check the documents and declare the best group

Acivity 2

Waste management

- This activity is in the form of “Waste management”.
- The trainer will ask every trainee to prepare a sample hazard measurement checklist (as shown in Unit 7.1.2).
- The trainees should assess the waste management system of the building.
- They should prepare a document on the existing waste management system and propose systems to enhance it.
- They must be able to segregate between different types of waste and their treatment.
- On the merit of the document submitted by the trainees, the trainer will announce the best reports
- The trainees who furnished best reports will be appreciated by the class.

Exercise

A. **Match the Followings:**

Column A	Column B
The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act	1995
The Person with Disabilities Act	1992
The Mental Health Act	1999
The Rehabilitation Council of India	2013
The National Trust Act	1987

B. Choose the Correct Answer from the Responses Given:

1. Which of the following options is incorrect?
   a) Greenery absorbs heat and keep the office building cool
   b) Greenery is mandatory as per the law enforced by government
   c) Greenery enhances productivity
2. IEA stands for -
   a) Indian Energy Agency
   b) Indian Energy Authority
   c) International Energy Agency
3. Employers who fail to comply will be punished with a fine of up to -
   a) INR 50,000
   b) INR 5,00,000
   c) Yet to determined

C. Answer the Following Quesions

1. What are the basic steps of risk management?
2. Write down the key features of organization's redressal mechanism regarding women safety.
3. What are the common sources of renewable energy?
4. What could be the possible outcomes of violating PWD policies?
5. Write down the steps of saving a person from electrocution.

Notes

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10. Employability Skills

DGT/VSQ/N0102

Employability Skills is available at the following location

https://www.skillindiadigital.gov.in/content/list

Employability Skills

IT - ITeS SSC
nasscom

11. Annexure

Module No.	Unit No.	Topic Name	Page No.	URL	QR Code (s)
Module 2: Attending Customer Queries (SSC/ N7201)	Unit 2.2: Identify the nature and range of queries	Identify the nature and range of queries	16	youtu.be/nNaLLR_kI3k	
Module 3: Deal with Customer Queries (SSC/ N7201)	Unit 3.1: Query Resolution Software	Standard script for query handling, and role play	43	youtu.be/75Xsxu44jBc	
Module 9: Maintain an Inclusive, Environmentally Sustainable Workplace (SSC/N9014)	Unit 9.1: Sustainable Practices	Sustainable Practices	143	youtu.be/s1qhuM4N7P8	

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Address: Plot No. - 7, 8, 9 & 10 Sector- 126, Naida, Uttar Pradesh - 201303
New Delhi -110049
Website: www.sscnasscom.com
Email: ssc@nasscom.com
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