



**DEPARTMENT OF COMPUTER APPLICATION**

**SEMESTER III**

**Computer Assembly And Repair Lab**

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**DEPARTMENT  
OF  
COMPUTER  
APPLICATION**

**SEMESTER III**

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**LAB MANUAL**

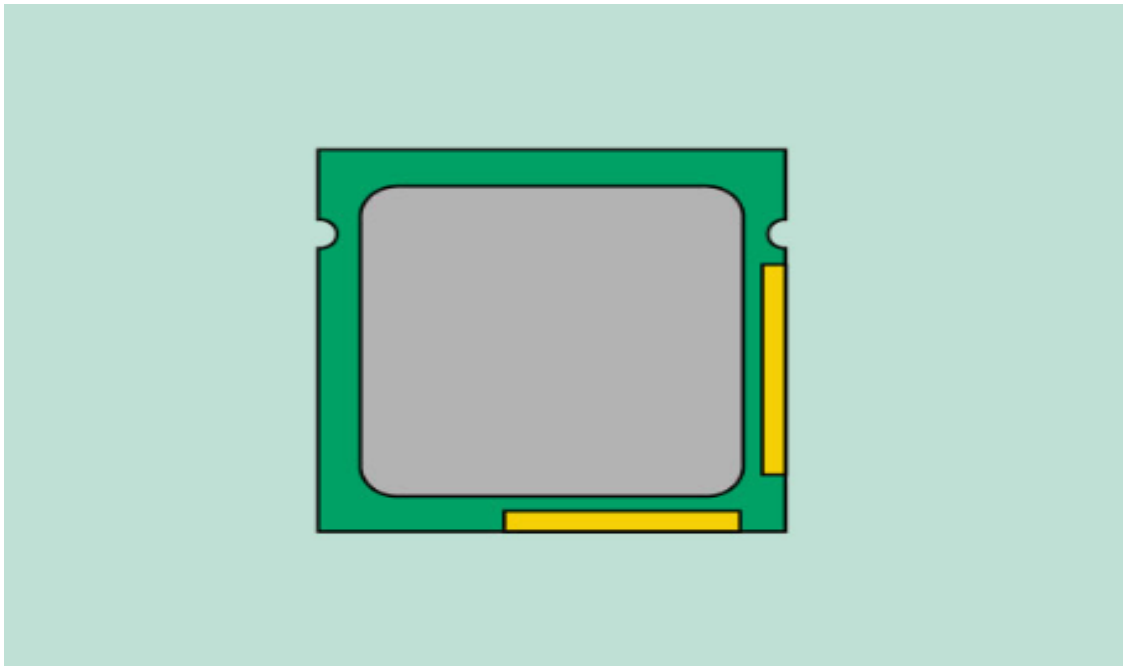
**PROCEDURE NO : 1**

**AIM**

Demonstration of Hardware peripherals: CPU, RAM, SMPS, Motherboard, NIC card, Processor, Processor cooling fan, PCI card, HDD

**DESCRIPTION**

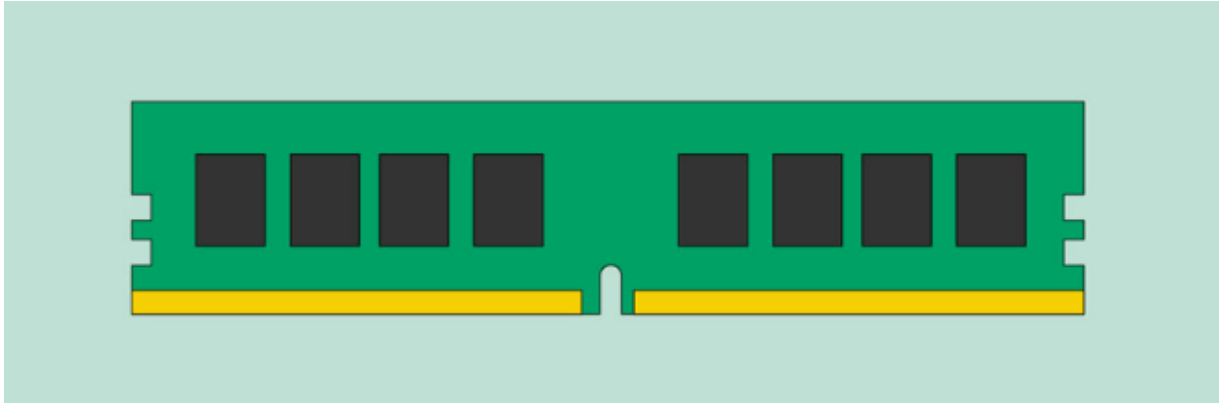
**CPU/processor**



- The central processing unit (CPU), also called a **processor**, is located inside the **computer case** on the motherboard. It is sometimes called the brain of the computer, and its job is to carry out commands. Whenever you press a key, click the mouse, or start an application, you're sending instructions to the CPU.
- The CPU is usually a **two-inch ceramic square** with a **silicon chip** located inside. The chip is usually about the size of a thumbnail. The CPU fits into the motherboard's **CPU socket**, which is covered by the **heat sink**, an object that absorbs heat from the CPU.
- A processor's **speed** is measured in **megahertz (MHz)**, or millions of instructions per second; and **gigahertz (GHz)**, or billions of instructions per second. A faster

processor can execute instructions more quickly. However, the actual speed of the computer depends on the speed of many different components—not just the processor.

#### RAM (random access memory)



- RAM is your system's **short-term memory**. Whenever your computer performs calculations, it temporarily stores the data in the RAM until it is needed.
- This **short-term memory disappears** when the computer is turned off. If you're working on a document, spreadsheet, or other type of file, you'll need to **save** it to avoid losing it. When you save a file, the data is written to the **hard drive**, which acts as **long-term storage**.
- RAM is measured in **megabytes (MB) or gigabytes (GB)**. The **more RAM** you have, the more things your computer can do at the same time. If you don't have enough RAM, you may notice that your computer is sluggish when you have several programs open. Because of this, many people add **extra RAM** to their computers to improve performance.
- **Types of RAM:**
  - SRAM(Static RAM)
  - DRAM(Dynamic RAM)

## SMPS

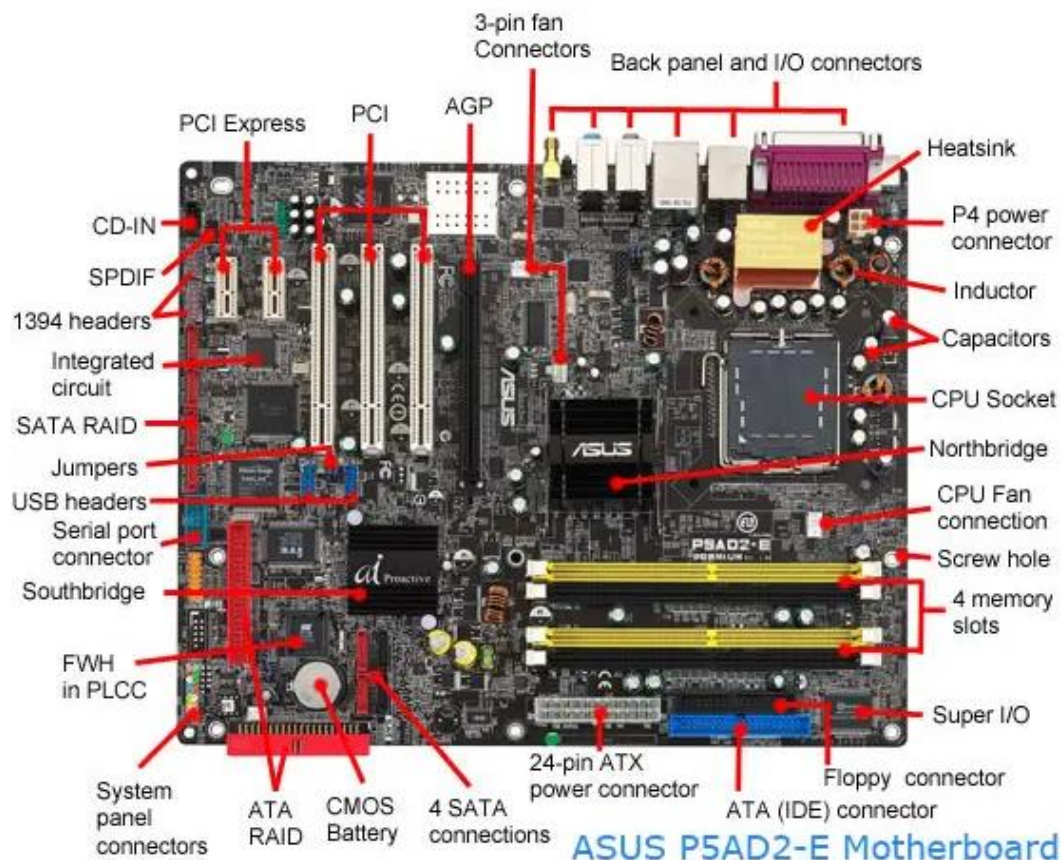
www.cselectricalandelectronics.com



SMPS - Switched Mode Power Supply

- The full form of SMPS is **Switched Mode Power Supply** also known as **Switching Mode Power Supply**.
- SMPS is an electronic power supply system that makes use of a switching regulator to transfer electrical power effectively.
- It is a PSU (power supply unit) and is usually used in computers to change the voltage to the appropriate range for the computer.
- An SMPS adjusts output voltage and current between different electrical configurations by switching the basics of typically lossless storage such as capacitors and inductors.

## Motherboard



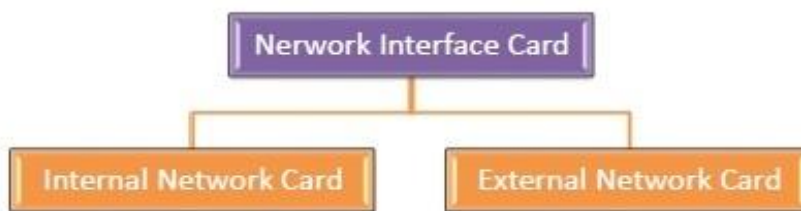
- A motherboard provides connectivity between the hardware components of a computer, like the processor (CPU), memory (RAM), Hard Drive and Video Card. There are multiple types of motherboards, designed to fit different types and sizes of computers.
- Each type of motherboard is designed to work with specific types of processors and memory, so they don't work with every processor and type of memory. However, hard drives are mostly universal and work with most motherboards, regardless of the type or brand.

#### **NIC(network interface card)**

- A network interface card (NIC) is a hardware component without which a computer cannot be connected over a network.
- It is a circuit board installed in a computer that provides a dedicated network connection to the computer.
- It is also called network interface controller, network adapter or LAN adapter.
- NIC allows both wired and wireless communications.

#### **Types of NIC Cards**

NIC cards are of two types –



#### **Internal Network Card**



### External Network card



### Processor Cooling Fans

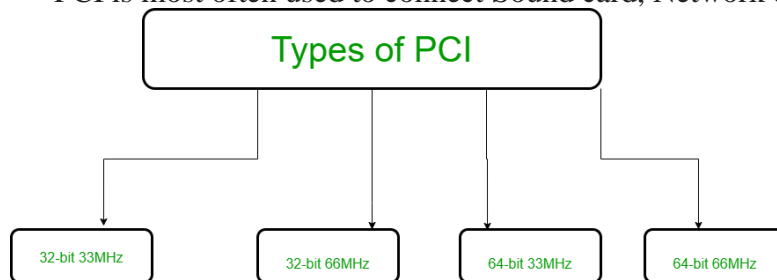


- CPU coolers are **designed to dissipate heat produced by the processor that sits at the heart of your PC.**
- The fans, radiators, and other elements in these cooling components allow for the accumulated heat energy to flow away from vital working parts without damaging the hardware.

### PCI-card (Peripheral Component Interconnect)



- Peripheral Component Interconnect is a common connection interface for attaching computer peripherals to the Mother Board.
- PCI is most often used to connect Sound card, Network card, Video card.



### **HDD(Hard Disk Drive)**



- A hard drive or hard disk drive (HDD) is a type of data storage device that is used in laptops and desktop computers.
- An HDD is a “non-volatile” storage drive, which means it can retain the stored data even when no power is supplied to the device.
- Operating systems (OS) tell the HDD to read and write data as needed by programs.
- The speed that the drive reads and writes this data is solely dependent on the drive itself.



**PROCEDURE NO: 2**

**AIM**

Demonstration of various ports: CPU , VGA port, PS/2 (keyboard, mouse) ,USB, LAN, Speaker, Audio.

**DESCRIPTION**

**VGA Port:**



- VGA ports also known as Video Graphic Array connector are those which connect the monitor to a computer's video card.
- VGA port has 15 holes and it is similar to the serial port connector.
- But VGA Ports have holes in it and the serial port connector has pins in it.

**PS/2 Port:**



- PS/2 ports are special ports used for connecting old computer keyboard and mouse.
- It was invented by IBM.
- In old computers, there are minimum of two PS/2 Ports, each for the keyboard and the mouse.
- It is a 6 pin mini Din connector.

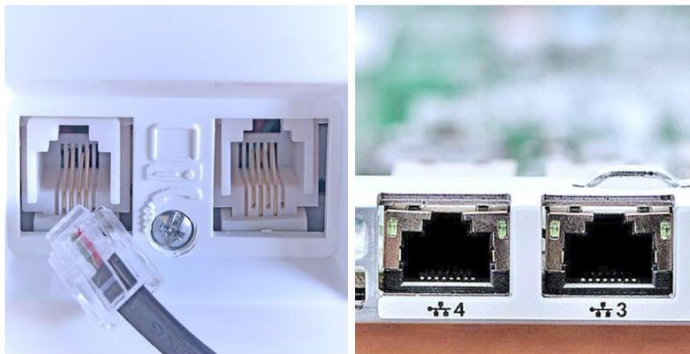
**USB (Universal Serial Bus):**





- In 1997 USB was first introduced.
- This can connect all kinds of external USB devices, like external hard disk, printer, scanner, mouse, keyboard, etc.
- There are minimum of two USB Ports provided in most of the computer systems.
- It is a kind of new type serial connection Port that is much faster than the old serial Ports and These USB Ports are much smarter and more versatile, as it allows the “daisy chaining” of up to 127 USB peripherals connected to one port.
- The data transfer rate in this is Data12 megabits per second. It also provides plug & plays communication.

### LAN Port



- A LAN port is also known as an Ethernet port.
- Both terms refer to exactly the same socket on computers, servers, modems, Wi-Fi routers, switches, and other network devices.

### Speaker / Audio Port



- The CPU on the desktop computer will contain two 3.5 mm jack ports at the front. One of them is for getting audio signals (for speakers) and the other is for giving audio input (microphone).
- You can find the difference between CPU and motherboard here.
- So these two ports are used for basic purposes.

### PROCEDURE NO: 3

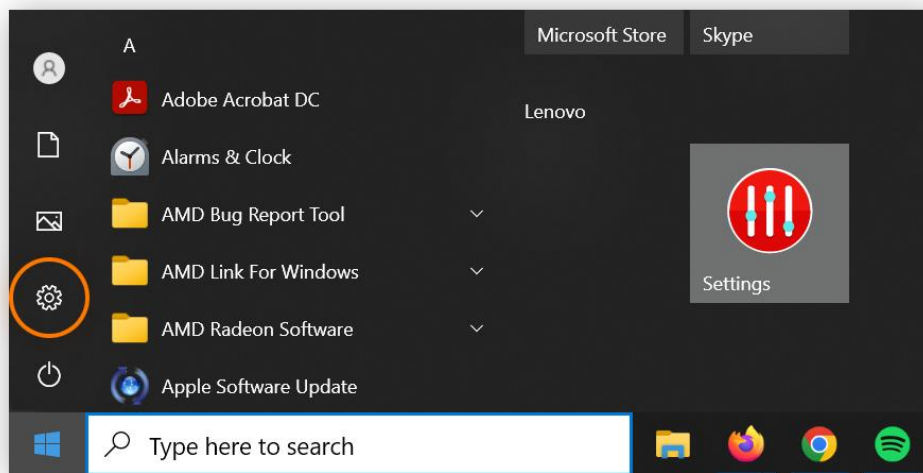
#### AIM

Identify the Computer Name and Hardware Specification (RAM capacity, Processor type, HDD, 32 bit/ 64 bit).

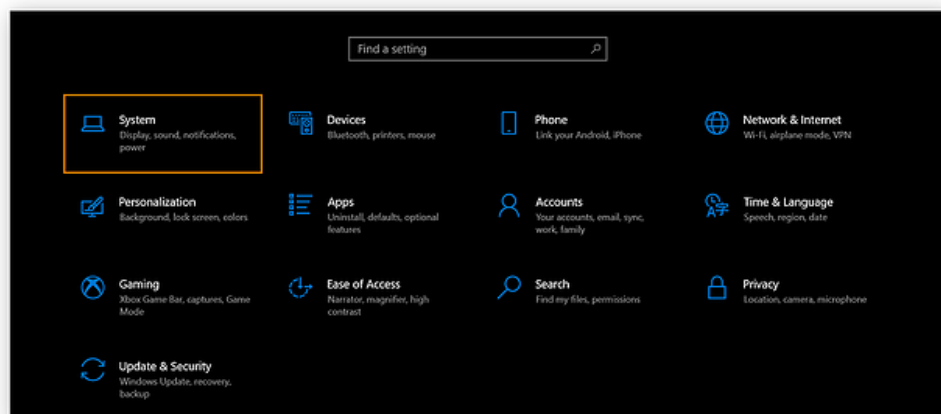
#### DESCRIPTION

Here's how to find computer Hardware Specifications in Windows Settings:

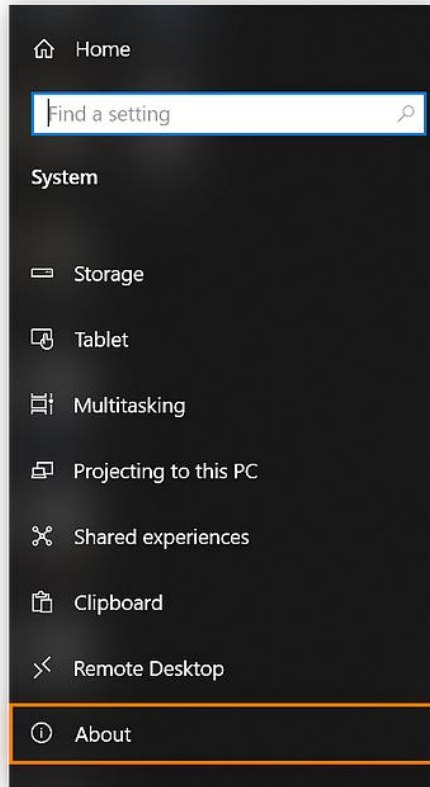
1. Click the **Windows** icon in the lower-left. Then, click **Settings** (the gear icon).



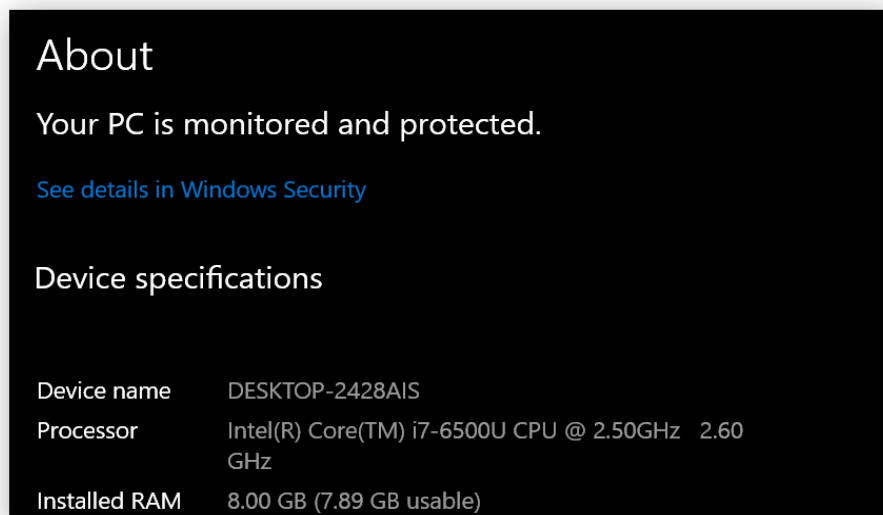
2. Click **System**.



3. Now click **About**. It's on the left-side navigation and you may have to scroll.



4. An information screen will display letting you review your computer specs.





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#### **PROCEDURE NO: 4**

#### **AIM**

Identify and Troubleshoot the problems of RAM (beep sound with blue screen), SMPS and motherboard (CPU is not switched ON)

#### **DESCRIPTION**

##### **RAM Problem: Beep Sound**

Beeps	Meaning/Troubleshooting
1 long, 2 short	Video adapter error: Bad or improperly seated video card
Repeating beeps	Memory error: Bad or improperly seated RAM
1 long, 3 short	Bad video RAM or video card not present
High-frequency beeps	Overheated CPU: Check fans
Repeating high/low beeps	CPU: Improperly seated or defective CPU

##### **SMPS Problem and Troubleshoot**

Common problems appearing from a faulty SPMS

##### **1) The power is not reaching the computer system –**

##### **Solutions:-**

- Check the power from the source
- Check the setting of the voltage in CPU
- Check the front panel of motherboard
- Check the power supply connections to the motherboard
- Check the SMPS without connecting to the motherboard.

This step may require the help of professionals and thus, you need to hire a computer repair service in Bunbury.

##### **2) Computer getting started after second or third try –**

##### **Solutions:-**

- Check the power supply switch on the cabinet
- Consider replacing SM

##### **3) Display comes to monitor and becomes black –**

##### **Solutions:-**

- Replace SMPS and try again
- The problem may arise from Motherboard

**4) The PC powers on without display –**

**Solutions:-**

- Check the VGA cable and monitor connections
- Discard the SMPS, it has been damaged badly by voltage fluctuation
- Check the Display Card Modem

**5) There is a whistling/squealing/motor like noise from SMPS when PC starts –**

**Solutions:-**

- Check the SMPS fan
- Genuine SMPS problem, consider replacing

**6) The PC freezes or reboots suddenly –**

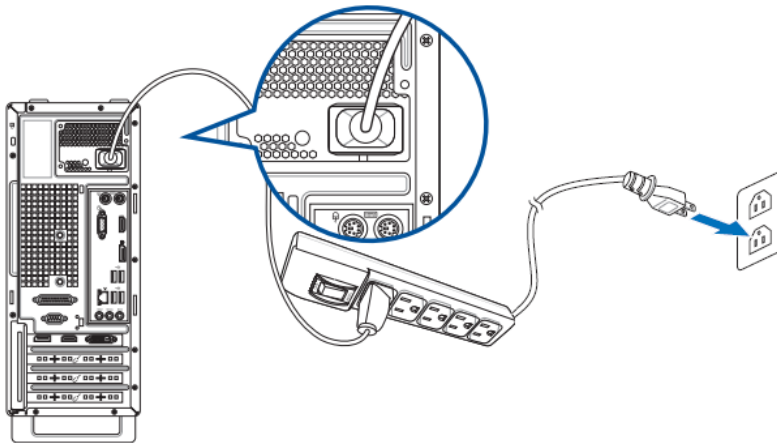
**Solutions:-**

- Overheating problem of SMPS

**Mother Board Problem and Troubleshoot (No Power/No Boot/No Display)**

**1. Check the power Supply**

Please check if the connection of the power cord and electric socket are well connected as shown below. If there is a main power switch on the extension cord, please make sure it is switched on. If it still can't power on, please replace the extension cord or electric socket.



2. Check CPU
3. Check memory
4. Check the Graphic Card
5. Check the Monitor
6. Test the Minimal component, isolating the possible Cause
7. Clear CMOS

## **PROCEDURE NO: 5**

### **AIM**

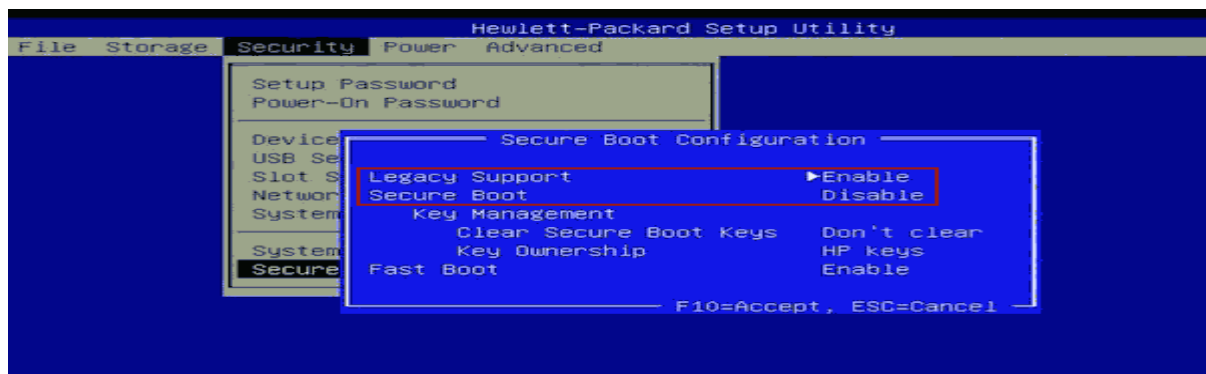
**Configure BIOS Settings-disable and enable USB and LAN.**

### **DESCRIPTION**

#### **Configure Bios setting:**

**Step 1:** Start the computer and press F10 (depending on the BIOS manufacturer, try them all if needed) multiple times during the initial start-up screen. A menu may appear. Choose to enter BIOS setup. The BIOS setup utility page appears.

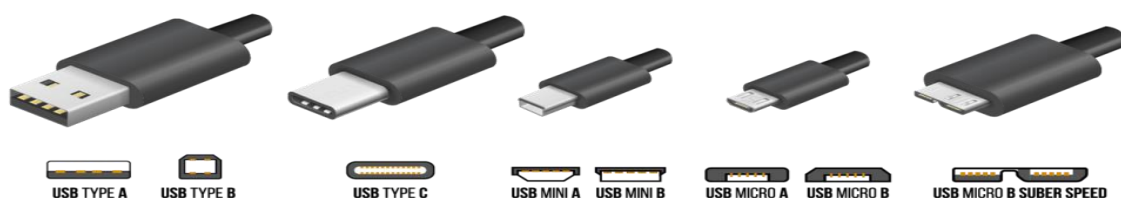
**Step 2:** IN Configure windows, go to Security→ USB Security(make enable/disable) and Network Boot(make enable/disable).



**Figure 5.1**

#### **USB(Universal Serial Bus):**

- USB is a Technology used to connect computers with peripheral devices.
- A USB flash drive can be used in place of a compact disc.



**Figure 5.2**

**LAN(Local Area Network):**

- A *local area network (LAN)* is a collection of devices connected together in one physical location, such as a building, office, or home.
- . The computers in a LAN connect to each other via TCP/IP ethernet or Wi-Fi. A LAN.
- LAN is normally exclusive to an organization, such as a school, office, association or church

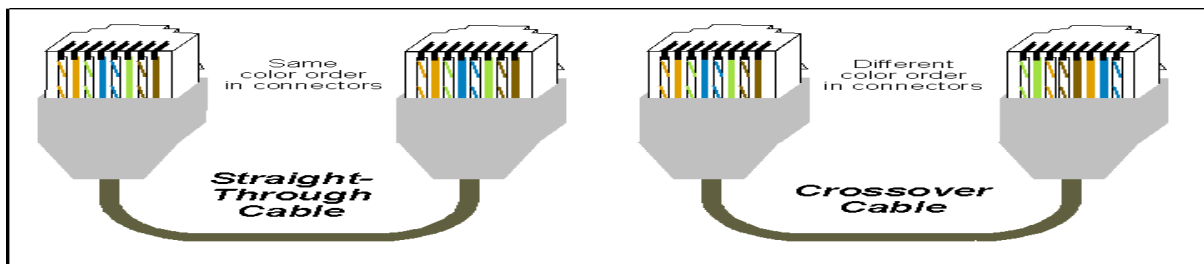


Figure 5.3



**PROCEDURE NO: 6**

**AIM**

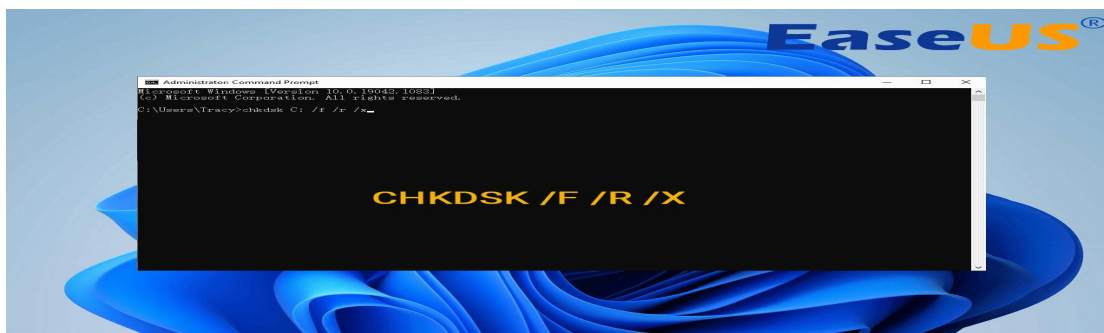
Identify, how to recover the hidden files from corrupted pen drive using command.

**DESCRIPTION**

**Step 1:** In the Command Prompt window, type attrib -h -r -s /s /d G:\*. \* (replace G: with the drive letter for your device) and press Enter.

**Step 2:** When you finish these steps, access your USB flash drive, hard drive, or memory card to check if you can see all of the hidden files.

**Step 3:** Click on the Windows icon → select "Search" and type the **command prompt**.--  
> Right-click on it → click on open Command Prompt as Administrator.



**Pen Drive :**

- A USB drive, also referred to as a flash drive or memory stick.
- It is a small, portable device that plugs into the USB port on your computer.
- USB drives are commonly used for storage, data backup, and transferring files between devices.



**PROCEDURE NO: 7**

**AIM**

Recover the contents from crashed hard disk using Disk drills software.

**DESCRIPTION**

Yes, you can with Disk Drill recovery software with these simple steps.

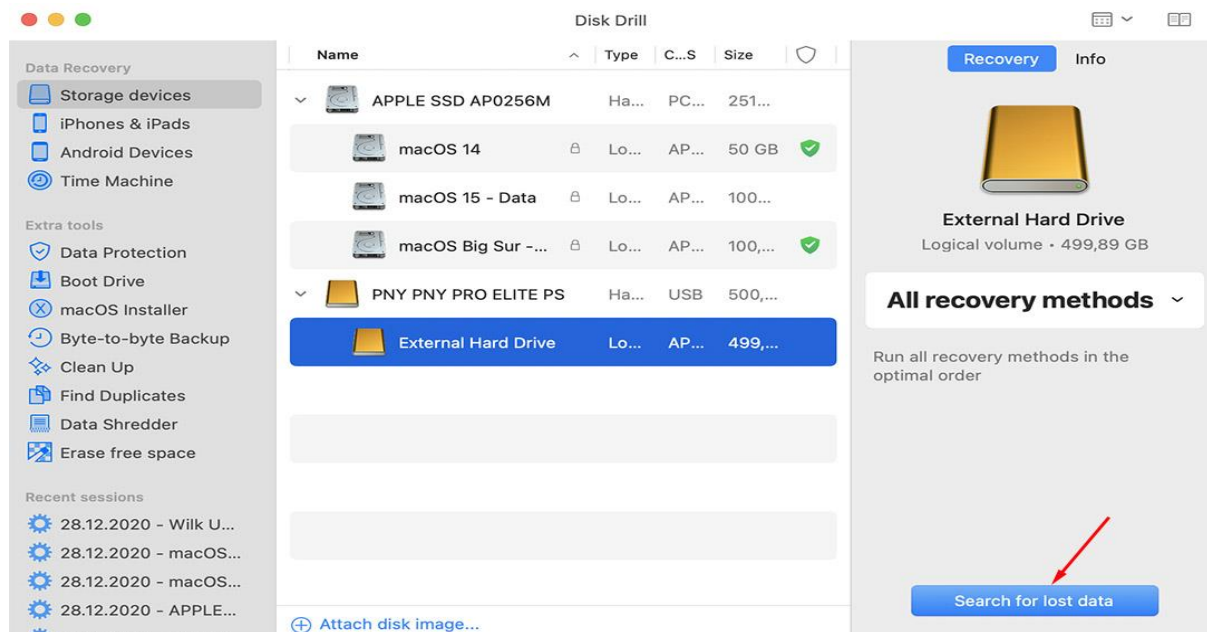
**Step 1:** Download, and install Disk Drill.

**Step 2:** Launch the app and select the hard drive.

**Step 3:** Click Recover to start scanning for lost data.

**Step 4:** Preview the files that can be recovered.

**Step 5:** Click Recover again to perform the recovery.



**Figure: 7.1**



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#### **PROCEDURE NO: 8**

#### **AIM**

**Install Operating system –Windows Family (Windows 7/Windows 10) and also make partitions.**

#### **DESCRIPTION**

##### **System Requirements:**

- If you are currently running Windows Vista, the good news is that you are ready for Windows 7. Tests performed by various parties have consistently confirmed that Windows 7 outperformed Windows Vista on a similar hardware configuration.
- If you are coming from previous versions of Windows (pre-Vista), take note of the following *suggested* hardware requirements:
  - a) 1 GHz or faster 32-bit or 64-bit processor.
  - b) 1 GB RAM (for 32-bit) or 2 GB RAM (for 64-bit)
  - c) 16 GB of available disk space (for 32-bit) or 20 GB of available disk space (for 64-bit)
  - d) DirectX 9 graphics device with Windows Display Driver Model 1.0 or higher (for Aero—the graphical user interface and default theme in most editions of Windows 7)

**There are 3 method of installing Operating systems:**

1. CD/DVD
2. Create Bootable Pen drive
3. Through Network.

##### **Steps for installing through Pen drive:**

**Step 1:** Insert bootable pen drive and start the system.

**Step 2:** Press F9 or F2 Keys,get into configuration windows.

**Step 3:** Select bootable device and click on Next, Click on Next, click on Install.

**Step 4:**Click on Custom and select disk then make partitions.

**Step 5:** Select primary disk and click on install.

**Step 6:** Next installing OS, wait 15 to 20 mins.



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**Step 7:** Next set admin name and click on next.

**Step 8:** Set password and click on next.

**Step 9:** Install third party software or set date and time then click on next.

**Step 10:** congratulations for installing Windows operating systems.



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#### **PROCEDURE NO: 9**

#### **AIM**

Install operating System-Unix family(Linux/Ubuntu)

#### **DESCRIPTION**

##### **Ubuntu-Description**

- Ubuntu is an Operating system.
- It's an [open-source LINUX distribution](#)
- Ubuntu is Free.
- It is completely customizable
- Ubuntu is more secure.
- Good for development purposes.
- It can be updated without restarting.

##### **System Requirement:**

- 1 GHz x86 processor (Pentium 4 or better)
- 1 GB of system memory (RAM)
- 5 GB of disk space (at least 15 GB is recommended)
- Video support capable of 1024×768 resolution
- Audio support
- An Internet connection

##### **Installation Process of Ubuntu-18.04 LTS**

1. Plug your bootable USB which contains Ubuntu installation image in the computer slot
2. Restart your computer.
3. Once the computer finds this plugged USB stick, a quick loading screen with a 'Welcome window' appears.
4. Selecting the preferred language.
5. Select the 'Install Ubuntu' button'; this will start the installation process.
6. Select the 'Download updates while installing' Click **Continue**
7. Choose the 'Install alongside other OS'.Click on 'Install Now'.
8. Select your location country and click 'Continue'.
9. Select the keyboard language and then click 'Continue'.
10. Give the login credentials, choose the login option and click 'Continue'.
11. After downloading and installing all the packages, Installation Complete window appears. Click **Restart Now**.

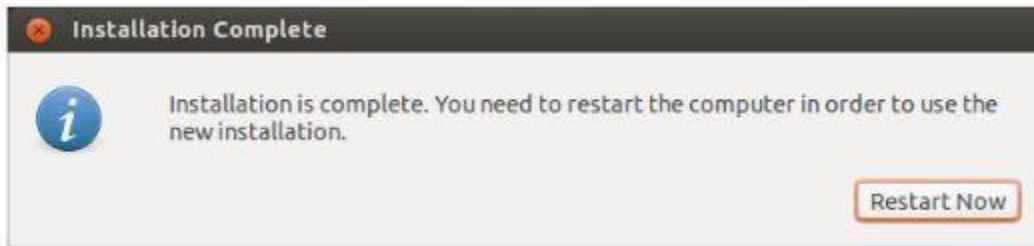


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#### PROCEDURE No: 10

#### AIM

Install application software- python 3.8, MS office 2010/2013, MySQL, TOAD, Open office etc

#### DESCRIPTION

##### 1.Python

##### Description

- Python is a free open source software available on different operating systems
- It is a very popular general-purpose interpreted, interactive, object-oriented, and high-level programming language.
- Python is dynamically-typed and garbage-collected programming language.

##### Steps to download Python Software

1.Go to the Python official download website.

<https://www.python.org/downloads>

2. Click the **download button** and Click **Python 3.8.10** and Python will start to download.

3. Next, right click the mouse button you will see **open** button click to open.

4. Enable to add Python 3.8 to path and click **install now**.

5. Wait a few minutes and display setup was successful. Next you will click the **close** button.







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## 2. MS Office

### Description

#### **Installation instructions**

1. Navigate to your computer's download (.exe) file (C:\Users\Your Username\Downloads by default).
2. Open the folder for the version of Windows Office Professional Plus 2013 that you wish to install (32-bit or 64-bit).
3. In the folder that opens, double-click on the file **setup.exe**.
4. Read the license agreement, select **I accept the terms of this agreement**, and then click **Continue**.
5. Click **Install Now**
6. **Wait** while the software is installed.
7. Once the installation is complete, click **Close**.

#### **Activation instructions**

1. From the start menu click **All programs > Microsoft Office 2013**, then click on any program in the folder to open it.
2. Click **Open Other Documents**
3. Click **Account**
4. Click **Change Product Key**
5. Open the license.txt file and Copy the Serial Number
6. Paste the serial number. A green check mark will appear if it is correct and Click **Install**
7. A user Account Control dialogue box will appear Click **Yes**





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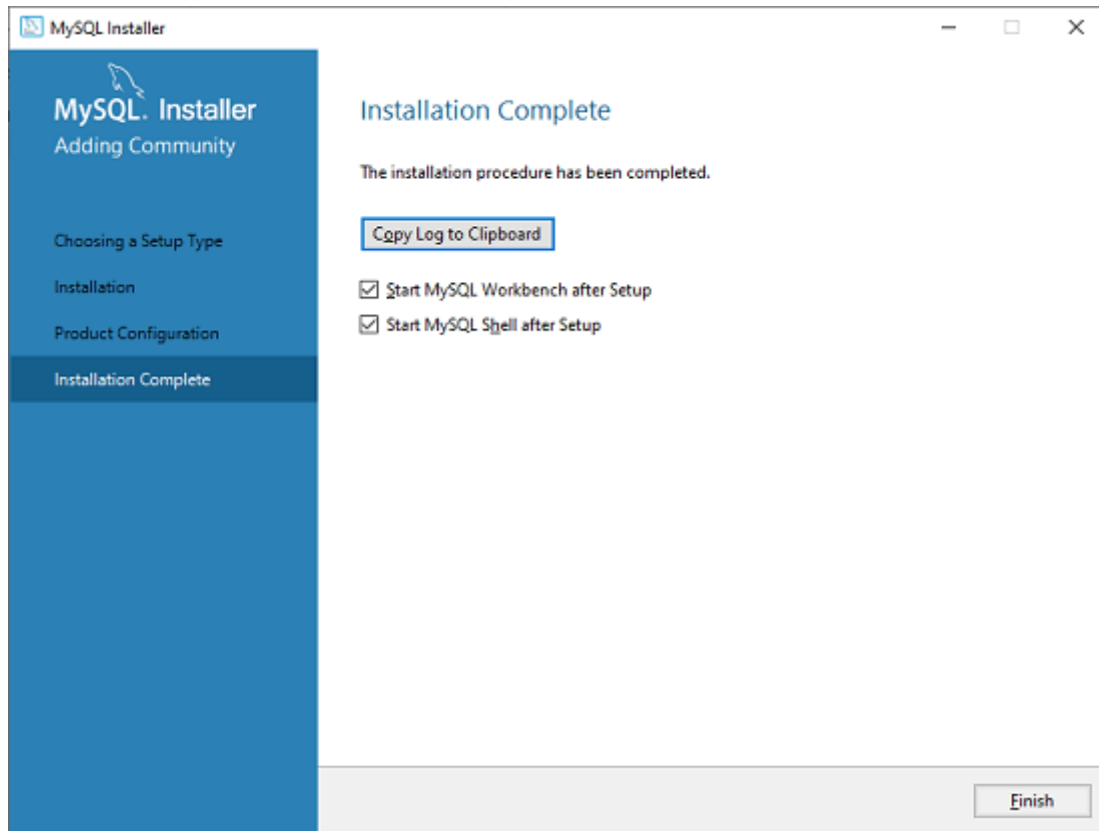
#### 3. MySQL

##### Description

- MySQL is one of the most popular relational database management software
- It provides multi-user access support with various storage engines.
- It is backed by Oracle Company.

##### Installation Steps

- 1: Go to the [official website](https://dev.mysql.com/downloads/installer/) of MySQL <https://dev.mysql.com/downloads/installer/> and download the community server edition software.
2. Choose the Operating System, such as Windows.
3. Choose the version number for the MySQL community server.
4. After downloading the setup, unzip it anywhere and double click the **MSI installer .exe file**.
5. In the next wizard, choose the **Setup Typesuch as Full** option and click on the **Next button**.
6. Clicking on the **Execute** button if we want to install all requirements automatically or can skip them. Now, click on the **Next button**.
7. Confirm **Yes** button.
8. Click on the **Execute** button.
9. Downloading and installingof all the products happens.
10. After completing the installation, click on the **Next** button.
11. Configure the MySQL Server by clicking **Next Button**
12. Choose the **Standalone MySQL Server/Classic MySQL Replication** option and click on **Next**.
13. Choose the Config Type as '**Development Machine**' and Connectivity as **TCP/IP**, and **Port Number** is 3306, then click on **Next**
14. Select the Authentication Method as '**Use Strong Password Encryption for Authentication**' and click on **Next**.
15. Mention the MySQL Root Password, click on the **Next** button.
16. Configure the Windows Service to start the server. Keep the default setup and click on the **Next** button.
17. Apply the Server Configuration byclicking the Execute button.
18. Click on the **Finish** button to continue.
19. Keep the default setting and click on the **Next-> Finish** button to complete the MySQL package installation.
20. Choose to configure the Router. So click on **Next->Finish** and then click the Next button.
21. Connect to Server option appears. Mention the root password, which we had set in the previous steps.
22. Select the **applied configurations** and click on the **Execute** button.
23. Click on the Finish button.
24. Now, the MySQL installation is complete. Click on the **Finish** button.



#### 4. **TOAD**

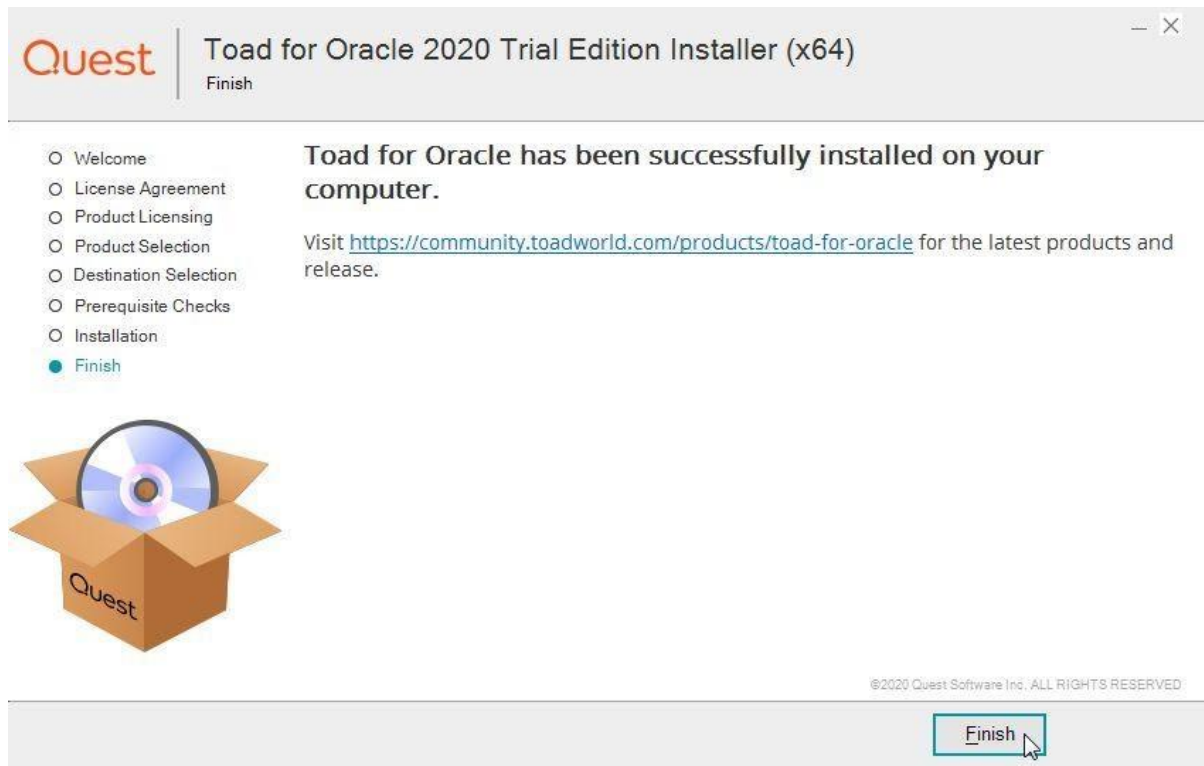
##### **Description**

- **TOAD** is a database management toolset from Quest Software
- It is used for managing relational and non-relational databases using SQL
- Aimed at database developers, database administrators, and data analysts.
- The Toad toolset runs against Oracle, SQL Server, IBM DB2, SAP and MySQL.
- A Toad product for data preparation supports many data platforms.

##### **Installation Steps**

1. Set the Environment for the installation
2. Select the Toad for Oracle Edition that meets your needs
3. Obtain a License Key from the vendor
4. Select the Installer Type
5. Download the Toad for Oracle Installer Application
6. Run the Installer.
7. Accept the License Agreement
8. Click on “Add License” in order to insert the license key and site message provided by Quest.
9. Click on Next in the Toad for Oracle Product Licensing screen
10. Select the Toad for Oracle products to install and click on Next
11. Specify the directory in which the selected Toad for Oracle products are to be installed with the Change button to browse for a directory. Click on Next

12. Prerequisite checks are performed for Toad for Oracle. If all prerequisite checks have passed click on Install to install the selected Toad for Oracle products.
13. The Toad for Oracle installation gets started as indicated by the progress bar
14. When the Toad for Oracle installation has completed successfully as indicated by a message click on Finish



## 5. OpenOffice

### Description

- Apache OpenOffice is an open-source office suite.
- It provides free applications for spreadsheets, word processing, presentations, graphics, databases, etc.
- It is easy to use and available in 121 languages.
- In OpenOffice, the data is stored in the standard format and it can read or write files from other office software.
- The default format is the OpenDocument Format.
- It is available for operating systems like Linux, Windows, MacOS, etc, and distributed under the Apache 2.0 license.



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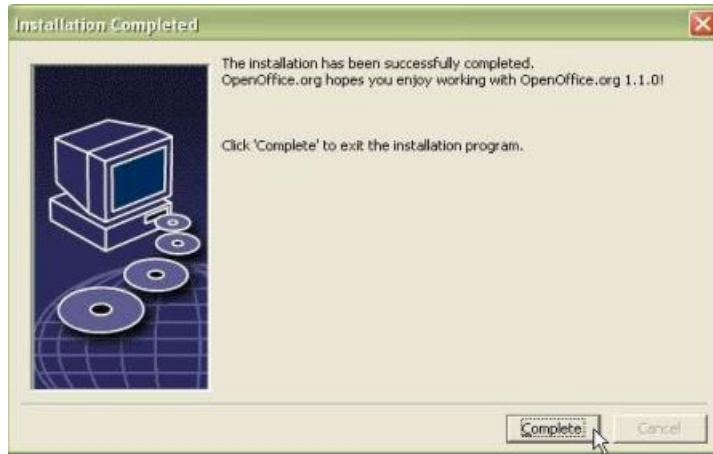
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#### **Installation Steps**

6. Visit the official website using URL <https://www.openoffice.org/> in the web browser.
7. Click on “**I want to download Apache OpenOffice**” link.
8. Click on the **Download full installation** button.
9. Find the executable file in the download folder of your system and run it.
10. Confirm that the software makes changes to your system, so click on the **Yes** button.
11. Installation process is started so click on the **Next** button.
12. Choose the location where you want your extract folder, in this folder. Now click on the Unpack button.
13. Setup will automatically start.
14. If not, Click only on the setup to continue the installation.
15. Confirm setup to make changes to your system. Click on **Yes**.
16. The setup will start now click on the **Next** button.
17. **Write** your name and organization name, used for if you want to.
18. Otherwise click on the **Next** button.
19. **Choose the** setup type- click on **complete** and **Next**
20. From the program modules and components screen,click on the **Next** button.
21. Choose file type and click on **Next** button. Select Microsoft Word Documents and Microsoft PowerPoint Presentation.
22. **Program** is ready to install Click on the **Install** button.
23. After the installation process is completed, click on the **Finish** button





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#### **PROCEDURE No: 11**

#### **AIM**

Install any one of the Antivirus software (Avast, Kaspersky etc) and observe the variation before and after the installation

#### **DESCRIPTION**

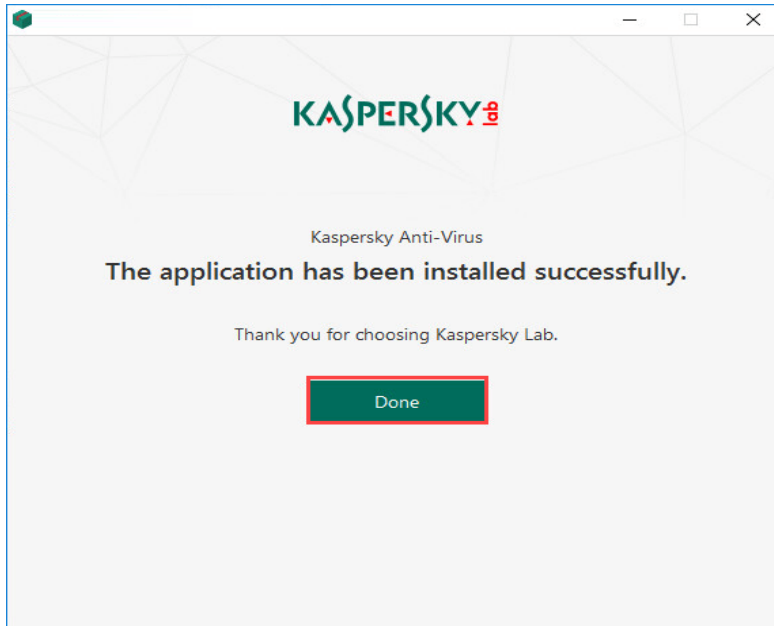
##### **Kaspersky-Description**

- Kaspersky is an Anti-Virus software.
- Antivirus is a kind of software used to prevent, scan, detect and delete viruses from a computer.
- Once installed, most antivirus software runs automatically in the background to provide real-time protection against virus attacks.
- Kaspersky provides real-time protection, detection and removal of viruses, trojans, worms, spyware, adware, key loggers, malicious tools and auto-dialers, as well as detection and removal of rootkits.

##### **Installation Steps**

1. Download the Kaspersky Anti-Virus installation package from the [Kaspersky website\(https://www.kaspersky.com/downloads/antivirus\)](https://www.kaspersky.com/downloads/antivirus).
2. Run the installer.
3. Wait until the searching for a newer version of the application has been completed, or click **Skip**.
4. Read the End User License Agreement and click **Continue** if you agree to the terms.
5. Read the Kaspersky Security Network Statement carefully. Select the checkbox if you agree to the terms.
6. Together with Kaspersky Internet Security, Kaspersky Secure Connection will be installed to ensure protected connection to the Internet. Click **Install**.
7. Wait for the installation to complete. Make sure the recommended settings are enabled and click **Apply**.
8. Click **Done**.





**To activate the application:**

3. In the application window, click **License**
4. Click **Enter activation code**.
5. Enter the code from the message you have received after buying the license and click **Activate**
6. Click **Done**.
7. Kaspersky Anti-Virus is now activated



# DEPARTMENT OF COMPUTER APPLICATION

## SEMESTER III

### Computer Assembly And Repair Lab

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#### **PROCEDURE No: 12**

#### **AIM**

Add new hardware devices (Keyboard, Mouse, Speaker, Microphone)

#### **DESCRIPTION**

##### **1.Keyboard**

##### **Description**

- A keyboard is a peripheral device that enables a user to input text into a computer or any other electronic machinery.
- It is an input device and is the most basic way for the user to communicate with a computer.
- This device is patterned after its predecessor, the typewriter.
- The keys include punctuation, alphanumeric and special keys like the Windows key and various multimedia keys, which have specific functions assigned to them.

##### **Steps to connect a Keyboard to the Computer**

1. Unpack the **keyboard** and determine whether it uses a **USB** (rectangular) connector or a **PS/2** (round) connector.
2. If it uses a USB connector, plug it into any of the USB ports on the back/front of the computer.
3. If it uses a PS/2 connector, plug it into the **purple** keyboard port on the back of the computer.

##### **1.Mouse**

##### **Description**

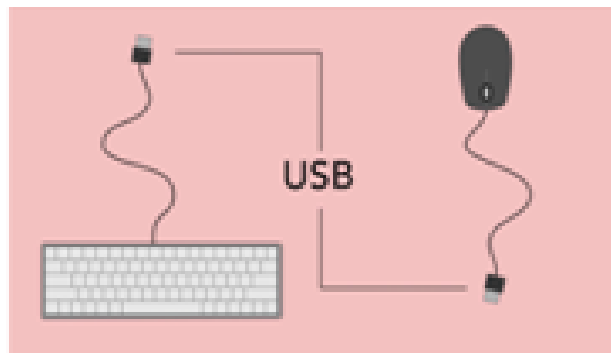
- Mouse is a hand-held pointing device that detects two-dimensional motion relative to a surface.
- This motion is typically translated into the motion of a pointer on a display, which allows a smooth control of the graphical user interface of a computer.
- Most types of mouse have two buttons, and some will have a wheel in between the buttons.
- Most types of mouse connect to the computer with a cable, and use the computer's power to work and some types are Wireless.
- The mouse usually sits on the desk to the left or right of the keyboard.

##### **Steps to connect a Mouse to the Computer**

Unpack the **mouse** and determine whether it uses a **USB** or **PS/2** connector.

1. If it uses a USB connector, plug it into any of the USB ports on the back/front of the computer.

2. If it uses a PS/2 connector, plug it into the **green** mouse port on the back of the computer.
3. If your keyboard has a **USB port**, you can connect your mouse to the keyboard instead of connecting it directly to your computer.
4. If you have a **wireless** mouse or keyboard, you may need to connect a Bluetooth **dongle** (USB adapter) to the computer if it doesn't have built-in Bluetooth



### **1. Speaker and Microphone**

#### **Microphone-Description**

- A microphone is a device that translates sound vibrations in the air into electronic signals and scribes them to a recording medium or over a loudspeaker.
- Microphones enable many types of audio recording devices for purposes including communications of many kinds, as well as music vocals, speech and sound recording.
- Microphones can be standalone or embedded in devices such as headsets and telephones

#### **Speaker-Description**

- Speakers are output devices used to connect to a computer to generate sound. Some speakers are designed to connect with any kind of sound system, while some can be hooked up only with computers.
- With the computer speaker, the computer's sound card creates a signal that is used to produce sound.
- The primary objective of speakers is to offer audio output for the listener.
- The electromagnetic waves are converted into sound waves through the speaker

**Steps to connect a Speaker and Microphone to the Computer**

1. If you have **external speakers** or **headphones**, you can connect them to your computer's **audio port** (either on the front or back of the computer case).
2. **Speakers** or **headphones** connect to the **green** port
3. **Microphones** connect to the **pink** port.
4. Some speakers, headphones, and microphones have **USB connectors** instead of the usual audio plug.
5. These can be connected to any USB port.





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#### **PROCEDURE No: 13**

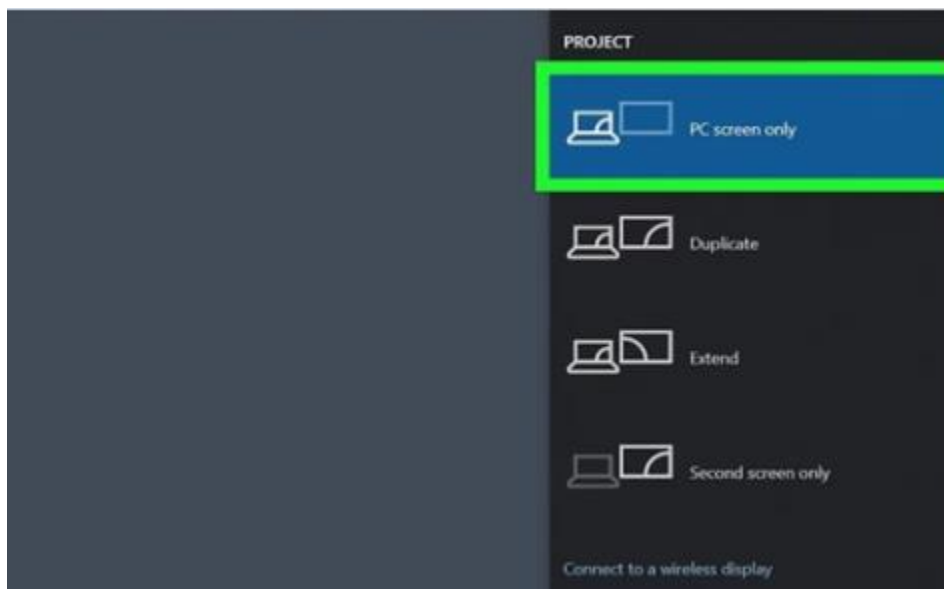
#### **AIM**

Connect the LCD Projector with Laptop/CPU.

#### **DESCRIPTION**

LCD stands for Liquid Crystal Display.

1. Plug in the cable to the port on both your laptop and the projector. Look at the shape of the cable and plug it into a port that looks the same.
2. Turn on your projector (and laptop, if needed). Both your laptop and the projector need to be on to continue.
3. Press **Win+P** and select a sharing option. A list of screen-sharing options will appear on your monitor:
  - **PC Screen Only:** This option turns off the projection screen so your laptop screen is not shared.
  - **Duplicate:** Share everything from your screen to the projector, but you'll see the same image on the projector on your laptop screen.
  - **Extend:** This option treats the projector as an extension of your laptop's screen and offers you more space; for anything you want to share, you'll have to drag from your laptop's screen to the projection area.
  - **Second screen only:** Share everything from your screen to the projector, but you will not see anything on your laptop's display screen.





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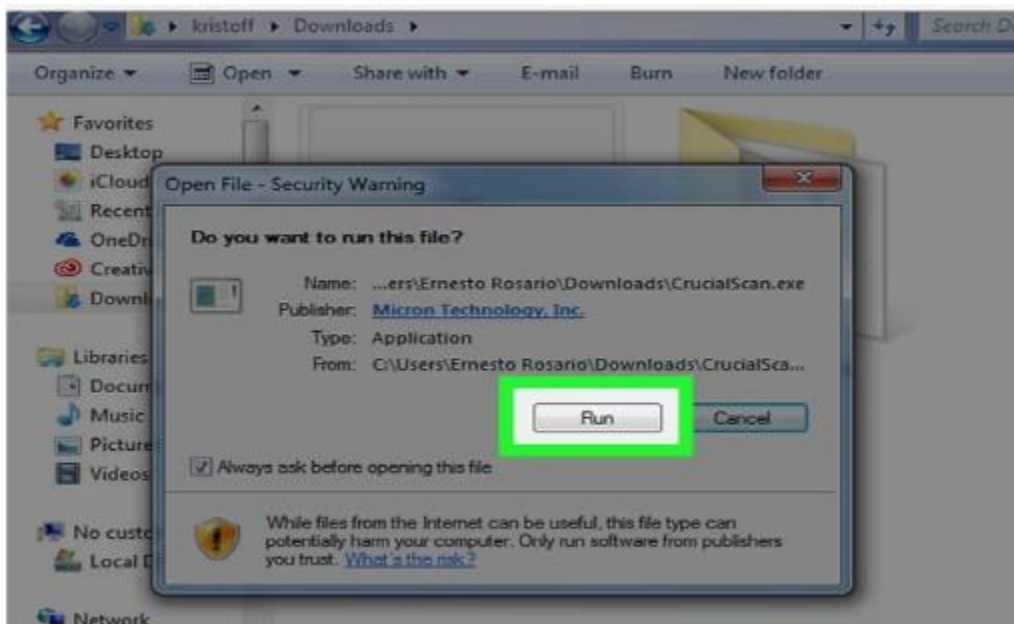
#### **PROCEDURE No: 14**

#### **AIM**

Adding additional RAM to the system (Expanding RAM Size).

#### **DESCRIPTION**

1. Determine if your version of Windows is 32-bit or 64-bit.  
If it is "32-bit Operating System," your version of Windows can only support up to 4 GB of RAM.  
If it is "64-bit Operating System," your version of Windows can handle 128 GB, 2 TB, or 6 GB.
2. Go to any RAM retailer page in web browser
3. Click the **scan computer** button
4. Agree the **Terms & Conditions** and You may have to click **Save** to start the download.
5. Double-click the downloaded file.
6. Click Yes to allow the app to run.



**PROCEDURE No: 15**

**AIM**

Graphics Card Insertion.

**DESCRIPTION**

1. Preparing Your PC: Before you can install a new graphics card, your PC needs to be prepared. Start by unplugging your power supply
2. Remove Expansion Slot Plates by simply twisting their thumbscrews
3. Open Your PCIe Slot
4. Now it is time to install your graphics card. Start by lining up your graphics card's main connector with the PCIe slot. Once you have the connectors lined up, the graphics card will easily glide into place. At this point, you will need to push down on the card until you hear the clip on your PCIe slot close. At this point, you should reinstall the screws that were holding your expansion slot plates in place.
5. Once everything is installed, it will be time to connect your monitors to the graphics card and boot the PC





**PROCEDURE No: 16**

**AIM**

Assemble and Disassemble Desktop System.

**DESCRIPTION**

**Disassemble**

1. Turn off the computer, unplug the power cord and unplug any peripheral items attached to the computer, such as the keyboard, mouse, monitor, headphones, and any external drives.
2. Remove at least one of the side covers, usually the right side as you face the front of the computer.
3. Disconnect all the connectors, then remove any card readers and internal DVD players.
4. Remove any standalone fans.
5. Disconnect the cables and remove the storage drive.
6. Remove the memory (RAM) modules by pushing the clips on both ends of the module down.
7. Remove the power supply unit by unplugging the remaining connectors.
8. Remove any adapter or expansion cards from the motherboard.
9. Disconnect all the cables from the motherboard

**Assemble**

If you are rebuilding the computer, insert the components in the opposite order you removed them, starting with the motherboard. Plug in all the cables as you insert the component; most items will plug into the motherboard and the power supply unit.





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