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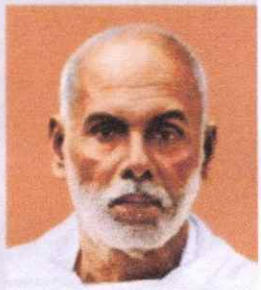
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Know Your PC

A WORKSHOP ON FAMILIARIZING COMPUTER COMPONENTS AND ASSEMBLING
UNDER THE BANNER OF CSE DEPARTMENT ASSOCIATION-TECHKRITI

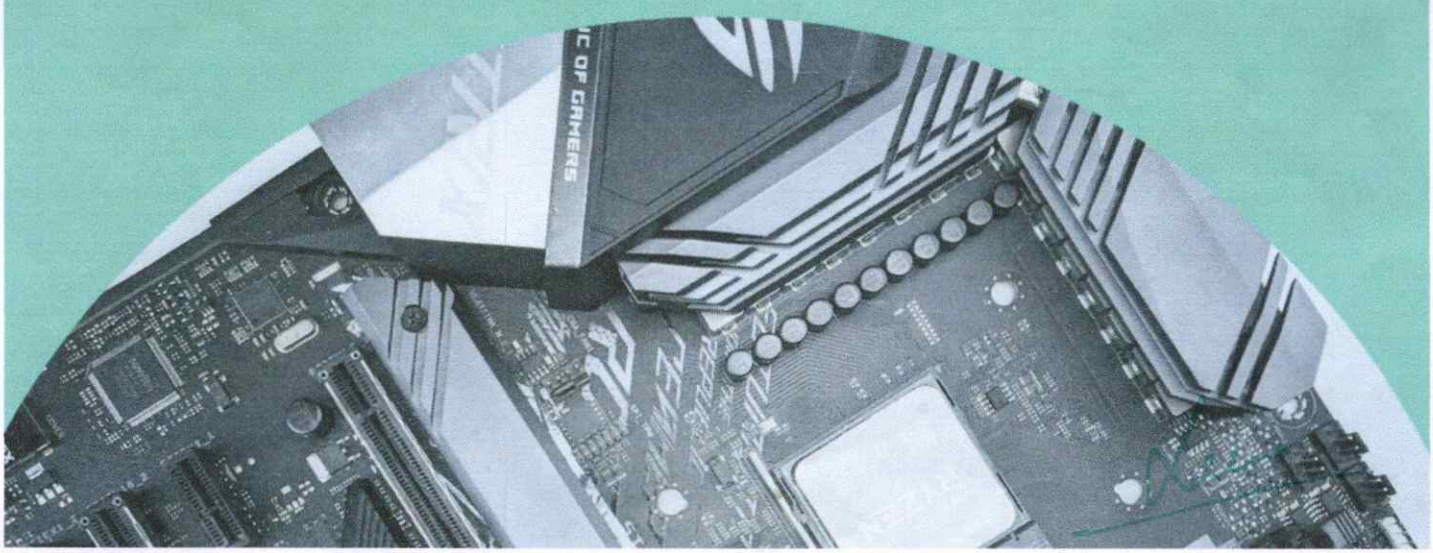
RESOURCE PERSONS

- Mr. Nishanth KP
- Ms. Anusha M
- Ms. Anamika Sureshbabu
- Mr.Rohith M

VENUE:
NETWORKING LAB & SWAMI BODHANANDA HALL
TIME 9:00 AM TO 4:00 PM
DATE : 27/02/2024-02/03/2024

EVENT COORDINATORS

Mrs. Thulasibai A
Ms. Nimisha MK
Mrs. kripa PV



Dr. LEENA A. V.
PRINCIPAL
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

FIVE DAY ONLINE WORKSHOP ON PC COMPONENTS

KNOW YOUR PC

SCHEDULE

SL. NO:	DATE& TIME	TOPIC
1	27/02/2024 9:00 AM -4:00 PM	Introduction to Computer Hardware
2	28/022024 9:00 AM -4:00 PM	Operating Systems and Software
3	29/02/2024 9:00 AM -4:00 PM	Basic Maintenance and Troubleshooting
4	01/03/2024 9:00 AM -4:00 PM	Hardware Upgrades and Customization
5	02/03/2024 9:00 AM -4:00 PM	Hands on training for system assembling and OS installation

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

HANDS ON TRAINING ON PC COMPONENTS

KNOW YOUR PC

SYLLUBUS

SL NO	TOPIC
1	**Introduction to Computer Hardware** • Overview of computer components: CPU, motherboard, RAM, storage devices (HDD, SSD), power supply, peripherals (keyboard, mouse, monitor, etc.) • Understanding the purpose and function of each component • Hands-on activity: Identifying components of a desktop computer
2	**Operating Systems and Software** • Introduction to different operating systems: Windows, macOS, Linux • Understanding the role of an operating system and its basic functions • Overview of software types: system software vs. application software • Hands-on activity: Navigating through different operating systems (if possible), installing/uninstalling software
3	**Basic Maintenance and Troubleshooting** • Importance of regular maintenance: software updates, disk clean up, defragmentation • Common PC issues and troubleshooting techniques: slow performance, software crashes, hardware malfunctions • Introduction to antivirus software and best practices for online security • Hands-on activity: Performing basic maintenance tasks on a computer, identifying and resolving common issues
4	**Hardware Upgrades and Customization** • Understanding compatibility: CPU sockets, RAM types, expansion slots • Overview of common hardware upgrades: RAM, storage, graphics card
5	**Hands on training for system assembling and OS installation** • Assessment and feedback session

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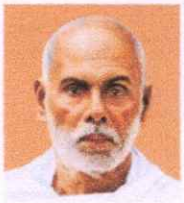

EVENT PROPOSAL FORM

Submitted by the department of Computer Science andEngineering

TO BE FILLED BY THE EVENT COORDINATOR(S)

1	**Event type**	WORKSHOP
2	**Event name**	KNOW YOUR PC
3	**Whether the event is inter departmental? If yes, mention the other department(s) associated with**	NO
4	**Mode of conduct [online / offline]**	Offline
5	**Date and time**	27/02/2024 to 02/03/2024 9:00 AM -4:00 PM
6	**Venue**	SWAMI BODHANANDHA HALL &NETWORKING LAB
7	**Whether any professional body is associated with the event?** **If yes, name the body**	YES, TECHKRITI-CSE ASSOCIATION
8	**Participants / Target Audience**	S2 CSE STUDENTS
9	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	Yes, EST 102 PROGRAMMING IN C SEMESTER 2
10	**Objectives of the event**	• Upon completion of the workshop, students will demonstrate competency in identifying and understanding various hardware components of a PC, including but not limited to CPU, GPU, RAM, motherboard, storage devices, and peripherals, and will be able to assemble a functional PC system independently, adhering to safety and compatibility standards. • By the end of the workshop, students will be able to proficiently install an operating system on a computer system, demonstrating an understanding of the installation

5 day workshop f

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		process, including partitioning, formatting, and driver installation, with minimal guidance..
11	**Expected Outcomes**	Students able to understand the hardware components and its assembling.
12	**Connected PO / PSO**	PO1-ENGINEERING KNOWLEDGE PO-6-ENGINEER AND SOCITY P12-LIFELONG LEARNING
13	**Justification for PO / PSO [may use separate sheet if necessary]**	**PO1 - Engineering Knowledge**: Justification: The workshop provides students with practical hands-on experience in understanding hardware components such as CPU, GPU, RAM, motherboard, storage devices, and peripherals. This knowledge is fundamental to engineering as it lays the groundwork for understanding computer architecture and system design principles. By gaining insight into how these components interact and function within a PC, students develop a strong foundation in engineering knowledge related to computer hardware. **PO6 - Engineer and Society**: In today's digital age, the ability to understand and work with computer hardware is essential not only for engineering professionals but also for society at large. This workshop equips students with the skills to troubleshoot, upgrade, and assemble computer systems, which are invaluable in various societal contexts. Additionally, by fostering an understanding of hardware components, the workshop promotes responsible use of technology and encourages students to consider the societal implications of their engineering decisions, such as environmental impact and accessibility. **P12 - Lifelong Learning**: The workshop on hardware familiarization and PC assembly promotes lifelong learning by instilling a curiosity-driven approach to technology. By engaging with hands-on activities and problem-solving challenges, students develop a mindset of continuous improvement and exploration. Additionally, the workshop encourages students to seek out new knowledge and skills independently, whether through further experimentation with computer hardware or through ongoing professional development in the field of engineering. Ultimately, the workshop fosters a culture of lifelong learning that empowers students to adapt to technological advancements and evolving engineering practices throughout their careers.
14	**Name of the resource person(s)**	Mr. Nishanth KP, Ms, Anusha M, Ms. Anamika Sureshbabu,,Mr. Rohith M
15	**Designation of the resource person (may attach separate sheet to indicate the profile)**	Technical lab staff
16	**Resource requirements**	System, Projector, Mike,. Hardware components

17	**Any fund from external source will be received? If yes, mention it.**	No
18	**Whether budget for the event is attached? (use separate sheet to indicate the estimated budget)**	No
19	**Any other relevant information**	No
20	**Name of the event coordinator(s)**	Mrs.Thulasibai A, Ms. Nimisha MK, Mrs. Kripa PV
21	**Dated signature of the coordinator(s)**	Nimisha 25/12/24

I. TO BE FILLED BY THE DEPARTMENT HOD(any one of the HoD, in case if the event is jointly conducted by various department(s))

1	**Comments on the relevance of the event**	Essential for Engineers
2	**Recommendation [Put a tick √ on whichever is applicable]**	**Recommended** ✓ **Not Recommended**
3	**Name**	Sandeep
4	**Dated Signature**	Sandeep

COMMENTS FROM PRINCIPAL

APPROVED / NOT APPROVED ✓

DATED SIGNATURE OF THE PRINCIPAL:

Dr. LEENA A. V. PRINCIPAL SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY PAYYANUR KANNUR

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

WORKSHOP-KNOW YOUR PC

NAME LIST

Roll No	Uni Reg No	Name
1	SNC23CS001	ABHINAND PATTUVOM VEETTIL
2	SNC23CS003	ABHINAV P V
3	SNC23CS004	ABHINAV V
4	SNC23CS006	ADITHYA GOVIND
5	SNC23CS007	ADWAITH KRISHNA M
6	SNC23CS008	ADWAITH UMESHAN
7	SNC23CS010	AMEGH K
8	SNC23CS0012	A P MADHUNEETH MOHANAN
9	SNC23CS020	FATHIMA NAFLA K
10	SNC23CS023	FATHIMATHUL AMRA A V
11	SNC23CS024	FATHIMATHUL ZUHRA
12	SNC23CS026	HARSHIN RAMESH
13	SNC23CS028	ISHA P
14	SNC23CS030	JAGAN MOHAN
15	SNC23CS034	MISHAL BASHEER
16	SNC23CS042	MUNAWIR V C
17	SNC23CS038	MUHAMMED RAZI C H
18	SNC23CS051	SIDHARTH V RAJ
19	SNC23CS053	SOORAJ KUMAR K R
20	SNC23CS057	SWARAJ K
21	SNC23CS058	SWATHI S NAMBIAR
22	SNC23CS059	THASNEEM ISMAYIL T K
23	SNC23CS060	VARSHA RAMACHANDRAN
24	SNC23CS061	VISMAYA C K

Event- Co-ordinators

HoD.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

WORKSHOP: - KNOW YOUR PC

ATTENDANCE SHEET

REGISTER NO.	NAME	27/02/2024	28/02/2024	29/02/2024	01/03/2024	02/03/2024
SNC23CS001	ABHINAND PATTUVOM VEETTIL					
SNC23CS003	ABHINAV P V					
SNC23CS004	ABHINAV V					
SNC23CS006	ADITHYA GOVIND					
SNC23CS007	ADWAITH KRISHNA M					
SNC23CS008	ADWAITH UMESHAN					
SNC23CS010	AMEGH K					
SNC23CS0012	A P MADHUNEETH MOHANAN					
SNC23CS020	FATHIMA NAFLA K					
SNC23CS023	FATHIMATHUL AMRA A V					
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SNC23CS057	SWARAJ K					
SNC23CS058	SWATHI S NAMBIAR					
SNC23CS059	THASNEEM ISMAYIL T K					
SNC23CS060	VARSHA RAMACHANDRAN					
SNC23CS061	VISMAYA C K					

Event -Co-ordinator

HOD

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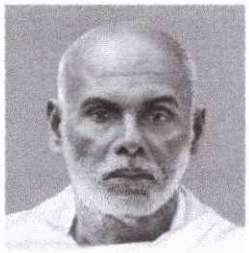

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

WORKSHOP REPORT: - A FIVE DAY WORKSHOP ON FAMILIARIZATION OF HARWARE COMPONENTS – KNOW YOUR PC

DATE: - 27/2/2024 to 02/03/2024

VENUE: - SWAMI BODHANANDHA HALL & NETWORKING LAB

ORGANIZED BY: - TECHKRITI, CSE ASSOCIATION

The five-day workshop on familiarization of hardware components – KNOW YOUR PC was organized with the aim of providing participants with comprehensive knowledge and hands-on experience familiarization on hardware components. The workshop covered a range of topics including hardware components, OS fundamentals and assembling

Day 1: Familiarization of hardware components: - The first day focused on introducing participants on the basics of hardware components of a computer. Students engaged in interactive discussions and activities to reinforce their understanding.

Day 2: Hands on session on hardware components: - On Second day, the students got a hands on session to familiarize the hardware components and students were familiarized with components.

Day 3: - Lecture session on assembling: - The third day, a lecture session was given to the students to get to know about the steps and procedure required for assembling the hardware components.

Day 4: - Hands on session on assembling: - Fourth day was dedicated to the students for practical demonstrations and hands on exercise to ensure them how assembling is done.

Day 5: - Feedback and Response: - Last day of the workshop is provided for an interactive session to get the feedback and responses from both students and resource persons. And an online test was conducted to get the analysis of the workshop.

The five-day workshop on familiarization of hardware components provides students with a comprehensive understanding and to get familiarize with hardware components. By combining theoretical concepts with practical hands-on experience, students gained valuable skills that are essential in the IT industry. The workshop received positive feedback from students who expressed satisfaction with the content, delivery, and interactive nature of the sessions.

Event Coordinator

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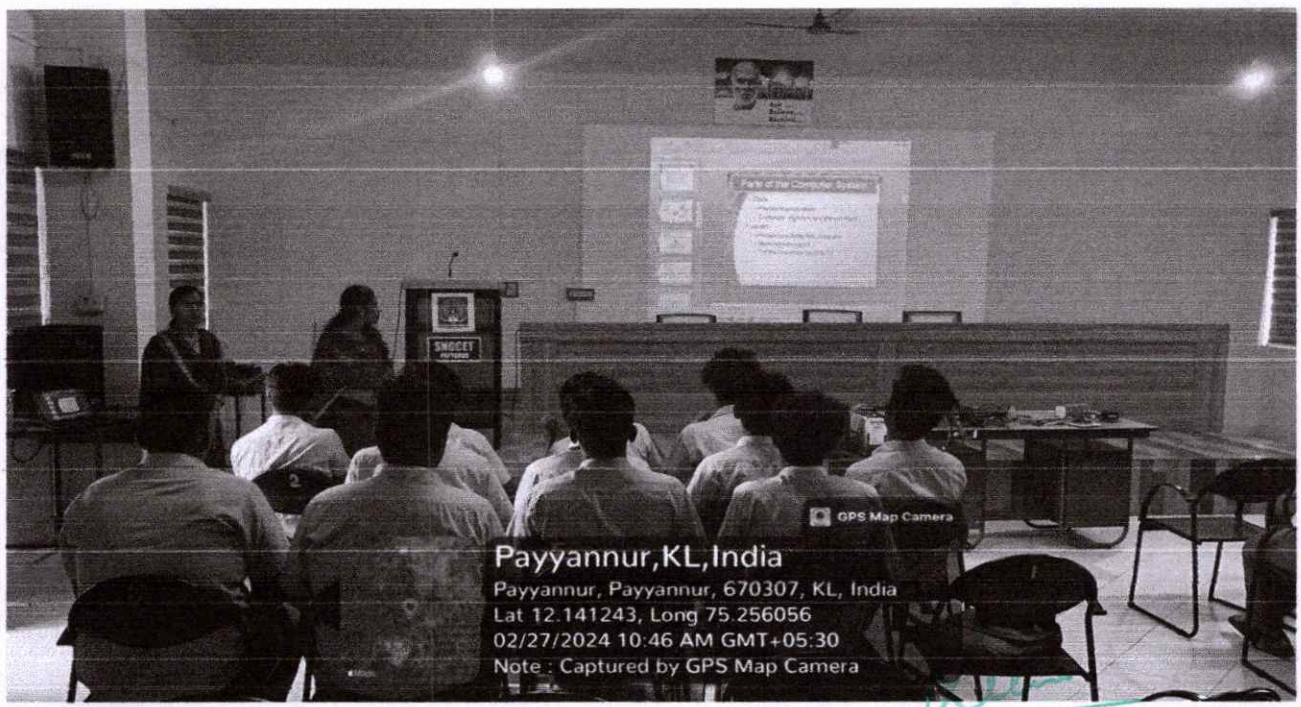
5 day workshop on familiarization of hardware components of PC



5 day workshop on familiarization of hardware components of PC

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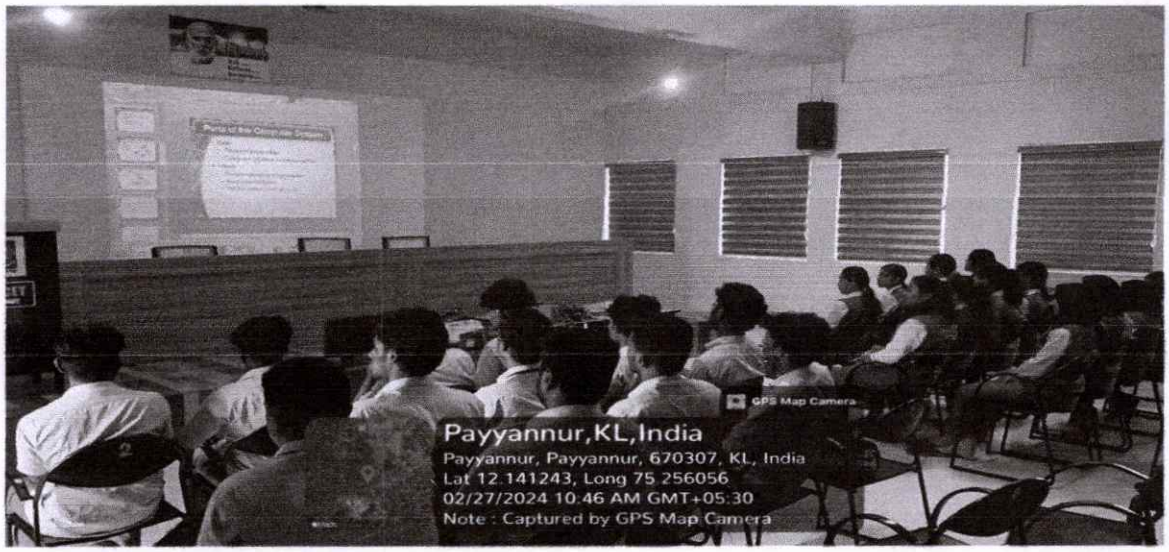
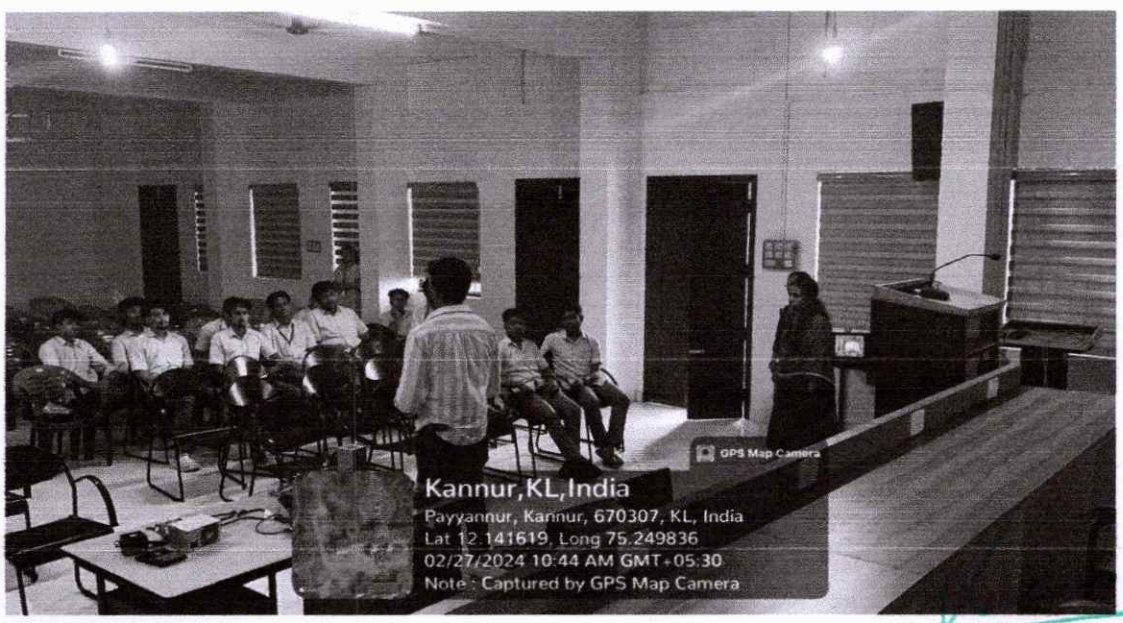


5 day workshop on familiarization of hardware components of PC



5 day workshop on familiarization of hardware components of PC

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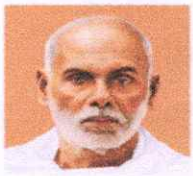

POST EVENT ANALYSIS FORM

Submitted by the department of Computer Science and Engineering

I. TO BE FILLED BY THE EVENT COORDINATOR(S)

1	**Event type conducted**	WORKSHOP
2	**Event name**	KNOW YOUR PC
3	**Date and time of the event conducted**	27/02/2024, 9:00 AM -4:00 PM
4	**Venue**	SWAMI BODHANANDHA HALL & NETWORKING LAB
5	**Whether the event was interdepartmental? If yes, mention the department(s) associated with**	NO
6	**Mode of conduct [online \ offline]**	Offline
7	**Is there any deviation from the proposal in the date, time and venue of the event? If yes, mention the reason for change**	No
8	**Whether any professional body was associated with the event?** **If yes, name the body**	YES, TECHKRITI -CSE ASSOCIATION
9	**Any funds received from the professional body? Indicate the amount**	No
10	**Participants / Target Audience**	S2 CSE STUDENTS
11	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	Yes, EST 102 PROGRAMMING IN C SEMESTER 2
12	**Objectives of the event**	• Upon completion of the workshop, students will demonstrate competency in identifying and understanding various hardware components of a PC, including but not

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		limited to CPU, GPU, RAM, motherboard, storage devices, and peripherals, and will be able to assemble a functional PC system independently, adhering to safety and compatibility standards. • By the end of the workshop, students will be able to proficiently install an operating system on a computer system, demonstrating an understanding of the installation process, including partitioning, formatting, and driver installation, with minimal guidance..
13	**Expected Outcomes**	Students able to understand the hardware components and its assembling.
15	**Connected PO / PSO**	PO1-ENGINEERING KNOWLEDGE PO-6-ENGINEER AND SOCITY P12-LIFELONG LEARNING
16	**Justification for PO / PSO [may use separate sheet if necessary]**	**PO1 - Engineering Knowledge**: Justification: The workshop provides students with practical hands-on experience in understanding hardware components such as CPU, GPU, RAM, motherboard, storage devices, and peripherals. This knowledge is fundamental to engineering as it lays the groundwork for understanding computer architecture and system design principles. By gaining insight into how these components interact and function within a PC, students develop a strong foundation in engineering knowledge related to computer hardware. **PO6 - Engineer and Society**: In today's digital age, the ability to understand and work with computer hardware is essential not only for engineering professionals but also for society at large. This workshop equips students with the skills to troubleshoot, upgrade, and assemble computer systems, which are invaluable in various societal contexts. Additionally, by fostering an understanding of hardware components, the workshop promotes responsible use of technology and encourages students to consider the societal implications of their engineering decisions, such as environmental impact and accessibility. **P12 - Lifelong Learning**: The workshop on hardware familiarization and PC assembly promotes lifelong learning by instilling a curiosity-driven approach to technology. By engaging with hands-on activities and problem-solving challenges, students develop a mindset of continuous improvement and exploration. Additionally, the workshop encourages students to seek out new knowledge and skills independently, whether through further experimentation with computer hardware or through ongoing professional development in the field of engineering. Ultimately, the workshop fosters a culture of lifelong learning that empowers students to adapt to technological advancements and evolving engineering practices throughout their careers.
17	**Whether feedback forms**	Yes

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	from audience and resource person is collected?	
18	**Whether analysis of feedback is done? Use separate sheet to indicate the same**	Yes
19	**Attainment level of outcomes**	-
20	**Name of the resource person**	Mr. Nishanth KP, Ms, Anusha M, Ms. AnamikaSureshbabu,,Mr. Rohith M
21	**Designation of the resource person(s)**	Technical lab staff
22	**Any other relevant information**	-
23	**Name of the event coordinator(s)**	Mrs.Thulasibai A, Ms. Nimisha MK, Mrs. Kripa PV
24	**Dated signature of the coordinator(s)**	15/3/'24

II. TO BE FILLED BY THE DEPARTMENTHOD(any one of the HoD, in case if the event is jointly conducted by various department(s))

List of enclosures – To be maintained in the file

Sl No:	ITEM	AVAILABILITY [YES / NO]
	5 day workshop f	
1	**Posters**	✓
2	**Schedule of the event**	
3	**Registration form sample copy**	
4	**All registration forms duly filled and signed**	✓
5	**Profile of the resource person(s)**	
6	**Feedback forms filled by participants and resource person**	✓
7	**Feedback analysis sheet**	✓
8	**CO attainment calculation sheet**	
9	**Study Materials (if any)**	✓
10	**Letters or printouts of e-mail communication relevant to the event**	
11	**Documents related to professional body associated with the event**	
12	**Photographs of the event**	

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1	**Comments about the conduct of the event**	Found it more useful
2	**Comments about the resource person and impact of the event**	—
3	**Name**	S Sundeep
4	**Dated Signature**	

COMMENTS FROM PRINCIPAL

—

DATED SIGNATURE OF THE PRINCIPAL:

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Hardware & Software

Hardware

All of the electronic and mechanical equipment in a computer is called the hardware. Examples include:

- **Motherboard**
- **Hard disk**
- **RAM**
- **Power supply**
- **Processor**
- **Case**
- **Monitor**
- **Keyboard**
- **Mouse**

Hardware & Software

Software

The term software is used to describe computer programs that perform a task or tasks on a computer system. Software can be grouped as follows:

- System software - Operating System etc.
- Utility programs - Antivirus etc.
- Applications Software - Word, SolidWorks etc.

PC Components

Computer system - collection of electronic and mechanical devices operating as a unit. The main parts are:

1. System unit
2. Monitor
3. Keyboard
4. Mouse
5. Speakers

System Unit

The **system unit** is the main container for system devices. It protects the delicate electronic and mechanical devices from damage. Typical system unit devices include:

- Motherboard
- CPU (Processor)
- Memory
- Disk drives
- Ports - USB etc.
- Power supply
- Expansion cards - sound card, network card, graphics card etc.

Peripherals

Peripherals are devices that connect to the system unit using cables or wireless technologies. Typical peripherals include:

- Monitor
- Keyboard
- Printer
- Plotter
- Scanner
- Speakers

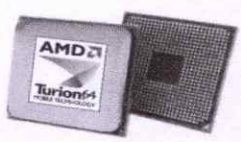
Plotter

System Devices

Processor

An **integrated circuit** (IC) supplied on a single silicon chip. It's function is to control all the computers functions. The main processor manufacturers are:

- **AMD** - Athlon and Turion (mobile)
- **Intel** - Pentium and Centrino (mobile)



AMD Processor

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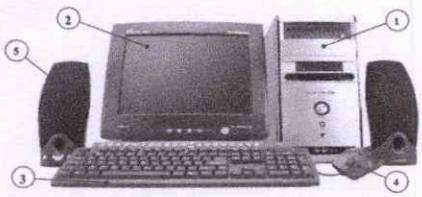

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System Devices

Computer program - a series of instructions. When a program is run, the processor carries out these instructions in an orderly fashion. Typical instructions include:

- **Arithmetic** - addition, subtraction etc
- **Logical** - comparing data and acting according to the result
- **Move** - move data from place to place within the computer system - memory to the processor for addition - memory to a printer or disk drive etc.

System Devices

Processor speed - measured in megahertz (**MHz**) or Gigahertz (**GHz**) - the speed of the system clock (**clock speed**) within the processor and it controls how fast instructions are executed:

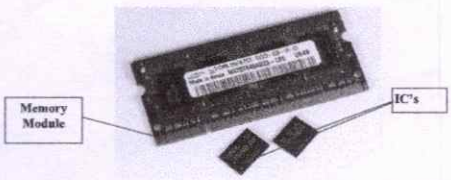
- 1 MHz - 1 **million** clock ticks every second
- 1 GHz - 1 **billion** clock ticks every second

Latest trend - **multi-core** processors can have two, three or four processor cores on a single chip.

System Devices

Random Access Memory (RAM)

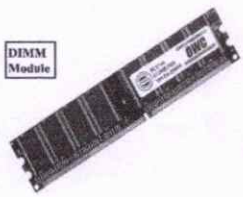
- **Primary storage** - main computer memory. Data, programs currently in use are held in RAM
- **Volatile** - contents of memory are lost if the computer is turned off
- **Module** - memory IC's on a circuit board



System Devices

Memory is sold in modules:

- **DIMM's** (dual inline memory module) for desktop computers
- **SODIMM's** (small outline dual inline memory module) for notebook computers.

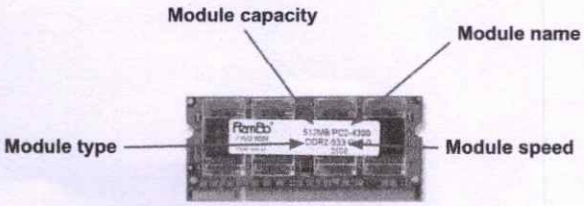


System Devices

DIMM's and SODIMM's are available in modules of 256MB, 512MB, 1GB, 2GB

The current technology is called **DDR** (double data ram) and there are three types: DDR1, DDR2, DDR3

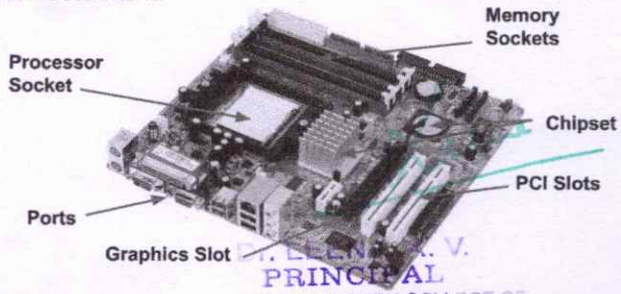
Any particular computer system is only compatible with one type.



System Devices

Motherboard

Mainboard or **system board** - the main circuit board for the computer system. All device in the computer system will either be part of the motherboard or connected to it.



System Devices

Processor socket - different processors require different sockets and a motherboard must be chosen to suit the processor intended for use:

- **Socket 478** - Intel Pentium IV
- **Socket 775** - Intel Dual Core and Core Duo
- **Socket 754** - AMD Athlon
- **Socket 939** - AMD Athlon 64
- **Socket AM2** - AMD Athlon X2

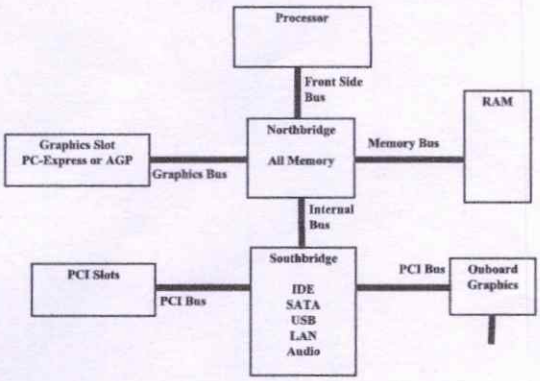
System Devices

Chipset - controls data flow around the computer. It consists of two chips:

- **Northbridge** - data flow between memory and processor - data flow between the processor and the graphic's card
- **Southbridge** - controls data flow to the devices - USB, IDE, SATA, LAN and Audio - controls PCI slots and onboard graphics

System Devices

Buses - a path through which data can be sent to the different parts of the computer system. Main buses:



System Devices

Power Supply

A computer power supply has a number of functions:

- Converts **Alternating current** (AC) **Direct current** (DC)
- Transforms mains voltage (240 Volts) to the voltages required by the computer. The main voltages are:
  - **12 volts** for the disk drives as they have motors
  - **3.3** and **5 volts** for the circuit boards in the computer

System Devices

- Uses advances power management (**APM**) to allow the computer go into a standby mode
- Some have a switch to toggle between 240 volt supplies and 110 volt supplies.
- The main connections are:

1	Main connector	Connects to the motherboard and supplies the 3.3 and 5 volt supply for the board.
2	Molex connector	Connects IDE hard drives and optical drives.
3	Berg connector	Connects floppy disk drives
4	SATA connector	Connects SATA drives

System Devices

Ports

Computer ports are interfaces between peripheral devices and the computer. They are mainly found at the back of the computer but are often also built into the front of the computer chassis for easy access.

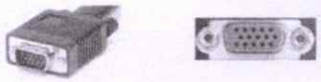
System Devices

- **Serial port** - a 9-pin port. Often called Com ports - Com1, Com2 etc. Mice and external modems were connected to these ports. They are **turquoise** in colour.

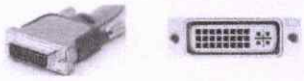
- **Parallel port** - a 25-pin port used to connect printers, scanners, external hard disks, zip drives etc. to the computer. **Burgundy** in colour, they are often called LPT ports - LPT1, LPT2 etc.

System Devices

- **Video port** - used to connect a monitor to the computer system. There are two types:
  - **VGA port** - This is a 15-pin port and is **blue** in colour. It is an analogue port and is being replaced by the DVI port.



  - **DVI port** - **white** in colour, it is a digital port. This means that no conversion is necessary between the computer and the monitor and that means that images can be produced more quickly on the monitor



System Devices

- **PS/2 port** - used to connect keyboards and mice to the computer. The keyboard port is **purple** and the mouse port is **green**

- **Modem port** - used to connect a modem to a telephone line. **RJ11** is the technical term for the port.

System Devices

- **USB port** - intended to replace Serial, Parallel and PS/2 ports with a single standard. 127 devices can be connected to a single USB port. **Hot swappable** - devices can be connected and disconnected while the computer is on

There are different USB standards in use:

- **USB 1** - original standard - transfer data of **1.5MBps**.
- **USB 2** - current standard - transfer rate of **60MBps**.
- **USB3** - future standard (2009) transfer rate of **600MBps**.

System Devices

- **FireWire port** - (IEEE 1394) is an Apple technology There are two versions available and a third is planned:

- **FW 400** - transfer rate of **50MBps**.
- **FW 800** - transfer rate of **100MBps**.
- **FW S3200** - transfer rate of **400MBps**.

- USB devices must be connected to a host computer while FireWire devices can be connected to each other without using a computer.

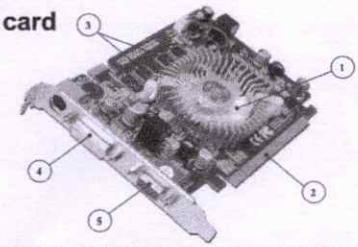
System Devices

- **Ethernet port** - used to connect to a network. Known as **RJ45**, it is larger than a modem port.

- **Audio ports** - used to input and output audio from the computer. Three mini jack ports but there may be more:
  - **Light blue** - Line in - connect external devices
  - **Lime** - Connect the speakers to this port.
  - **Pink** - Connect a microphone to this port.

System Devices

Graphics card



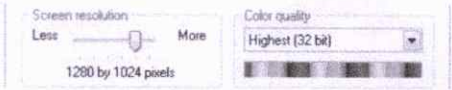
1	Processor and fan	Graphics card handles it's own processing making it almost independent of the processor.
2	Board connector	AGP or PCI-Express
3	Memory	Graphics card has it's own memory. This makes it much faster. Most new cards use DDR3 memory.
4	DVI connector	Digital output is supplied through this port.
5	VGA connector	Analogue output is provided through this port.

System Devices

Graphic card - screen images are made up of dots called **pixels** (picture elements). The graphics card must process each of these pixels to create the image.

The resolution of a screen is the number of pixels being displayed. Typical resolutions include:

- **800 x 600** - 480,000 pixels
- **1024 x 768** - 786,432 pixels
- **1280 x 1024**: - 1,310,720 pixels
- **1600 x 1200**: - 1,920,000 pixels



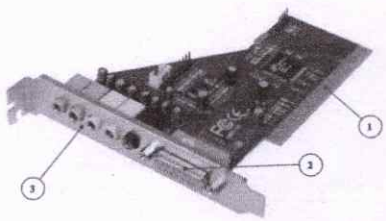
System Devices

There are two types of graphic card available:

- **AGP** (accelerated graphics port) - the older technology but still available. It can output in analogue or digital or both.
- **PCI-Express** - the newer technology - faster than AGP. Allows for two graphics cards to improve the performance - called **Scalable Link Interface** (SLI). PCI-Express can also output in analogue or digital or both.
- These cards are mutually exclusive and the choice is made according to the graphics slot on the motherboard.

System Devices

Sound card



1	PCI connector	Connects the sound card to a PCI slot
2	MIDI socket	Musical Instrument Digital Interface port is used to connect digital musical instruments to the computer.
3	Audio jacks	These are used to connect microphones, speakers, stereo systems etc to the computer.

System Devices

The main functions of a sound card are:

- To use a **DAC** (digital to analogue converter) to prepare audio for speakers etc.
- To use an **ADC** (analogue to digital converter) to convert the audio coming into the computer.

A sound card can be connected to the following:

- Analogue input devices - Microphone, Radio, Tape deck, Record player etc
- Headphones and speakers
- Output to tape etc.

System Devices

Network card

- allows computers join a network. Can be wired or wireless. The standard used is called **Ethernet** - covers wired and wireless networks.

The wired standards include:

- **Fast Ethernet** - transmission speed of **100Mbps**.
- **Gigabyte Ethernet** - transmission speed of **1000Mbps**.

System Devices

The wireless standards include:

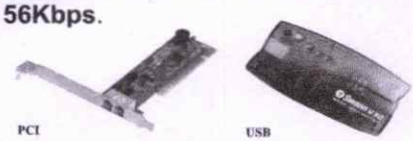
- **The B standard** - introduced in 1999, it has a transmission rate of **11Mbps** and a range of **30 Metres**.
- **The G standard** - introduced in 2003, it has a transmission rate of **54Mbps** and a range of **30 Metres**.
- **The N standard** - introduced in 2006, it has a transmission speed of **540Mbps** and a range of **50 metres**.

System Devices

Modem

- Internet access using a telephone line.
- Converts the digital computer data to analogue (**Mo**dulation) before transmission over the telephone line and converts the analogue data to digital (**DEM**odulation) before transmission to the computer. The device gets it's name from these two terms.

- The standard transmission speed of a modem is **56Kbps**.



System Devices

Hard Disk

- **Primary storage** (memory) - volatile - contents lost when power is turned off.

- **Secondary storage** (disk drives) - non-volatile - can store files when power is turned off.

- In memory, voltages are used to store data as binary 1's and binary 0's. It was decided to mimic the situation for secondary storage using **magnetism** instead of electrical voltages to represent the binary data.

System Devices

- A metal disk (**platter**) is coated with tiny iron particles which can be magnetised to **north** and **south** to represent the binary digits 0 and 1.

- A **read-write head** is used to magnetise the particles on the disk surface to represent the data held in RAM. The computer can now be switched off and a copy of the data is safe for later use.

System Devices

Hard disks can be **internal** or **external**. The internal standards are:

- **IDE** (Integrated Drive Electronics). The disks connect to the motherboard using a ribbon cable. Each cable can hold two drives - **master** and **slave**. The drive is set as master or slave by positioning a **jumper** switch on the back of the drive. There are two IDE connectors and a total of four drives can be connected.

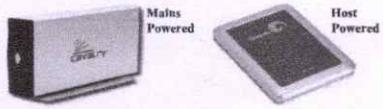
System Devices

- **SATA** (Serial Advanced Technology Attachment) allow faster data transfer speeds than IDE. There is no master/slave arrangement with SATA and each drive has it's own cable. The cables are much smaller and allow better air circulation in the system unit.

Motherboard connectors

System Devices

External hard disk drives can be IDE or SATA and can be **mains powered** or **host powered**. Host powered drives receive their power from the USB port.



Hard disk drives are also now found in video recorders, digital music players, digital camcorders, digital cameras and mobile phones.

System Devices

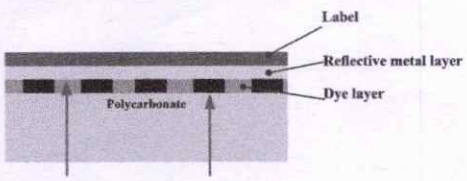
Optical drives

- Optical drives use lasers to sense **pits** and **lands** mechanically pressed into a polycarbonate disk. These pits and lands represent the binary 0's and 1's and so can store computer data.
- A thin layer of metal reflect the laser light. As the disk rotates, the laser senses the pits and lands and reads the data from the disk. The laser only operates at a **single intensity** as it only scans the surface of the disk to detect the pits and lands.

System Devices

CD-R (blank CD's) use a dye layer to mimic the lands and pits created mechanically on commercial disks.

- The laser used has **two intensities**.
- At the **high setting**, it burns spots on the dye layer changing it from transparent to opaque. This allows data to be written as spots of transparency and opacity.
- At the low setting, it reads these differences



System Devices

The CD-RW (re-writable) disk is similar but the laser has **three intensities**. The third and highest is needed to turn the burned areas of the dye layer back to their original condition. The dye layer can now be re-burned to hold new data.

The three laser intensities are:

- **Intensity 1** - Read data
- **Intensity 2** - Burn data
- **Intensity 3** - Erase data

The CD-R disk has a capacity of 650MB to 800MB.

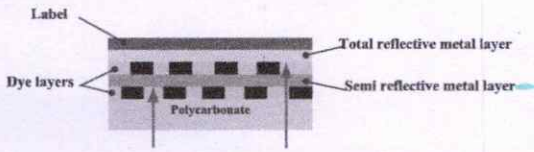
System Devices

DVD's hold a lot more data than CD's. They can have several layers, each holding **4.7GB** of data.

The possibilities are:

Number of sides	1	1	2	2
Number of layers	1	2	1	2
Disk capacity	4.7GB	8.5GB	9.4GB	17GB

Dual layer disks have two reflective layers, one which can be penetrated at a certain intensity



System Devices

DVD Formats

1	DVD-ROM	Read only. Mechanically stamped and manufactured as single or double layer and as single sided or double sided.
2	DVD-R	Single or dual layer disks and can be single or double sided. They can be written to only once.
3	DVD-RW	Same as DVD-R but can be written to several times.
4	DVD+R	These are single or dual layer disks and can be single or double sided. They can be written to only once.
5	DVD+RW	These are the same as DVD+R only that they can be written to several times.

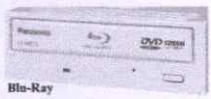
DVD-R and DVD+R are incompatible with each other. Manufacturers have produced **DVD±R** drives capable of reading and writing to both standards.

System Devices

A number of new high capacity formats have come onto the market.

These are:

1	HD-DVD	Uses a new laser technology resulting in layer of 15GB instead of the 4.7GB on standard DVD. This gives a total capacity of a double sided - double layered disk as 60GB.
2	Blu-Ray	Higher capacity than HD-DVD - 25GB of data/layer. A dual layer disk can hold 50GB. Technically, a double sided and double layered disk can hold 100GB of data.


Blu-Ray


HD-DVD

System Devices

Card readers

Replaces floppy drives in new computers. They can read media cards from most digital cameras:

- **Microdrive**:
- **Smartmedia**:
- **SD memory card**:
- **Memory stick/Duo/Pro**:
- **xD picture card**:


Card reader drive

System Devices

Monitors

A computer monitor displays images generated by the graphics card.

Monitors are almost exclusively **LCD** (Liquid Crystal Display). **CRT** (Cathode Ray Tube) monitors are rare and are now as expensive as LCD monitors.


19 inch Widescreen LCD

System Devices

The **aspect ratio** of a computer monitor is the ratio between the width and height of the screen. The aspect ratios are:

- **Standard monitor** - 4:3
- **Widescreen monitor** - 16:9

Most LCD monitors offer a **VGA** and a **DVI** connection. The VGA connector is used for analogue signals and the DVI connector is used for digital. As the computer is a digital machine, it is best if no conversion is required and so the best option is the DVI connection.


DVI


VGA

System Devices

Resolution

Standard monitor

- **XGA** (Extended Graphics Array) - **1024 x 768**
- **SXGA** (Super Extended Graphics Array) - **1280 x 1024**
- **UXGA** (Ultra Extended Graphics Array) - **1600 x 1200**
- **QXGA** (Quad Extended Graphics Array) - **2048 x 1536**

Widescreen

- **WXGA** (Wide XGA) - **1280 x 800**
- **WSXGA** (Wide SXGA) - **1680 x 1050**
- **WUXGA** (Wide UXGA) - **1920 x 1200**

LCD monitors - **native resolution** at which the image is crisp. Other resolutions are possible but the image quality decreases.

System Devices

Keyboard

Primary input device - divided into sections:

- **Typing keys** - contains the letter and number keys, shift keys, spacebar, return key etc.
- **Numeric keypad** - These keys are arranged as on a calculator.
- **Function keys** - programmable keys used by software for special functions. E.g. - F1 - Help.
- **Control keys** - screen and cursor control.

System Devices

- Most common arrangement is called **QWERTY** after the first six keys.
- Other arrangements are available including **Dvorak**, **ABCDEF**, **AZERTY** etc.

QWERTY

Dvorak

System Devices

Keyboards are available wired or wireless:

- **Wired** - These are either **PS/2** or **USB**.
- **Wireless** - The keyboard uses batteries.

Wireless keyboard

Rubber keyboard - useful for use with notebook computers. Leaves users less prone to **RSI** (Repetitive Strain Injury)

System Devices

Mouse

Input device - uses point and click technology

There are two main types:

- **Ball mouse** - uses a ball to roll across the surface and move rollers attached to sensors inside the mouse - reflecting the ball movement as cursor movement.
- **Optical mouse** - camera takes thousands of images per second and sends them for digital processing. The red LED lights up the surface for the camera.

Optical mouse

Ball mouse

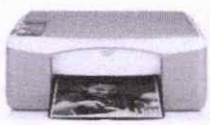
System Devices

Printers

Output devices - produce a **hardcopy** (permanent and readable) of computer data. The can print onto paper, transparency, photographic paper, card etc.

There are two main technologies involved:

- **Inkjet (Bubble-jet)**
- **Laser**

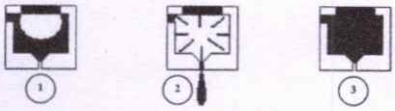


Laser

System Devices

- **Inkjet** - uses an electric charge to vibrate a membrane. When the membrane flexes downwards, it ejects an ink droplet through the nozzle (**1**). When it flexes upwards, it draws more ink into the reservoir (**2**).

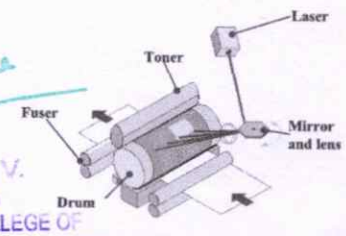
- **Bubblejet** - a heating element locally heats ink to form a bubble (**1**). As the bubble expands, it forces ink through the nozzle (**2**). When it bursts, it causes a vacuum which draws ink into the reservoir (**3**).



System Devices

Laser printers use **toner** (powdered ink) instead of liquid ink as in inkjet printers.

- Laser printers produce images using dots. The image is created using a **laser beam** and a **mirror -lens** arrangement on a **drum** coated with magnetically charged **toner** and then transferred from the drum to the paper. The paper is then fed through a heated **fuser** which fuses the toner to the paper as ink.



System Devices

Printers are available as **A4**, **A3** and even **A2**, but if larger drawings and images are required, a plotter is more suitable.

Plotters use inkjet technology and are available in **A3**, **A2**, **A1** and **A0**. They take up much less space than an equivalent inkjet or laser, bur are more expensive.

Plotter

System Devices

Computer Specification

- Intel Core Duo Processor - 2.66MHz 64-Bit CPU, 128 KB L1 cache, 4MB L2 Cache, 1333MHz FSB
- Windows Vista Business
- 4GB DDR2 Memory - 667MHz
- 500GB SATA HDD 10,000rpm
- 256MB DDR2 NVIDIA PCI-Express Graphics
- 19" Widescreen LCD - 0.22mm Dot Pitch, Res -1490 x 900
- 7:1 Surround Sound Inc. Woofer
- PCI-E Mainboard - nForce SLI, Micro ATX
- 6 x USB2 Ports - 2 Front
- 2 x 1394 Ports - 1 Front
- Broadcom GB LAN Network Connection
- Multi Card Reader
- 18X SATA Dual Format Dual Layer DVDRW Drive
- 550W Power Supply
- Logitech Wireless Internet Keyboard and Wireless Optical Mouse

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Branch

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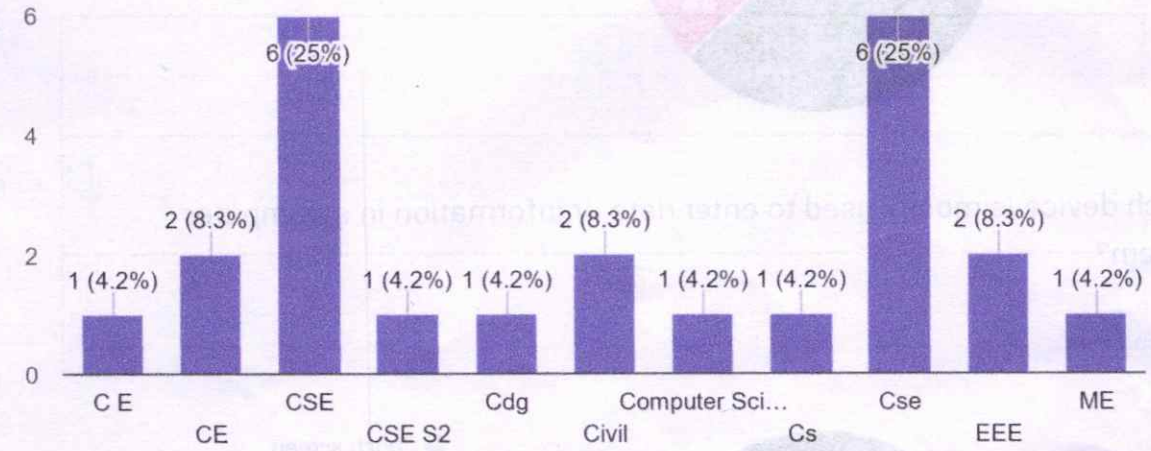
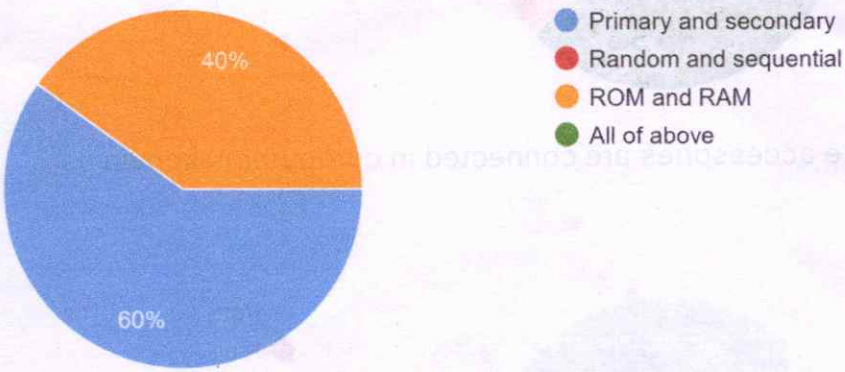
24 responses



The two kinds of main memory are:

Copy

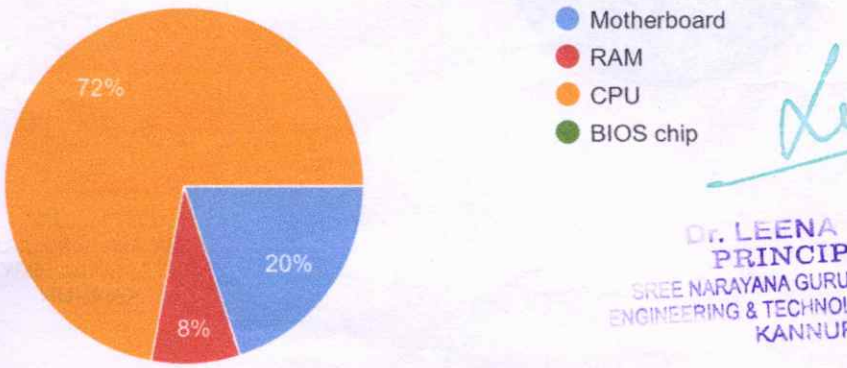
25 responses



Which of the following is considered as the brain of the computer?

Copy

25 responses



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Which of the following is not hardware?

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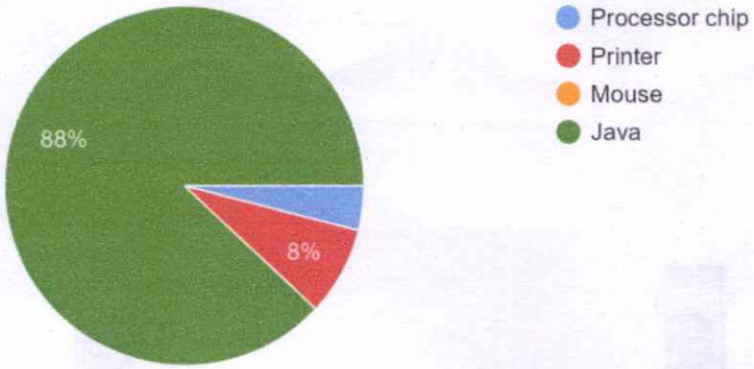
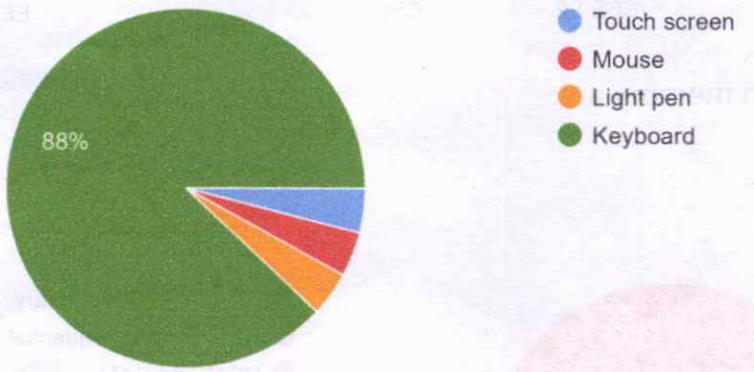
25 responses



Which device is mostly used to enter data or information in a computer system?

Copy

25 responses



The place where accessories are connected in computer is known as

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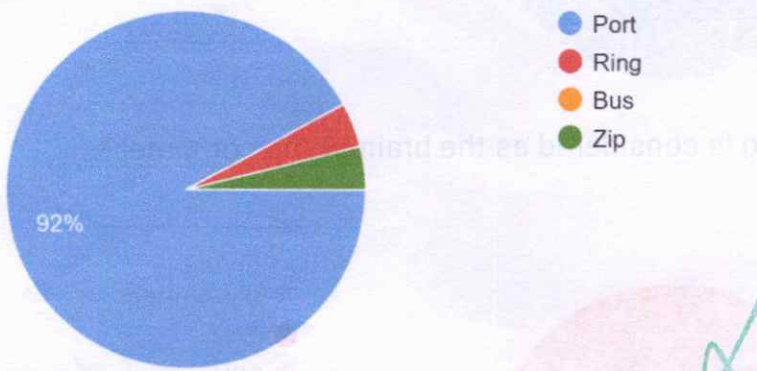
25 responses



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Hardware includes ?

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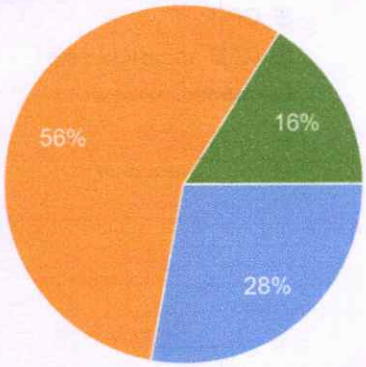

- all devices used to input data into a computer
- sets of instructions that a computer runs or executes
- the computer and all the devices connected to it that are used to input and output data
- all devices involved processing information including the central processing unit, memory, and...

Any physical components of a computer system that we can see and touch is

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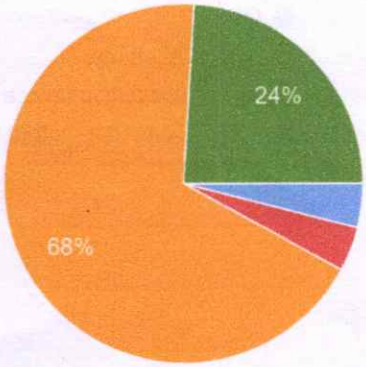

- Software
- Peripheral device
- hardware
- CPU

The system unit that contains the most vital part of the personal computer is called

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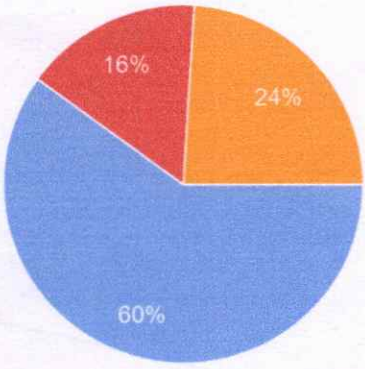

- CPU
- BIOS chip
- Motherboard
- Monitor

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A motherboard consists of

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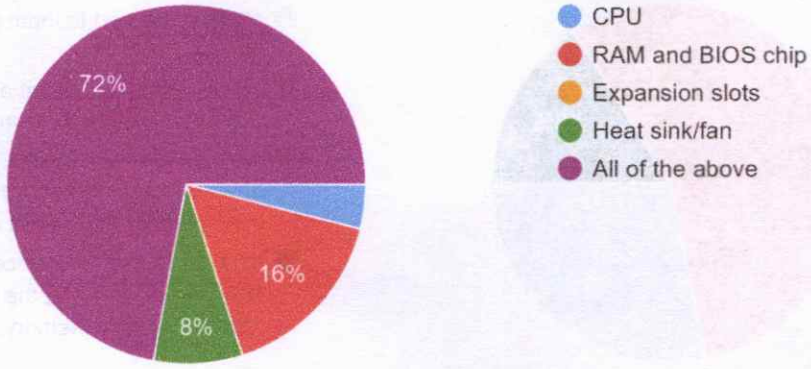

Which of the following is not an input device?

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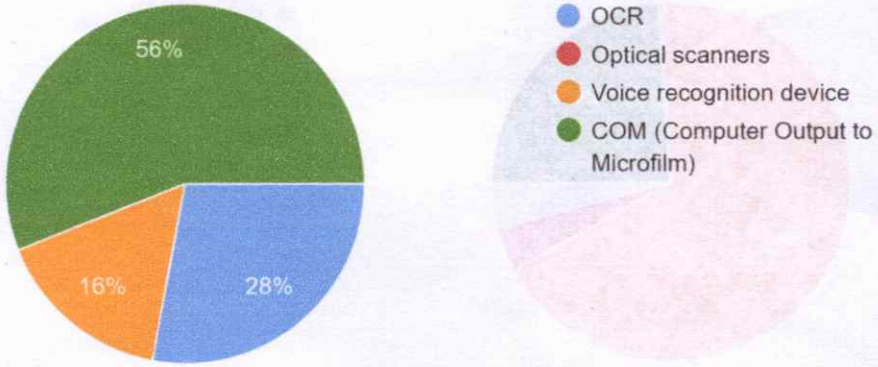
25 responses



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Explain the difference between system software and application software.

25 responses

Agju-

Dhfh

Fhh

System software consists of inbuilt softwares and application software consists of external download packages

System software contains inbuilt software and application software contains external

System software -without system software computer can't run .but without application software system can run

System software coordinate operations within a computer. Application software is an outward source which helps to coordinate computer.

System software- bios. Application software - java. system software enables the cpu to connect all the hardware devices to the computer.

Software is the build for the whole computer but application software is only build for specific application

It

System software is a the main component that is used to run a computer .application software is not an important one it is used while we need any other application to edit or something eh: excel etc

System software refers to program desiged to manage and control the hardware and provide a platform for running application software

System software helps other software to run, while application software performs specific tasks for the user, so both are software for computer.

simple terms, system software keeps your computer running, while application software helps you do specific tasks on your computer.

System software helps to run the computer. Application sostware specific need or perform task

the system software is required for the smooth operation of the system and for running other applications on the system and for application software its is an additional software added according to users preferences

System software -General purpose software, Application Software Specific purpose software

System software is a computer program which is used in Hardware is used to

System software is a software which is in the device. The system cannot run without system software and the application software means we are downloading the software .The system will run without application software system software is faster than application software eg:Java,c++ and the eg for application software is Microsoft.system software is SRAM and application software is DRAM

Software is the parts that used for function application software is used for applicational programs and functions

System software is the software which is used by the computer to run ,Applications- it is the software that is installed from an external source and can be run on a computer

Without system software system cannot be work without application software system will work

It is a type of program

System software is used to run the computer and application software is used to run the application

System software acts as the backbone of a computer system, managing hardware resources and providing a platform for running other software. This includes operating systems like Windows, macOS, and Linux, along with utility programs such as device drivers and system utilities. Application software, on the other hand, is designed to perform specific tasks or fulfill particular user needs. Examples include word processors, web browsers, games, and productivity tools. Unlike system software, which focuses on managing the computer's operation, application software serves to accomplish user-defined functions, like creating documents, browsing the internet, or editing images.

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What are the main components of a computer system?

25 responses

Dhff

Turhv

Vg

Monitor,cpu,ups,keyboard,mouse

CPU moniter keyboard mouse speakers ups

Input unit , output unit, and storage unit

Mouse, keyboard, cpu, ups, printer, monitor

Input devices, cpu, ram,rom,motherboard, monitor, keyboard.

CPU, MOUSE, KEYBOARD, MOTHERBOARD

CPU ,monitor, motherboard, keyboard,mouse.etc

Monitor ,cpu,ram ,rom ,mouse,keyboard,motherboard etc.

Cpu, memory, storage device , motherboard, input device , output device , power supply, expansion card

Motherboard,Central Processing Unit (CPU) ... Graphical Processing Unit (GPU),Random Access Memory (RAM), Storage device, mouse, keyboard

Hardware components and software components

Motherboard, cpu, ram,Alu, storage device,

the processor chip and the motherboard which comes with various components

CPU, Storage Device, RAM, Input/Output Devices

Software, Hardware, CPU,

Monitor,CPU,Mouse

CPU, Motherboard, keyboard,mouse, processor,monitor

Input and output devices with software to basically run a computer

Cpu, motherboard, storage device

Mother board, CPU,RAM

Keyboard mouse cpu printer scanner etc

Input devices,cpu,output devices, storage devices,motherboard,operating system,peripheral devices

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Explain the difference between hardware and software.

25 responses

Gudf

Fhdeh

Vg hh

Hardware is the physical part we can touch and software is the virtual part used for logical operations

Hardware is an input device Software is an output device

Hardware - it is the part of computer that we can touch and feel .it includes the computer and all the devices connected to it that are used to input and output data. Software -it is installed in a computer.we cannot touch and feel.it is prone to viruses

Hardware are components that can be see and operate computer from outside.software devices control and operate the system from inside the computer.

Hardware isa phycial part of the computer which we can touch. Software help us to use hardware in a desired way. Hardware cant be easily replaced whereas software can be easily replaced

Hardware is physical component that can touch or see, software is inbuild cant see or touch

Hardware is the physical part of a computer . Software is the set of instructions given to the computer.

Hardware is the external components and software is internal component hardware can and software we cannot touch or see .

Hardware refers to the physical components of a computer system that you can see and touch software on other hand refers to the non physical components of a computer system

Hard ware is devices physical but software are programss

Hardware is the parts of the computer to perform a function where as software determines how to perform the function

Hardware include monitor, keyboard, inside devices. Software include outside objects

hardware is the one which we connect to the system which helps in input or output of datas

Software -Virus prone , Hardware No virus attack

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Hardware is a physical component, software is a non physical component

Hardware is the physical part of the computer and software is a program

Hardware we can use in physicaly like monitor, keyboard etc

Hardware- It is the physical components of computer .Software - it is the sets of instructions that a computer runs or executes

Any physical components of a computer that we can see and touch called hardware and software can't touch it will installed in system

Hardware is physical and we can see and touch. Software is not physical it is not touchable and seeable

Hardware is the external part or the part which we can see and touch and software is the internal part which we cannot see physically

Hardware comprises the tangible components of a computer system, including the CPU, memory, storage devices, input and output devices, and peripherals. Conversely, software consists of intangible programs and instructions, such as operating systems, application software, and system software, which control and operate the hardware. Together, hardware and software collaborate to enable computers to execute tasks and functions.

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What is the function of the motherboard in a computer?

25 responses

Vhgf

Qwe

Hj

It consists of every action and performs as brain of the computer

It is the main part of the computer which helps in performance of the system

It consists of the main parts of a computer .it includes CPU RAM and BIOS chip Expansion slots Heat sink/fan

To operate all functions that take place inside the computer

Motherboard connects all of the hardware rogether. All hardware are connected to it. Cpu which processes the data is also present in the motherboard. In a pc where thereis no external graphics card, hdmi is connected from monitor to motherboard to get output from integrated graphics of cpu.

It stors the chipset and help in processing

Which controls all other units of a computer.

Motherboard is the main part that fix all other components that a computer need to operate .

The motherboard refers as a main circuit board of a computer ant it plays several crucial function

It act as a main part of a cpu and its used to connect devices like ram chip etc, it also allows to provide power to each device that are connected

The function of motherboard is a to provide a physical platform to connect Ram CPU etc

Motherboard helps to connect all the parts that require to

the motherboard function is to ensure the proper working of the total system from giving power to connecting all the system together

Main circuit in a computer

Motherboard act as power System of computer

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It provides the instructions.where Ram and rom where connected memories were stored

Function of a motherboard that operate the whole function

It consists of all components which is necessary to run a computer

All were connected with motherboard

It is the backbone of the computer

To operate and run the system

The motherboard is the backbone of a computer system, providing essential functions such as connecting hardware components, facilitating data transfer, distributing power, hosting firmware interfaces like BIOS or UEFI, offering expansion slots for additional components, and generating clock signals for proper coordination. It serves as the central hub that enables seamless communication and coordination between different hardware elements, ensuring the smooth operation of the entire computer system.

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What is an operating system, and why is it necessary?

25 responses

Gggh

Hcc

Hh

OS used to run software and offers packages to install

Operating system help us to get better performance

It is needed to operate a computer.

Operating system helps to coordinate functions of computer and helps to operate things that takes place inside computer very well.

Its an software that enables the user to interact with the computers hardware. For example it allow us to modify data of ssd etc

Operating system is the symbol used for representation of mathematical, logical and conditional things

No

To operate a computer it is necessary

An operating system is a software programs that manage computer

Most importend software, it manges computera memory and processor. It also allows to communicate with the computer with out knowing the coding language

Operating system provide a user interface to the user to perform certain functions easily and convineanently

Operating systems helps to opeate the computer. It controls the system of computer in specific manner

OS is the software that is required for a system to ensure proper working of other applications and the system itself

Operation system is a used to manage the hardware resources

Operating system is a main part in computer

Operating system which used to perform a specific programs

Operating system that is the part of computer that is used for computer operations

Operating system is that software used by the computer to run its internal operations and processes

To operate computer

It is the collection of set of program

An operating system is an interface between computer user and computer hardware . It is necessary as it allows us to communicate in the computers language

The operating system (OS) serves as a crucial intermediary between users and computer hardware, managing hardware resources, providing essential services, and enabling communication between software applications and hardware components. Its key functions include resource management, process management, memory management, and file system management. These functionalities ensure efficient utilization of hardware resources, smooth execution of software programs, optimal allocation of memory space, and effective organization of files and directories on storage devices. Overall, the operating system plays a fundamental role in the operation and usability of computer systems.

Session was useful and well organized

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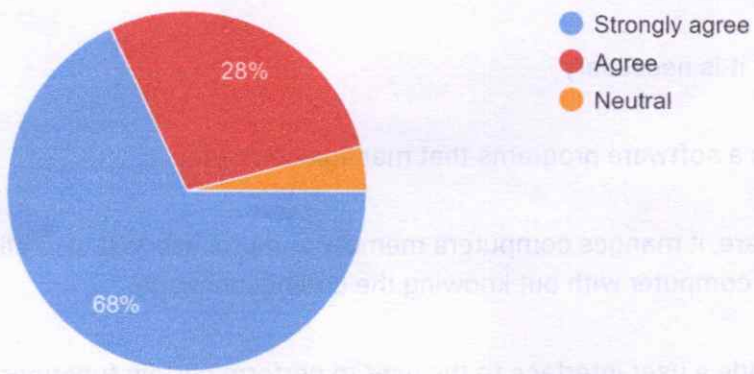

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Information imparted in the program

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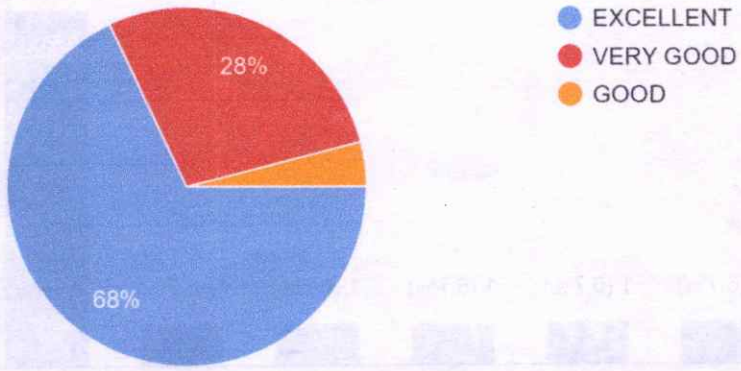

Usefulness of Course Contents in practical use.

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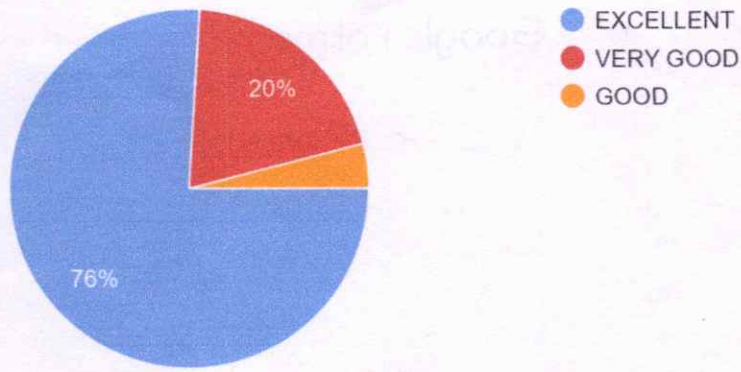

Knowledge about the subject :Ms.Anusha M & Ms.Anamika sureshbabu

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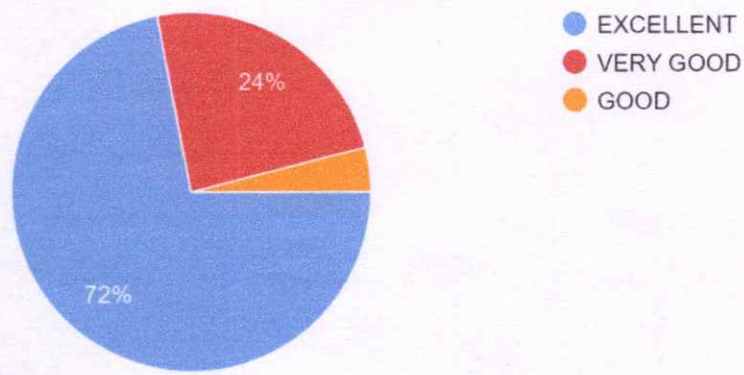

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ANY SUGGESTIONS

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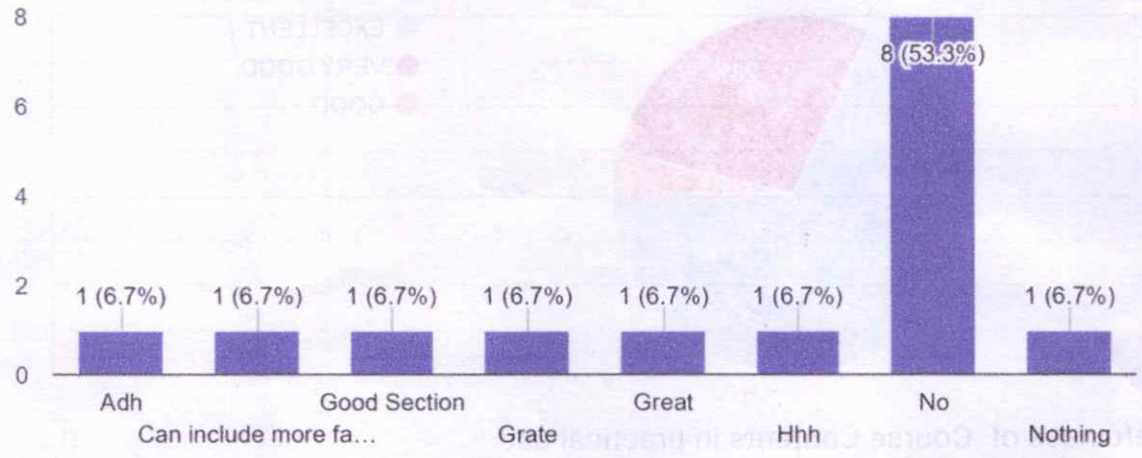

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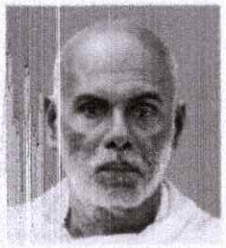

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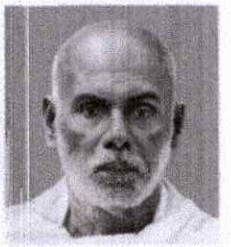

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