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The functioning of a computer relies on a seamless interaction between input and output devices. These devices serve as the communication bridge between the user and the computer system. Input devices, such as a keyboard or mouse, allow users to send instructions or data to the computer, while output devices, like monitors or printers, provide feedback or results of the computer's processes.In this article, we will explore different input and output devices of the computer, their types, and their functions, along with detailed examples as computer skills are the basic requirements in todays world. Additionally, sample questions and notes are provided to help you deepen your understanding of this important topic.What are Input and Output Devices?To understand how a computer operates, its essential to know the role of input and output devices. These devices are crucial for enabling communication between users and the computer system.Input Devices Definition: Input devices are hardware components that allow users to enter data or instructions into a computer. Examples include keyboards, mice, scanners, and microphones.Output Devices Definition: Output devices are hardware components that display or deliver the results of processed data in a human-readable form. Examples include monitors, printers, speakers, and projectors. Looking for more resources to enhance your Computer Awareness?Explore the links below to stay updated on key terms and applications related to computers:Input and Output Devices ListBelow is a detailed input and output devices list, starting with the most common input devices. Each device plays a crucial role in enabling communication between users and the computer. Check out the Input devices listed below:KeyboardA primary input device used in almost every computer system.Composed of keys representing alphabets, numbers, and commands to input data or perform actions.Functions as a modified version of typewriter keys and is essential for both desktops and laptops.MouseKnown as a pointing device, the mouse is an integral part of the input and output devices of the computer.Enables users to click on icons, open files, and navigate the system efficiently.Typically includes three buttons and a trackball for movement, while laptops often use a touchpad as a replacement.JoystickA control stick is attached at an angle to its base, commonly used for video games.Apart from gaming, it is widely used in aircraft cockpits, wheelchairs, cranes, and other machinery for precision control.Light PenA light-sensitive device resembling a wand that interacts directly with the computer screen.Primarily used alongside cathode ray tube (CRT) monitors for drawing or selecting objects on the screen.MicrophoneConverts sound into an electrical signal and stores it in digital format.Requires an amplifier to record or reproduce sound effectively.Essential for voice input and multimedia applications.ScannerScans text or images and converts them into digital format for display on the computer screen.Allows physical documents to be digitised for editing or sharing electronically.Barcode ReaderAn optical scanning device that reads barcodes using a beam of light.Displays the details of the barcode on the computer screen, making it widely used in retail and inventory management.Optical Mark Reader (OMR)An Optical marker reader is a specialised device commonly used in educational institutions to evaluate answers in objective exams. It identifies marks made with a pencil or pen, providing accurate and efficient results.Optical Character Reader (OCR)OCR, or Optical Character Recognition, is a device designed to read printed text. It scans the text optically, converts it character by character into machine-readable code, and saves it in the system's memory for further processing.Magnetic Ink Character Reader (MICR)A Magnetic Ink Character Reader is primarily used in banks to process cheques provided by customers. It reads the magnetic ink used for printing code numbers and cheque numbers. This device offers a much faster and more reliable process compared to manual methods.List of Output DevicesBelow is a detailed input and output devices list, focusing on commonly used output devices, their functions, and examples. These devices are essential for displaying or delivering the results of computer processes.MonitorA monitor is a primary output device that displays icons, text, images, and videos on a screen.It shows the results of actions performed by the computer in a user-readable format.Over the years, various types of monitors, such as LED, LCD, and OLED, have been developed to enhance display quality.PrinterA printer is an output device used to create physical copies of digital content, typically on paper.For example, an author types a manuscript on a computer and then prints it out for publishing.Different types of printers, like inkjet, laser, and 3D printers, are available to cater to diverse needs.SpeakersSpeakers are output devices that produce sound as a result of commands given to the computer.They can be integrated into the system or used as external hardware devices.Modern advancements have led to the development of wireless speakers that connect via Bluetooth or other applications.ProjectorA projector is an optical device that displays images or videos on a large screen or surface.Commonly used in auditoriums, movie theatres, and classrooms, it mirrors the content displayed on the connected computer screen.Projectors enhance visual experiences for large audiences.HeadphonesHeadphones, also known as earphones or headsets, perform the same function as speakers but deliver sound directly to the user.Unlike speakers, which broadcast sound over a larger area, headphones provide a more personal listening experience.Input and Output Devices of a ComputerThere are several input and output devices of the computer that possess the ability to perform both functions. These devices can receive data (input) and provide results (output). Below are some examples of such devices:USB DriveA USB drive serves as both an input and output device. It allows data to be transferred from one device (input) and stores or sends it to other devices (output), making it essential for data exchange between computers.ModemA modem is a vital device that facilitates data transmission over telephone lines. It functions as both an input and output device by sending and receiving data to and from the internet or other networked devices.CD and DVDCDs and DVDs are commonly used input and output devices. They allow data to be saved from one computer (output) and retrieved or transferred to another device (input). These data storage devices are widely used for data storage and sharing.HeadsetA headset combines both input and output functions. The speaker portion works as an output device, providing sound to the user, while the microphone acts as an input device, capturing audio to be processed by the computer.Facsimile (Fax Machine)A facsimile or fax machine is another device that contains both input and output components. The scanner serves as the input device by scanning documents, while the printer functions as the output device by printing the transmitted data.Input and Output Devices Sample QuestionsFor candidates preparing for exams, understanding the input and output devices of the computer is crucial. Here are a few sample multiple-choice questions that will help you familiarise yourself with the format and test your knowledge on this topic.Q1. Which of the following devices is primarily used for input to a computer?A) PrinterB) MonitorC) KeyboardD) SpeakerAnswer: C) KeyboardQ2. The _____ is an example of an output device that displays visual content.A) ScannerB) HeadsetC) MonitorD) MouseAnswer: C) MonitorQ3. Which of these devices works as both an input and output device?A) PrinterB) USB DriveC) JoystickD) MicrophoneAnswer: B) USB DriveQ4. Which device is an example of an input device used to capture sound?A) PrinterB) MicrophoneC) SpeakersD) MonitorAnswer: B) MicrophoneQ5. What is the key difference between input and output devices?A) Input devices send data to the computer, and output devices receive data.B) Output devices display or produce the result of the input, while input devices send data to the computer.C) Both input and output devices serve the same function.D) Input devices are used for storage, and output devices are used for processing.Answer: B) Output devices display or produce the result of the input, while input devices send data to the computer.To explore the basics of computer fundamentals, candidates can refer to the linked article below.Definition: An output device in an accounting system is something that exports data from the system, so it can be used. In other words, an output devices is anything that gets information from the accounting system to the end users.What Does Output Device Mean?ContentsWhat Does Output Device Mean?ExampleThe output device is the last part of any accounting system. After the source documents are used to gather information and input into the system by input devices are, the information processors create usable reports and store them in the info storage area for recall later. The output device is then used to export the info in the storage area for use inside the business.Sounds like a pretty simple concept, right? It is!ExampleA great example of an output device is a printer. The printer takes reports that are generated by the accounting system or software and exports it to a usable form for management and accountants.Taking this example a step farther, monitors or projectors are also considered output devices because they display the information in accounting software to the end user. Even though the display isnt producing a physical copy of the report, like a print, it is still making the information available to the people who need to use it for decision-making purposes.Output devices can also be used to transfer data to end-users. Think about a bank account and payroll for example. The business checking account uses electronic funds transfer to automatically deposit money in its employees accounts every pay period. In essence, the checking account is exporting a finished payroll report that the bank can then use to deposit the money in the employees accounts. computerA device that processes information by following a set of rules called a program. and digital devices work by storing and processing information.Processing means to work with or organise and computers use a computer processorThe part of a computer that processes information and data to complete a task. or CPU(Central Processing Unit) Another way of describing the computer processor. to do this.The computer can only process information that is has been given, or that it has collected.This information is called inputData that is sent to a program to be processed.. It has been put into the computer systemA series of connected devices controlled by a computer..When the computer has processed the information and carried out the task it sends it back out.We call this information outputInformation sent out from a computer device after processing.. Input and output devices are essential components of a computer system, each serving distinct functions in the process of data handling and communication. Input devices allow users to provide data and instructions to a computer, while output devices present processed data in a user-friendly form. Understanding the differences between these devices helps in selecting the right tools for various computing needs.What is Input Devices?Input devices are the components of the computer system that accept incoming data and instructions and convert them into a pattern of electrical signals in binary code that is understandable to a digital computer. Example: Keyboard, mouse, etc. AdvantagesAllows users to input data and commands into the computer.Provides various methods for user interaction, such as typing, pointing, and voice commands.DisadvantagesCan be complex in design and operation.Some input devices require regular calibration or maintenance.What is Output Devices?Output devices are the component of computer system that converts the digitized signals into a form understandable to the user. The output devices are generally known as reverse of input devices. Output devices also send data from one computer system to another. example: Monitor, printer etc. AdvantagesProvides users with the results of computer processing in a visual, auditory, or printed format.Allows for effective communication of information from the computer to the user.DisadvantagesGenerally less complex in design compared to input devices.Output devices may require specific drivers or software for proper functionality.Difference Between Input and Output devicesInput DeviceOutput DeviceIt accepts data from user.It reflects processed data to user.It is directly commanded by user.It is commanded by processor.It converts user friendly instruction into machine friendly.It converts machine's instructions to user intelligible.It takes the data from the user and sends it to the processor for execution.It takes the processed data from the processor and sends it back to the user.It helps the computer is accepting the data.It helps the computer is displaying the data.The design of input devices are more complex.The design of output devices are less complex.Ex: Keyboard, Image Scanner, Microphone, Pointing device, Graphics tablet, Joystick.Ex: Monitor, Printers, Plotters, Projector, Speakers.ConclusionInput and output devices play complementary roles in a computer system. Input devices enable the entry of data and instructions, while output devices present the results of processing in a user-friendly manner. Understanding the differences between these devices helps in optimizing their use and ensuring effective communication between the user and the computer. HomeYCMOUExplain various types of input and output devices. AnandDecember 22, 2024 Input devices are hardware components that allow users to interact with a computer or other digital systems by sending data or commands. They translate physical actions or signals into machine-readable forms, allowing for communication between the user and the computer. Below are some common types of input devices:The keyboard is one of the most widely used input devices. It consists of a set of keys (letters, numbers, symbols, and function keys) that allow the user to input data, commands, and text into the computer. Keyboards can be connected via USB or wirelessly (Bluetooth) and come in various layouts, such as QWERTY or AZERTY, depending on the region.A mouse is a pointing device used to interact with the computers graphical interface. It typically consists of two buttons (left and right) and a scroll wheel. The movement of the mouse on a surface translates into pointer movement on the screen, allowing users to select, drag, and drop items. There are various types of mice, including optical, laser, and wireless versions.A scanner is used to convert physical documents or images into digital formats. It works by scanning the image or text and converting it into a file format (such as PDF or JPEG). There are several types of scanners, including flatbed scanners, which provide high-quality image scanning, and handheld scanners, which are more portable but less precise.Microphones capture sound and convert it into digital signals. They are often used for voice input, such as dictating text or providing commands to voice recognition software. In addition to speech recognition, microphones are used in multimedia applications for recording audio and in video conferencing systems.Touchscreens combine the functionality of a display and an input device, allowing users to interact directly with whats on the screen. They detect touch input (usually via finger or stylus) and translate it into actions, such as tapping, swiping, or zooming. Touchscreens are common in smartphones, tablets, and some laptops.A digital camera or webcam captures visual images and video and converts them into digital data. This data can be used in various applications, such as video conferencing, image editing, and surveillance. Webcams are commonly built into laptops, while digital cameras are standalone devices used for high-quality photography.A joystick or gamepad is typically used for gaming and interactive applications. A joystick controls movement in video games by sensing the direction it is moved and translating that into digital input. Gamepads, often used in console gaming, have buttons and analog sticks for controlling characters and actions.Biometric devices use unique physical characteristics (such as fingerprints, retina scans, or facial recognition) to identify individuals. These devices are commonly used for security purposes, such as logging into devices, accessing secure systems, or in banking.Output DevicesOutput devices are hardware components that receive processed data from a computer or digital system and present it to the user in a form that is understandable or usable. These devices convert machine-readable data into human-readable form, such as text, images, or sound. Below are some common types of output devices:A monitor is one of the most common output devices. It displays text, images, videos, and other graphical elements on a screen. Monitors come in various types, including CRT (Cathode Ray Tube), LCD (Liquid Crystal Display), LED (Light Emitting Diode), and OLED (Organic Light Emitting Diode), with modern monitors primarily being LCD or LED-based. The quality of the display is determined by factors like resolution, refresh rate, and screen size.A printer is an output device used to produce hard copies of digital documents and images on paper. There are several types of printers, including:Inkjet printers: Common for home and office use, inkjet printers use liquid ink to print documents and images.Laser printers: More common in offices, laser printers use a laser beam to produce high-quality prints quickly and efficiently.3D printers: These printers create three-dimensional objects by layering material such as plastic, resin, or metal based on digital models.Speakers are output devices used to produce sound. They convert digital audio signals into audible sound waves. Speakers are commonly used in multimedia applications, music, gaming, and video conferencing. They come in various sizes and forms, from small built-in speakers in laptops to large, high-quality sound systems for professional audio use.Headphones are a type of audio output device worn on or over the ears. They are used for personal listening to audio content such as music, podcasts, or calls, offering privacy and higher sound quality than built-in speakers. There are wired and wireless versions, with wireless models using Bluetooth technology.A projector is an output device used to display images, videos, or presentations onto a larger screen or surface. It is commonly used in classrooms, boardrooms, and entertainment setups. Projectors work by casting light through a lens and magnifying the image or video signal. Modern projectors may use technologies like LCD, DLP (Digital Light Processing), or LCoS (Liquid Crystal on Silicon).A plotter is used to produce high-precision drawings, graphics, or blueprints. Unlike printers that produce raster-based images, plotters create vector graphics and are commonly used for architectural designs, engineering diagrams, and large-format printing. Plotters typically use pens or markers to draw on paper or other materials.Haptic devices provide tactile feedback to the user by creating vibrations or forces that simulate the sense of touch. These devices are used in applications such as gaming, virtual reality, and medical simulations. Examples include vibration-enabled game controllers and specialized haptic gloves.ConclusionInput and output devices are integral to the functioning of any computer system, facilitating communication between the user and the machine. Input devices, like keyboards, mice, and scanners, allow users to send data to the system, while output devices, such as monitors, printers, and speakers, present the processed data in a usable or understandable form. Each device has its unique function, and advancements in technology continue to improve their capabilities and versatility in various fields, from entertainment to healthcare and beyond. An input/output (I/O) device is any hardware that enables a human user or another system to communicate with a computer. As the name suggests, these devices can both receive data (input) from the user or another source and deliver data (output) from the computer. Essentially, an I/O device bridges the computer and external entities, facilitating seamless data exchange.Input and Output Devices1. Input DevicesInput devices are the devices that are used to send signals to the computer for performing tasks. The receiver at the end is the CPU (Central Processing Unit), which works to send signals to the output devices. Some of the classifications of Input devices are:Keyboard DevicesPointing DevicesComposite DevicesGame ControllerVisual DevicesAudio Input DevicesSome of the input devices are described below.KeyboardThe keyboard is the most frequent and widely used input device for entering data into a computer. Although there are some additional keys for performing other operations, the keyboard layout is similar to that of a typical typewriter.Generally, keyboards come in two sizes: 84 keys or 101/102 keys but currently keyboards with 104 keys or 108 keys are also available for Windows and the Internet.KeyboardTypes of KeysNumeric Keys: It is used to enter numeric data or move the cursor. It usually consists of a set of 17 keys.Typing Keys: The letter keys (A-Z) and number keys (09) are among these keys.Control Keys: These keys control the pointer and the screen. There are four directional arrow keys on it. Home, End, Insert, Alternate(Alt), Delete, Control(Ctrl), etc., and Escape are all control keys (Esc).Special Keys: Enter, Shift, Caps Lock, NumLk, Tab, etc., and Print Screen are among the special function keys on the keyboard.Function Keys: The 12 keys from F1 to F12 are on the topmost row of the keyboard.MouseThe most common pointing device is the mouse. The mouse is used to move a little cursor across the screen while clicking and dragging. The cursor will stop if you let go of the mouse. The computer is dependent on you to move the mouse; it won't move by itself. As a result, it's an input device.A mouse is an input device that lets you move the mouse on a flat surface to control the coordinates and movement of the on-screen cursor/pointer.The left mouse button can be used to select or move items, while the right mouse button when clicked displays extra menus.MouseJoystickA joystick is a pointing device that is used to move the cursor on a computer screen. A spherical ball is attached to both the bottom and top ends of the stick. In a socket, the lower spherical ball slides. You can move the joystick in all four directions.JoystickThe joystick's function is comparable to that of a mouse. It is primarily used in CAD (Computer-Aided Design) and playing video games on the computer.Track BallTrack Ball is an accessory for notebooks and laptops, which works on behalf of a mouse. It has a similar structure to a mouse. Its structure is like a half-inserted ball and we use fingers for cursor movement. Different shapes are used for this like balls, buttons, or squares.Light PenA light pen is a type of pointing device that looks like a pen. It can be used to select a menu item or to draw on the monitor screen. A photocell and an optical system are enclosed in a tiny tube. When the tip of a light pen is moved across a monitor screen while the pen button is pushed, the photocell sensor element identifies the screen location and provides a signal to the CPU.Light PenScannerA scanner is an input device that functions similarly to a photocopier. It's employed when there's information on paper that needs to be transferred to the computer's hard disc for subsequent manipulation. The scanner collects images from the source and converts them to a digital format that may be saved on a disc. Before they are printed, these images can be modified.ScannerOptical Mark Reader (OMR)An Optical Mark Reader is a device that is generally used in educational institutions to check the answers to objective exams. It recognizes the marks present by pencil and pen.Optical Character Reader (OCR)OCR stands for optical character recognition, and it is a device that reads printed text. OCR optically scans the text, character by character turns it into a machine-readable code, and saves it to the system memory.Magnetic Ink Card Reader (MICR)It is a device that is generally used in banks to deal with the cheques given to the bank by the customer. It helps in reading the magnetic ink present in the code number and cheque number. This process is very fast compared to any other process.Bar Code ReaderA bar code reader is a device that reads data that is bar-coded (data that is represented by light and dark lines). Bar-coded data is commonly used to mark things, number books, and so on. It could be a handheld scanner or part of a stationary scanner. A bar code reader scans a bar code image, converts it to an alphanumeric value, and then sends it to the computer to which it is connected.Bar Code ReaderWeb CameraBecause a web camera records a video image of the scene in front of it, a webcam is an input device. It is either built inside the computer (for example, a laptop) or attached through a USB connection. A webcam is a computer-connected tiny digital video camera. It's also known as a web camera because it can take images and record video. These cameras come with software that must be installed on the computer toevery broadcast video in real-time over the Internet. It can shoot images and HD videos, however, the video quality isn't as good as other cameras (In Mobiles or other devices or normal cameras).Web CameraDigitizerDigitizer is a device that is used to convert analog signals to digital signals. It converts signals into numeric values. An example of a Digitizer is a Graphic Tablet, which is used to convert graphics to binary data.MicrophoneThe microphone works as an input device that receives input voice signals and also has the responsibility of converting it also to digital form. It is a very common device that is present in every device which is related to music.2. Output DevicesOutput Devices are the devices that show us the result after giving the input to a computer system. Output can be of many different forms like image, graphic audio, video, etc. Some of the output devices are described below.MonitorMonitors, also known as Visual Display Units (VDUs), are a computer's primary output device. It creates images by arranging small dots, known as pixels, in a rectangular pattern. The amount of pixels determines the image's sharpness.The two kinds of viewing screens used for monitors are described below.Cathode-Ray Tube (CRT) Monitor: Pixels are minuscule visual elements that make up a CRT display. The higher the image quality or resolution, the smaller the pixels.Flat-Panel Display Monitor: In comparison to the CRT, a flat-panel display is a type of video display with less volume, weight, and power consumption. They can be hung on the wall or worn on the wrist.Flat-panel displays are currently used in calculators, video games, monitors, laptop computers, and graphical displays.MonitorTelevisionTelevision is one of the common output devices which is present in everycan house. It portrays video and audio files on the screen as the user handles the television. Nowadays, we are using plasma displays as compared to CRT screens which we used earlier.PrinterPrinters are output devices that allow you to print information on paper. There are certain types of printers which are described below.Impact PrintersCharacter PrintersLine PrintersNon-Impact PrintersLaser PrintersInkjet PrintersPrinter666Impact PrinterCharacters are printed on the ribbon, which is subsequently crushed against the paper, in impact printers. The following are the characteristics of impact printers:Exceptionally low consumable cost.Quite noisyBecause of its low cost, it is ideal for large-scale printing.To create an image, there is physical contact with the paper.Character PrintersCharacter Printer canto produce print only one character at a time. It is of two types.Dot Matrix PrinterDaisy WheelLine PrintersLine Printers are printers that have the capability to print one line at a time. It is of two types.Drum PrinterChain PrinterNon-Impact PrintersCharacters are printed without the need for a ribbon in non-impact printers. Because these printers print a full page at a time, they're also known as Page Printers. The following are the characteristics of non-impact printers:FasterThey don't make a lot of noise.Excellent qualitySupports a variety of typefaces and character sizesLaser PrintersLaser Printers use laser lights to produce. dots which will produce characters on the page.Inkjet PrintersInkjet printers are printers that use spray technology for printing papers. High-quality papers are produced in an Inkjet printer. They also do color printing.SpeakersSpeakers are devices that produce sound after getting a command from a computer. Nowadays, speakers come with wireless technology also like Bluetooth speakers.ProjectorProjectors are optical devices that have the work to show visuals on both types of screens, stationary and moving both. It helps in displaying images on a big screen. Projectors are generally used in theatres, auditoriums, etc.PlotterPlotter is a device that helps in making graphics or other images to give a real view. A graphic card is mandatorily required to use these devices. These are the pen-like devices that help in generating exact designs on the computer.Braille ReaderBraille Reader is a very important device that is used by blind users. It helps people with low vision or no vision to recognize the data by running their fingers over the device to understand easily. It is a very important device for blind persons as it gives them the comfort to understand the letters, alphabets, etc which helps them in study.Video CardA video Card is a device that is fitted into the motherboard of the computer. It helps in improvising digital content in output devices. It is an important tool that helps people in using multiple devices.Global Positioning System (GPS)Global Positioning System helps the user in terms of directions, as it uses satellite technology to track the geometrical locations of the users. With continuous latitudinal and longitudinal calculations, GPS gives accurate results. Nowadays, all smart devices have inbuilt GPS.HeadphonesHeadphones are just like a speaker, which is generally used by a single person or it is a single-person usable device and is not commonly used in large areas. These are also called headsets having a lower sound frequency.3. Input-Output Devices (Hybrid Devices)Some devices can act as both input and output tools, making them very versatile. These devices let you send data to a computer and receive processed results from it. Unlike regular input or output devices, hybrid devices improve functionality, efficiency, and user interaction by combining both capabilitiesThey are commonly used in modern computing for:Data storageCommunicationSeamless interactionHere are some key examples of input-output devices:TouchscreenA touchscreen is a device that acts as both an input and an output tool. As an output device, it shows information like a regular monitor. But it also works as an input device because you can interact with it directly by touching the screen.Touchscreens are commonly used in:SmartphonesTabletsATMsKiosksThey let you navigate, select, and control functions without needing a mouse or keyboard. Advanced touchscreens, like capacitive and resistive types, can detect multiple touches at once. External Hard DriveAn external hard drive is a storage device that can both store and retrieve data. You can save files onto it (output) and access or modify them later (input). These drives connect to your computer using USB, Thunderbolt, or other interfaces.External hard drives are commonly used for:Backing up important data.Transferring large files between computers.Adding extra storage space.Unlike the storage inside your computer, external hard drives are portable. This means you can easily move large files between different computers.USB Flash DriveA USB flash drive is a small, portable storage device that can both send and receive data. When you copy files onto the flash drive, it acts as an output device, storing the information. When you access or transfer those files to another computer, it acts as an input device, providing the data to the system.USB flash drives are popular for several reasons:They are compact and easy to carry around.They can store a lot of data.They are simple to use.People commonly use USB flash drives to:Transfer files between computers.Create bootable operating systems.Serve as emergency backup storage.These versatile devices have made computing more efficient and convenient. Their ability to act as both input and output devices enhances productivity across various tasks. Updated April 14, 2023 Introduction to Computers Output DevicesComputers Output Devices are a part of the output unit, which is one of the three main components to form a functional computing device. These devices are intended to deliver the processed data from the other computer components to the computer users. The output devices are designed in such a way that it should be able to transfer the output in any user desired format. It is typically a hardware device used for communicating the output data, gathered as a result of the computations performed inside the central processing unit, to any other peer devices from the same network or the user. Types of Computers Output DevicesGenerally, the output devices are aimed to be used as a secondary device that can be operated by the users to retrieve the processed information. The output data can be of any format, and the choice of output device depends on this output data formats. There are several types of output devices available, and the below are few of them,1. MonitorMonitors are the habitually essential parts of the computer systems, which is capable of showing any kind of data formats on their display elements. These devices are available for retail purposes in a range of forms, sizes, and screen qualities. Monitors can be categorized as both Input and Output devices, as it can collect input from the users and display the results as well. It comprises of various parts that include the display screen, internal circuits, provisions for power connection, operational buttons for display adjustment, and an outer shell to cover these hardware parts.2. PrinterPrinters are the output devices used for converting the visual outcomes from the monitors into printed hard copies on different material surfaces. The computer transmits the image data to the printer, which then physically recreates the image, typically on paper. As Printers can only print the already processed data, these devices can only be treated as output devices. It is classified into multiple types, depending on the speed, printing patterns, type of ink used, etc. The outgoing audio data requires the sound amplifying devices, and a few such audio output devices are Speakers & Headphones. These output devices are connected to the main computing devices in order to get the output audio data from the processing unit. An important hardware unit is required or enabling a smooth function between the computer system and the audio devices are the Sound card.4. ProjectorProjectors are another type of display devices, which are used for displaying the outcomes from the computer system on to a different exterior surface, by reproducing the same computers contents for projection. It is a common understanding that the output data can be displayed clean and clear if the display surface is a plain hard surface white in color. This process is made possible using an extra hardware card, known as the Video Card. A very common usage of Projector devices are Movie Theater and Business Presentation.5. PlotterPlotters are the output devices used for making graphic prints, similar to a normal printer, widely used for vector graphics. It helps in creating real-life illustrations for the designs processed by the computer system. For the Plotter to carry out the plotting process, in a precise and accurate manner, it requires an enhancement called the Graphic Card. This device consists of a pen-like hardware component, which is used for printing the design identical to the processed output data. It uses any type of writing an object to replicate the design on to the printing material.6. TelevisionTelevisions are the most famous and commonly used output devices, which are used to display the video content and for playing the audio files. It is a well-liked way of exhibiting the videos, images, presentations, etc. for domestic as well as the technology-related industries. It is generally called as TV or Telly that has had evolved over the years from CRT screens to LCD displays to LED screens to the latest Plasma displays.7. Braille ReaderBraille Readers, as the name says, are used to facilitating the computer functional handling for blind users. The workings of this device involve the central processing system to deliver the processed data in the Braille format, so as to make it recognizable for the visionless disables. When the Braille Reader receives the processed data, the data is converted to push the pins against a flat surface. When the visually disabled use this device, they can run their fingers through these Braille script and understand the outcome easily. Similar to other output devices, this device comes in a variety of sizes as well. GPS can be expanded as the Global Positioning System device. This device uses the satellite resources for capturing the geographical position of the device. Hence, if the user holds this device in his hands the geographical location of the user can be captured accurately. It involves the calculation of exact latitude and longitude points for the location required and share the outcomes to the user. In the evolving technological world, all the portable devices are equipped with GPS systems, as it helps in locating the device when lost or stolen. The devices that come with inbuilt GPS units are mobile phones, wearable digital tracking devices, laptops, tablets, cars, bicycles, watches, and even shoes.9. Video CardVideo Card is a hardware device that can be placed in the dedicated sockets provides inside the motherboard of the computers processing unit. It is typically used for improvising the appearance of the digital content displayed in the other display based output devices. In recent days, this has become an indispensable element to keep up with the growing quality of content in the latest systems.ConclusionThe Computer Output Devices are the critical units in the whole computer architecture, as its the only way to get the results to the user after the required computations and operations are complete. Also, these output devices allow the users to verify the data to see if they have received what they wanted from the computer system in the first place.Recommended ArticleThis is a guide to Computers Output Devices. Here we discuss the introduction to Computers Output Devices along with its different types in detail. You can also go through our other suggested articles to learn more

What are the types of input and output devices. List the types of input devices. How many types of input and output devices. What are the different types of input and output devices of a computer system. Mention the types of input device. What are the different types of input and output devices illustrate their roles.