In a computer, the internal memories are RAM and ROM. The full form of RAM is Random Access Memory, while the full form of ROM is Read-Only Memory. This article aims to throw light on the differences of RAM vs. ROM in tabular form. You will also get to know about the types of memory in computers, types of RAM, and types of ROM. What follows will enable better usage and understanding of these vital computer parts. Read on for more! RAM vs. ROM RAM ROM The stored data is non-permanent. It can be modified, written, or deleted any number of times. The stored data is permanent. It can be modified at prolonged speed and only a limited number of times. It comprises of high-speed memory. ROM is slower than the RAM to a large extent. The CPU is capable of accessing the data stored on it. The CPU is incapable of accessing the data stored on the ROM. The data has to be transferred to the RAM before the ROM can access it. Large-sized with higher memory storage capacity. Smaller in size than the RAM and has lesser memory retention and storage capacity. Usage of RAM:Primary memory comprises DRAM DIMM modules and CPU Cache (SRAM). The usage of ROM:In firmware such as BIOS and UEFI. Microcontrollers, RFID tags, medical devices, as well as in devices where permanent memory solutions are necessary. Quite expensive. Relatively inexpensive. RAM is a read-write memory ROM is a read-only memory RAM stores the temporary data that is being processed by the CPU currently. ROM stores instructions needed during the bootstrapping process. Ranges from 64 MB to 4 GB. ROM is comparatively smaller in memory size. They are classified into Dynamic and static RAM. Classified as PROM, EPROM, and EEPROM. Types of Memory in a Computer: Computer memory is basically of two types 1. Random Access Memory (RAM) which is the primary internal memory of the computer and is volatile. 2. ROM meaning Read-Only Memory or the second internal memory of the computer is non-volatile. Ram and Rom are further divided into subdivisions and PROM, EPROM, and EEPROM, respectively. These sub-divisions of RAM and ROM are discussed in the following paras. What is RAM? RAM or Random Access Memory is the largest internal memory unit in a computer. It is second only to magnetic hard drive or SSD in terms of memory storage capacity. RAM comes in use for storing all the data that is generated and used by the Central Processing Unit of the computer in real-time. Unlike ROM, the data on RAM is capable of being read, edited, written, and deleted as many times as needed. As RAM is volatile, any data stored on it will disappear as soon as the power supply is cut off. This is the primary reason why the RAM cannot be used as a permanent storage device even though it provides much faster access than magnetic disk-based HDDs. Given the volatile nature of the RAM, the processed data has to be saved on the HDD to avoid any data loss in case of a power cut or an unexpected system shutdown. Types of RAM RAM can be classified into two distinct types: 1. SRAM (Static Random Access Memory) 2. DRAM (Dynamic Random Access Memory) Static RAM or SRAM needs constant power flow to retain the data within. More expensive and faster than DRAM, it serves as the cache memory of a computer. On the other hand, Dynamic RAM or DRAM has to be refreshed for retaining the data within. It is cheaper and slower than SRAM. Differences between SRAM and DRAM What is ROM? ROM or Read Only Memory is defined as an internal memory of a computer. As evident from its full form, the data on the ROM can only be read by the Central Processing Unit of the computer. It cannot be modified or changed in any way. To access the data stored on the ROM, the CPU has to go via the RAM. The data on the ROM is first transferred to RAM, and only then can it be accessed by the CPU. ROM is a storehouse of the instructions received by the computer during the bootstrapping process or the booting up process of the computer. As ROM comprises a non-volatile memory, the data stored on it will remain intact even after the CPU is switched off. As the capacity of reading Only Memory is lesser than that of Random Access Memory, it is cheaper and slower than the latter. Types of ROM There are three types of ROM: 1. PROM: Programmable ROM - PROM can be modified just once by users.2. EPROM: Erasable and Programmable ROM The data present on EPROM is capable of being erased with the help of ultraviolet rays. It can be reprogrammed.3. EEPROM: Electrically Erasable and Programmable ROM EEPROM is capable of being reprogrammed after being erased electronically (about 10000 times). Conclusion RAM and ROM are essential and necessary internal memory units for the computer. RAM is significant for CPU processing. ROM is vital for the computing unit to boot up. The ROM is equally essential and can be found on removable storage media devices like USB drives, Solid State Drives, SD cards, etc. these are instances of the advanced implementation of EEPROM, a classification of read-only memory. We have outlined essential differences between RAM and RAM above. In case you come across any other distinction between RAM and ROM then do leave a comment below, we will be waiting to hear from you.Welcome to Robots.net, your gateway to the greatest technology trends of today!Here, we strive to make the latest innovations accessible to everyone through introductory guides, news articles, and product reviews that will help you improve your technical know-how. Our dedicated team of tech experts and experienced writers are ready to provide you with simple yet insightful content tomake your learning experience easy.Why Is Technology So Important to Mankind?The possibilities are limitless. Every day, the latest technological advancements transform the world and the way we live in it. As engineers and scientists continue to make discoveries and come up with new innovations at breakneck speed, keeping up can be a real challenge. Here at Robots.net, you will never be left out thanks to the fresh and relevant content curated just for you.Latest Technology Trends That Everyone Should KnowFrom learning how blockchain works to knowing about todays must-have smart devices, well give you the lowdown of whats new in technology. The ever-growing library of articles and features on our site will make you an expert on topics such as:Artificial Intelligence (AI) Interested in how chatbots work? Want to know the difference between machine learning and deep learning? Then this category is tailor-made for you.Financial Technology (Fintech) Everyone seems to talk about blockchain, bitcoin, and cryptocurrencies nowadays. This category will fill you in on technology supporting various banking and financial services.Blockchain Interested in becoming a blockchain developer? Or just an avid reader wanting to learn about the basics? Turn into an instant expert by delving into these articles.Cryptocurrency Everything is going digital now, even currencies. What to choose from Bitcoin, Ripple, or Ethereum? Let us help you.Computer Enough said. Delve into our articles discussing software capabilities and gaming hacks in detail.Gaming GG! Robots.net also covers the latest in gaming news. Whether you are looking for reviews on VR games or a list of the top RPG games that you have to play, youll find a section just for you!Tech Reviews For the latest software, games, hardware, and peripherals, Robots.net is the place to go.Entertainment In the age of video and audio streaming platforms, you have to be in the know of the latest breakthroughs.How To For In-depth guides on how to do or troubleshoot stuff, this section is for you.All for Human and Robot CoexistenceBe in the loop and know how the latest developments in technology can help you do more in life. Lets face it, the evolution of human life wouldnt be a possibility if it werent for technological innovations. These two binaries have helped shape and improve each other through space and time.For instance, robotics has become quite a lucrative industry at present. Robots populate workplaces such as manufacturing and commercial warehouses, as most companies go fully automated in terms of production and operation. Bomb disposal units also utilize robots in defusing explosives to ensure the safety of military and police officers. Lastly, just looking at the numerous devices and appliances present in households proves, without a doubt, how technology helps us live a better life.At Robots.net, the latest tech trends are within your reach. Well provide you with relevant news and updates on innovations that matter.Watch this space to learn more about anything and everything related to technology!Sign Up Now &Daily Live Classes3000+ TestsStudy Material & PDFQuizzes With Detailed Analytics+ More BenefitsGet Free Access NowIn computing, memory plays a crucial role in storing and accessing data. There are two common types of memory that you might have come across: RAM (random access memory) and ROM (read-only memory). Both of these are essential components of electronic devices; they have distinct characteristics and serve different purposes.What is RAM?RAM, or random access memory, is a type of volatile memory that acts as the main memory for electronic devices such as computers, smartphones, and tablets. RAM allows for rapid read and write operations, enabling the quick retrieval and modification of data. It serves as a temporary workspace where the operating system, software applications, and data reside during active use. One of the key characteristics of RAM is its volatility. This means that RAM requires a continuous power supply to retain data. As soon as the power is disconnected, the contents stored in RAM are lost. Consequently, RAM is considered temporary storage, where data is transiently held while the system is operational. When you turn off your device, the data in RAM is wiped clean, ready for a fresh start upon the next boot.What is ROM?ROM, or read-only memory, is a non-volatile memory that stores data permanently. ROM is primarily used for reading data and does not allow for modification or overwriting of its contents. It contains firmware, boot loaders, and software instructions that are crucial for the operation of electronic devices. Unlike RAM, which is designed for dynamic data storage, ROM is used to store information that remains intact even when the device loses power. This makes ROM an essential component for preserving critical data, system configurations, and pre-programmed instructions that are essential for the devices functionality. ROM is often found in embedded systems, gaming consoles, smartphones, and other electronic devices. FeaturesRAMROMDefinitionA volatile memory that stores data temporarilyA non-volatile memory that stores data permanentlyRead/WriteRead and write operationsRead-only, cannot be modifiedData RetentionRequires power to retain dataRetains data even without powerUsageMain memory for running programs and storing dataStores firmware, boot loaders, and software instructionsCapacityTypically larger in capacity than ROMSmaller capacity compared to RAMTypesDRAM (Dynamic RAM), SRAM (Static RAM)PROM (Programmable ROM), EPROM, EEPROM, Flash memorySpeedFaster access and data retrievalSlower access compared to RAMCostRelatively cheaperCostlier than RAMErasabilityNot erasableSome types can be erased and reprogrammedExamplesDDR4, DDR3, SRAMPROM, EPROM, EEPROM, Flash memoryDifference between RAM and ROMMore information about RAMRAM, or random access memory, is a type of computer memory used as the main memory in electronic devices. It is a volatile memory that requires a constant power supply to retain data. RAM allows for fast data storage and retrieval, making it ideal for active use. It offers quick read-and-write operations, facilitating multitasking and smooth application execution. RAM capacities vary depending on the device, ranging from gigabytes to terabytes. However, it is important to note that RAM is temporary storage, as data is lost when power is disconnected. More information about ROMROM, or read-only memory, is a type of computer memory that stores data permanently and cannot be modified easily. Unlike RAM, ROM is non-volatile and retains its contents even when the power is disconnected. It is used to store firmware, boot loaders, and software instructions crucial for device operation. ROM is read-only and comes in different types, such as PROM, EPROM, EEPROM, and flash memory. These variations allow for programming, erasing, and reprogramming of the memory.FAQs: Difference Between RAM And ROM1. What is the main difference between RAM and ROM? Answer: RAM (Random Access Memory) is a type of volatile memory used for the temporary storage of data during active use, while ROM (Read-Only Memory) is a non-volatile memory that stores data permanently and cannot be easily modified.2. Can data be modified in RAM? Answer: Yes, data stored in RAM can be modified and updated. It allows for both read and write operations, making it suitable for dynamic data storage.3. Can data be modified in ROM?Answer: No, data stored in ROM cannot be easily modified. It is typically programmed during the manufacturing process and remains static. However, certain types of ROM, such as EPROM and EEPROM, can be erased and reprogrammed using specific methods. 4. Which type of memory retains data even when the power supply is disconnected?Answer: ROM retains data even when the power supply is disconnected because it is non-volatile. On the other hand, RAM is volatile memory and requires a continuous power supply to retain data. 5. What is the purpose of RAM?Answer: RAM serves as the main memory in electronic devices and is used for running programs, storing active data, and providing temporary storage for quick access and manipulation by the processor.6. What is the purpose of ROM?Answer: ROM is primarily used to store firmware, boot loaders, and software instructions for the operation of electronic devices. It contains pre-programmed instructions that remain intact even without a power supply. 7. Which memory type is faster: RAM or ROM?Answer: RAM is faster than ROM when it comes to data access and retrieval. RAM allows for quick read and write operations while accessing data from ROM is generally slower.8. Can ROM be erased and reprogrammed?Answer: Certain types of ROM, such as EPROM (Erasable Programmable Read-Only Memory) and EEPROM (Electrically Erasable Programmable Read-Only Memory), can be erased and reprogrammed using specific methods. However, most types of ROM are not designed for frequent erasure and reprogramming.9. How is the capacity of RAM and ROM different?Answer: RAM generally has a larger capacity compared to ROM. RAM capacities can range from gigabytes (GB) to terabytes (TB), depending on the device and its intended use. ROM, on the other hand, typically has a smaller capacity compared to RAM.10. What are some examples of RAM and ROM?Answer: Examples of RAM include DDR4, DDR3, and SRAM. Examples of ROM include PROM (Programmable ROM), EPROM, EEPROM, and flash memory. These commonly used in various electronic devices.Read More:Difference between power and authorityDifference between plant and animal cellsFacebook Twitter Email Print Copy Link More When buying a laptop, computer, smartphone, or any device, one of the terms you will often come across is RAM. But what exactly is RAM?Random-access memory, more commonly known as RAM, is an essential component in most computers. If the devices do not have RAM, doing anything on the system would be much slower. You wont be able to open an application or game, making your device unusable. If you are curious to know what RAM is, it is used to temporarily store all the information your device needs. When you access information in RAM, it is insanely fast compared to hard drives that provide longer-term storage.This guide will help you learn more about what RAM is, how to install it, or how much do you need. What is RAM?Photo from Digital Trends As mentioned above, RAM stands for Random Access Memory and is also known as main memory, system memory, or primary memory. This hardware device is located inside your computer or device that lets information be stored and retrieved. The more RAM you have, the quicker the information can be stored and accessed to make the device perform faster.Your RAM will temporarily store the action youre making on your desktop, laptop, or mobile device. You dont want your CPU going through your slower storage options to wait a second, or five when you start a new action. Even though these storages have evolved over the years, theyre still slower compared to RAM.Information that is stored in your RAM can be read from anywhere at almost the same speed. Since this hardware is hard-wired to your system, theres no real latency when accessing the available storage.Since RAM is a short-term storage, it doesnt remember everything forever. Known as a volatile technology, it resets and forgets everything once the device loses power. This is why it suits handling tasks on a short-term basis. Meanwhile, hard drives and SSDs make sure your device holds information when turned off.If youre interested to know how much RAM do you need for gaming, we have a guide that can help you out. Different Types of RAMNow you know what RAM is used for, it is now time to discuss the different types of RAM. The term RAM or memory is a bit broad and covers a few different types. When talking about RAM, they usually use terms DRAM and SDRAM. Users dont need to understand the technical side of each terminology, but learning the basics of it can be helpful.When you buy a laptop or computer, you might come across the term RAM.When you buy a laptop or computer, you might come across the term RAM. The different types of RAM also come in different sizes, such as DIMM and SO-DIMM. Most laptops use SO-DIMM. DRAM (Dynamic RAM) DRAM is what you can see in modern sticks although the older DDR2 and 3 can still be seen. The number besides DDR signifies the generation, with each generation becoming faster than the previous ones. It is also important to note that every generation has physical differences and cannot be interchanged with one another.In the video game space, another term thats commonly used is video RAM. It used to be a separate component but is now used to determine your graphic cards memory. If we are talking about game consoles, VRAM can mean the system memory. It usually has to do with the memory reserved exclusively for the GPU. Techy people call this as graphic DDR. GDDRs usually come with a general designation, for example, GDDR6.GDDR6 is common among modern graphic cards, but that isnt often the case. Some graphic cards may use a different form of VRAM, known as High Bandwidth Memory. Compared to GDDR6, it has improvements in overall performance. However, more companies prefer using GDDR due to HBMs expensive price tag. Check How Much RAM You Have (Windows)Photo from Super User There are several ways to check how much RAM your Windows computer has.If you are a Windows 10 user, access your Task Manager feature. Task Manager can be accessed by right-clicking your taskbar and selecting the feature. Alternatively, you can press Ctrl+Shift+Esc or Ctrl+Alt+Delete and select it from there. Once youre in the Task Manager window, select the Performance tab and click on Memory. Click on More Details in case you cant locate any tabs after accessing this feature, the total amount of random access memory your Windows device has will be shown here. The Task Manager also indicates the standard it is using, the speed, its form factor, and how many physical memory slots your system is using. You can upgrade your PC or laptops RAM if you want to, but make sure to get professional help if you dont know how to.If you are using Windows 7, the Task Manager function doesnt give out this useful information. To know the amount you have, access your Control Panel. Select System and Security next, and pick the System page once youre there. You can also open this quickly by opening your start menu, right-clicking Computer, and clicking Properties. How to Know How Much RAM You Have (MacOS)Photo from MakeUseOf For Mac users, knowing your total amount of RAM is much easier. Just press the Apple icon in the upper left part of your home screen. Then, you have to select the About This Mac function. There you will see a list of specs which include the total amount of RAM you have.The step above only gives you an overview of how much your RAM is. If you want to diagnose why your computer is slowing down, you should check the Activity Monitor.Upon experiencing slowdowns, press Command+Space to open the Spotlight, type Activity Monitor, and hit Enter. On top of the window, click Memory tab. It will show you a visual aid of your RAM usage at that moment to give you an overview of what application is eating up your RAM.Keep in mind that having more free RAM does not mean better performance better. Other factors can hinder your performance, but upgrading and learning how to free up space on your Mac is always good. If your Activity Monitor says youve used up your RAM, you probably need to upgrade your machine. To troubleshoot this, just close any unused programs on your Mac. Unfortunately, modern Mac computers cannot have their amount upgraded. Older Mac desktops and laptops had the luxury of having their RAM compatible with upgrades. Newer offerings from Apple have their RAM set and part of the motherboard. Avoid getting a bigger amount if your motherboard. If you want to know if you can upgrade your RAM, check the specific model of your Mac listed in About This Mac, google it, and see what you can do about it.If you want to know more about freeing up space and youre using PC, here is our guide on how to free up disk space on your computer. How to Increase Your Ram (PC Users)Photo from HowToGeek How Much RAM Can Your PC Accommodate?If you are going to your PC for heavy applications like photo/video editing, you need higher RAM for your PC. But before you get technical and upgrade your PC, you must first need to know how much RAM your PC can handle. You should consider how much RAM is compatible with your version of Windows and your motherboard. Avoid getting a bigger amount if your motherboard is for all variations of Windows 10. This is the same case for Windows 7.64-bit Windows128 GB for Windows 10 HomeUp to 2 TB for Windows 10 Education, Professional, and Enterprise8 GB for Windows 7 Home EditionUp to 16 GB for Windows 7 Home PremiumUp to 192 GB for Windows 7 Professional MotherboardYour motherboards RAM limit will depend on the model. Most modern computers will support at least 8 GB of RAM, and these motherboards will usually allow their users the ability to upgrade their RAM. To make sure that you can upgrade your RAM, read the documentation on your motherboard. If you are unsure, you can use Speccy to check what youre packing inside your PC tower. Google your model number to find the details you need.Once you have figured these out, you can go ahead and upgrade your RAM.If you want a motherboard for gaming, read our how to choose a gaming motherboardguide. How to Upgrade Your Desktop MemoryOnce you have decided that you need an upgrade and have checked what RAM you want to install to your desktop, you can now go ahead and follow these instructions. Upgrading StepsShut down your computer and remove all the cables attached to it. Open up your PC tower to access your motherboardLocate your motherboard and find the slots for your RAM sticks. Usually, they are adjacent to the CPU socket. Look for the big heat sink at the top of the motherboard. Youll either see two or four slots depending on your motherboardRemove the older RAM sticks. Toggle the plastic retention clips at each end of the slots to pull the sticks from their slots.Clean the slots if necessary by blowing air at the bottom edge of the stick must be matched with the one in the slot. Check your motherboards manual to see if there is a required order for filling up slots.Once the sticks are set in place, toggle the plastic retention levers again to secure them.Close up the computer case, put all the cables back, and turn on your computer. Your motherboard will still need time to recognize your new sticks so dont panic and just reboot the system. Let it run for a couple of minutes, restart and it will be back to normal. How to Upgrade Your Laptop MemoryPhoto from Monoar_CGI_Artis via Pixabay Before starting to upgrade the RAM of your laptop, the first thing you need to do is to determine the DIMM or DIMMS of your laptop and how you can reach them. If you own a large laptop, theres a chance that you can access the RAM slots without having to crack it open. However, smaller laptops have their sticks bolted down to the motherboard. This makes upgrading harder and might require a different way to install new sticks, so make sure to check the laptop brand and model if you cant upgrade your RAM and follow the steps for each type. How Much RAM Do You Need?Less than 4GBThis is recommended for anyone unless you are the lightest laptop/computer user. 4GB to 8GBThis is recommended for typical users that use minimum configuration. 8GB to 16GBThis is considered the standard amount in todays world. This will allow you to multitask and play games with minimal trouble. 16GB or morePhoto from Amazon This is recommended for users running demanding applications such as video editing software, AutoCAD, and graphics-heavy games. If your PC or laptop demands a lot of RAM, you can start with 16 GB and move up from there.If you are interested in getting RAM sticks with 16GB or more, check out the Corsair Vengeance LPX on Amazon and get one that is suited for gaming or content creation. Advantages of UpgradingPhoto by PublicDomainPictures via Pixabay There many advantages of having a bigger RAM in your computer system, one of which helps in increasing system performance. Here are some of the other benefits upgraded RAM can provide:Faster transfer of data from one location of the hard disk to anotherFaster startup and shutdown of the systemIncreased processing power from your CPUAdvanced features like the Graphical User Interface will be good Points to Keep in Mind During Ram UpgradeWhen you upgrade your RAM, there are certain points you need to keep in mind. Remember that it cant be upgraded instantly. Focus on the following points if you are looking to upgrade:You should look first for the processor support. The processor will be very slow for some systems, and that will make upgrading useless. The same speed will be sustained even if you upgrade.Before deciding for an upgrade, check whether there is support from the motherboard. If your motherboard has no slots, the upgrade can not be made.The next important thing is the versions of the RAM. When you go for an upgrade, this version is compatible with the motherboard. A RAM stick placed into an incompatible motherboard will cause a lot of problems.Only upgrade if your workload requires you to. If the current speed of your system is up to par, then theres no use in upgrading the RAM.How can financial brands set themselves apart through visual storytelling? Our experts explainhow.Learn More The Motorsport Images Collections captures events from 1895 to todays most recentcoverage.Discover The CollectionCurated, compelling, and worth your time. Explore our latest gallery of EditorsPicks.Browse Editors' Favorites How can financial brands set themselves apart through visual storytelling? Our experts explainhow.Learn More The Motorsport Images Collections captures events from 1895 to todays most recentcoverage.Discover The CollectionCurated, compelling, and worth your time. Explore our latest gallery of EditorsPicks.Browse Editors' Favorites How can financial brands set themselves apart through visual storytelling? Our experts explainhow.Learn More The Motorsport Images Collections captures events from 1895 to todays most recentcoverage.Discover The CollectionCurated, compelling, and worth your time. Explore our latest gallery of EditorsPicks.Browse Editors' Favorites Share copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution You must give appropriate credit , provide a link to the license, and indicate if changes were made . You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation . No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. Memory plays a vital role in saving and retrieving data. The performance of the computer system depends upon the capacity of the memory. Memory is an important element of a computer system. Lets understand memory types in detail Random Access Memory (RAM)is a type of computer memory that can be accessed randomly i.e. any byte of memory can be accessed without touching the previous bytes. RAM is can be found in computers and printers.RAM is volatile memory, which means that the stored information is lost when there is no power. So RAM is used by the central processing unit (CPU) when a computer is running to store information that needs to be used immediately, however, doesnt store any information permanently.Top selling RAM productsRAM is of two types-Static RAM (SRAM)Dynamic RAM (DRAM)Static RAM indicates that the memory retains its contents as long as power is available. SRAM chips uses a matrix of 6-transistors and no capacitors. Transistors do not require power to prevent leakage, so Static RAM needs to be refreshed on a regular basis. Static RAM uses more chips than DRAM for the same amount of storage space, thus making the manufacturing costs higher. Static RAM is used as cache memory in system.Dynamic RAM must be continually refreshed in order for it to maintain the data. It can rewrites the data several hundred times per second. Dynamic RAM is used because it is cheap and small. All Dynamic RAMs are made up of memory cells. It very basic form, DRAM can be built off one capacitor and one transistor.Related- Memory vs StorageRead-only memory (ROM)is a type of storage that permanently stores data on personal computers (PCs) and other devices. It contains the programming needed to start a PC or laptop, which is required for boot-up. ROM performs input/output tasks and holds programs and software instructions.ROMis used to store the start-up instructions for a computer. Most modern computers uses flash-based ROM. It is part of the BIOS chip, which is located on the motherboard.First ROMs were hard-wired devices that contained a pre-programmed instructions. These were known as masked ROMs. It was inexpensive ROM.PROM (Programmable Read only Memory)EPROM(Erasable and Programmable Read Only Memory)EEPROM can be erased by ultra-violet light for a duration of up to 40 minutes. During programming , an electrical charge is applied in an I/O gate. The charge is sustained for more than ten years because the charge has no leakage path. For erasing the memory ultra-violet light is used through a quartz crystal.EEPROM (Electrically Erasable and Programmable Read Only Memory)EEPROM is programmed and erased electrically and reprogrammed many times. Both erasing and programming to chip takes 4 to 10 milliseconds. EEPROM can be erased one byte at a time instead of erasing the entire chip. Process of re-programming is slow.RAM is volatile in nature as it is automatically erased when computer shutdown. ROM is non-volatile since it is never erased when there is not be deleted.RAM comes in form of chip whereas ROM comes in form of optical drivers made of magnetic tapes.RAM chip size is larger than ROM.Writing data to a RAM chip is a faster process. Writing data to a ROM chip is a slow process.A RAM chip can store multiple gigabytes (GB) of data, up to 16GB or more per chip. A ROM can store only several megabytes (MB) of data, up to 4 MB or more per chip.Examples of RAM are Static and Dynamic RAMExamples of ROM are PROM, EPROM and EEPROMPARAMETERRAMROMVOLATILITYRAM is volatile in nature as it is automatically erased when computer shutdown.ROM is non-volatile since it is never erased when there is any shutdown or restart of computer.ACCESSIBILITYRAM can be directly accessed by the processor.ROM cant be directly accessed by the processor since it is transferred into RAM where it is executed by the processor.STORAGERAM is used to store the temporary information of data which can be deleted.HARDWARE STRUCTURERAM is in form of chip .ROM is generally optical drivers made of magnetic tapes.COSTCostlier than ROM.Cheaper than RAM.SIZEChip size is larger than ROM.Chip size is smaller than RAM.WRITING SPEEDWriting data to a RAM chip is a faster process.Writing data to a ROM chip is a slow process.STORAGE LIMITA RAM chip can store multiple gigabytes(GB) of data, up to 16GB or more per chip.A ROM can store only several megabytes(MB) of data, up to 4 MB or more per chip.EXAMPLES Static and Dynamic RAM.PROM, EPROM and EEPROM are types of ROM.Memory.It stores a bit of data using a pair of transistors.What is primary memory? Primary storage memory (RAM) permanently stores data on personal computers (PCs) and other devices. It does not depend upon voltage.Hope you would have got the difference between RAM and ROM from above RAM vs ROM comparison table.ABOUT THE AUTHORFounder of AAR TECHNOSOLUTIONS, Rashmi is an evangelist for IT and technology. With more than 12 years in the IT ecosystem, she has been supporting multi domain functions across IT & consultancy services, in addition to Technical content making.You can learn more about her on her linkedin profile Rashmi Bhardwaj Memory is an important part of the Computer which is responsible for storing data and information on a temporary or permanent basis. Memory can be classified into two broad categories: Primary Memory Secondary Memory What is Primary Memory? Primary Memory is the Computer Memory that the Preprocessor directly accesses. It is used to store data on which computer is currently working. It has less storage than Secondary Memory. It is basically of two types: Random Access Memory (RAM) What is Secondary Memory? Secondary Memory is a type of Computer Memory which is used to permanently store the data and information. It has a larger data storage capacity than Primary Memory. Secondary Memory is not directly accessible from CPU. It is basically of four types: Hard Disk Compact Disc (CD) Digital Versatile Disk (DVD) Floppy Disk Types of Memory Primary Memory Primary Memory is classified into two types: RAM and ROM. In this article, we are going to discuss the differences between RAM and ROM. Random Access Memory Random Access Memory (RAM) is used to store the programs and data being used by the CPU in real time. The data on the random access memory can be read, written, and erased any number of times. RAM is a hardware element where the data currently used is stored. It is a volatile memory. It is also called as Main Memory or Primary Memory. This is user's memory. The software (program) as well as data files are stored on the hard disk when the software or those files are opened. They get expanded into RAM. It is the space where temporary data are automatically stored until the user saves it into the secondary storage devices. Types of RAM Static RAM: Static RAM or SRAM are made up of a six-transistor memory cell. Dynamic RAM: Dynamic RAM or DRAM stores a bit of data using a pair of transistor and capacitors which constitute a DRAM memory cell. Types of Primary Memory Advantages of RAM Speed: RAM is much faster than other types of memory, such as hard disk drives, making it ideal for storing and accessing data that needs to be accessed quickly. Volatility: RAM is volatile memory, which means that it loses its contents when power is turned off. This property allows RAM to be easily reprogrammed and reused. Flexibility: RAM can be easily upgraded and expanded, allowing for more memory to be added as needed. Disadvantages of RAM Limited capacity: RAM has a limited capacity, which can limit the amount of data that can be stored and accessed at any given time. Volatility: The volatile nature of RAM means that data must be saved to a more permanent form of storage, such as a hard drive or SSD, to prevent data loss. Cost: RAM can be relatively expensive, particularly for high-capacity modules, which can make it difficult to scale memory as needed. Read Only Memory Read Only Memory (ROM) is a type of memory where the data has been pre-recorded. Data stored in ROM is retained even after the computer is turned off i.e. non-volatile. ROM is primarily used in Embedded Parts, where the programming requires almost no changes. It is a permanent CN04 erasable memory gets initiated when the power is supplied to the computer ROM is a memory chip fixed on the motherboard at the time of manufacturing. It stores a program called BIOS (Basic Input/Output System). This program checks the activities of all the devices attached to the computer. Types of ROM Programmable ROM: It is a type of ROM where the data is written after the memory chip has been created. It is non-volatile. Erasable Programmable ROM: It is a type of ROM where the data on this non-volatile memory chip can be electrically erased using field electron emission. Mask ROM: It is a type of ROM in which the data is written during the manufacturing of the memory chip. Advantages of ROM Non-volatile: ROM is non-volatile memory, which means that it retains its contents even when power is turned off. This property makes ROM ideal for storing permanent data, such as firmware and system software. Advantages of ROM Stable and reliable, which makes it a good choice for critical systems and applications. Security: ROM cannot be easily modified, which makes it less susceptible to malicious attacks, such as malware. Disadvantages of ROM Limited flexibility: ROM cannot be easily updated, which makes it difficult to modify or customize the contents of ROM. Limited capacity: ROM has a limited capacity, which can limit the amount of data that can be stored and accessed at any given time. Cost: ROM can be relatively expensive to produce, particularly for custom or specialized applications, which can make it less cost-effective than other types of memory. Difference Between RAM and ROM Difference Random Access Memory (RAM) Read Only Memory (ROM) Data-Retention RAM is a volatile memory that could store thedata as long as the power is supplied. ROM is a non-volatile memory that could retain thedata even when the power is turned off. Read/Write Read and write operations are supported. Only read operations are supported. Working RAM temporarily stores the files the CPU is processing currently. ROM temporarily, It is typically used to initialize and control hardware components of the computer. Two types of memory are there Random Access Memory (RAM) and Read Only Memory (ROM). CPU Interaction CPU cant easily access data stored in ROM. CPU can easily access data stored in RAM. CPU cannot easily access data stored in ROM. Size and Capacity Large size with higher capacity, concerning ROM. Small size with less capacity, concerning RAM. Used as/In CPU Cache , Primary memory. Firmware, Micro-controllers. Accessibility The data stored is easily accessible. RAM stores a bit of data using a single DRAM memory cell. Dynamic RAM stores a bit of data using a pair of transistors and capacitors which constitute a DRAM memory cell. RAM is much faster than other types of memory, such as hard disk drives, making it ideal for storing and accessing data quickly. Examples of RAM are static RAM and dynamic RAM. ROM is more stable and secure, but it doesn't have as much freedom. Understanding the differences between these two types of memory is important for running a computer and managing files well. RAMRAM is an acronym of random access memory, a type ofcomputer memory where the Operating system (OS), application programs and datain current use are kept so that they can be quickly accessed by the processor. RAM is used tostore the data that is currently being processed by the CPU.RAM is a commandbetween the Operating systems, laptops,tablets and smartphones. In computers, RAM may be installed as memory moduleswhereas in tablets and smartphones, RAM is typically integrated into the deviceand cannot be removed.The term RANDOM ACCESS as applied to RAM comes from thefact that any storage location, also referred to as memory address, can beaccessed directly.RAM only stores data when the device is turned on. When thedevice is powered off, data stored in the RAM is erased. When the device is turned on, the operatingsystem and applications load fresh data into the system memory. In this regard,RAM is categorized as volatile memory. The storage capacity of RAM in a device determines how muchmemory the operating system and application can use. When a device hasenough RAM, several programs can run simultaneously without any slowdown.However, when a device has used almost 99% of the available RAM, the speed andperformance of a device is affected.There are two main types of RAM: Dynamic RAM (DRAM) and Static RAM (SRAM)DRAM (dynamic RAM)is widely used as computers main memory. Each DRAM memory cell is made up of atransistor and a capacitor within an integrated circuit and a data bit isstored in the capacitor. DRAM has to be refreshed every few milliseconds totrain data.SRAM is made up of four to six transistors. It keeps data in thememory as long as power is supplied to the system. Unlike DRAM, which has to berefreshed periodically, SRAM is faster but it is more expensive.to acquire.RAM is a thin rectangular chip that is usuallyinserted in a slot on the motherboard. The data stored in RAM is non-permanent, it canbe re-written, modified or deleted numerous number of times.RAM is a high speed memory.RAM is available in two primary sizes, whether used in desktopcomputer or a laptop computer. Desktop computer RAM is about 6inches in length and 1 inch in width. Laptop RAM is about half the length ofdesktop.The CPU is capable of accessing the data storedon the RAM.RAM has a higher memory storage capacity. Many RAMchips usually range in storage capacity from 1 GB to 256 GB.RAM stores the temporary data that is beingprocessed by the CPU currently.RAM is volatile type of memory. Its contents arelost when the device is powered off.RAM is used as a primary memory in electronicdevices. Primary memory comprises of DRAM, DIMM modules and CPU cache (SRAM).RAM is relatively expensive when compared to ROM.ROMROM is an acronym forRead-Only Memory. It refers to computer memory chips containing permanent orsemi-permanent data. ROM is non-volatile memory. Its contents arelost even if the device is powered off.ROM is a non-volatile type of memory. Its contents are retained even if the device is powered off.ROM is used in firmware such as BIOS and UEFI. Microcontrollers, RFID tag, medical devices as well as in devices whereby permanent memorysolutions are required or necessary.ROM is relatively inexpensive when compared to RAM.There are two main types of ROM: PROM and EPROMEPROM is an acronym for Electrically Erasable Programmable Read-Only Memory. It is a programmablememory chip that can be programmed only by an integrated circuit manufacturer.EEPROM:EEPROM is an acronym for Electrically Erasable Programmable Read-Only Memory. It stores and deletes instructions on aspecial circuit.PROMPROM is an acronym for Programmable Read-Only memory. This type of ROM iswritten or programmed using a particular device.EPROM:EPROM is an acronym for Erasable Programmable Read-Only memory. It storesinstructions which are only erased by exposing the memory to ultraviolet light.ROM is typically an optical drive made ofmagnetic tapes. The data stored in ROM is permanent. Data storedcan only be read, but not altered or modified, hence the name read-onlymemory.ROM is a high-speed memory.ROM can vary in size from less than an inch inlength to multipleinches in length and width depending on their use.The CPU is incapable of accessing the data storedon the ROM before the ROM can access it.ROM is smaller in size than the RAM and hassmaller memory storage capacity. Many ROM chips often have a storage capacityof between 4 GB and 8 GB.ROM stores instructions needed during thebootstrapping process.ROM is non-volatile type of memory. Its contentsare retained even if the device is powered off.ROM is used in firmware such as BIOS and UEFI. Microcontrollers, RFIDtag, medical devices as well as in devices whereby permanent memorysolutionsare required or necessary.ROM is relatively inexpensive when compared to RAM.Difference Between Uniform Memory Access And Non-Uniform Memory AccessRAM is the fastest storage medium outside of theCPU itself. Because RAM acts as the computer's short term memory it is where data is stored temporarily while theCPU uses it.Cost.RAM is relatively expensive when compared to ROM.Effect Of Increasing the speed of RAM, increases the of the CPU when you run aprogram.Increasing the speed speed increases the overall speed of your PC.Types Types of RAM include DRAM, SRAM, SDRAM and DDR.Types of ROM memory include EPROM, PROM, EEPROM, Mask ROM.Also Read: Difference Between Uniform Memory ROM/RAMSpeed On PCIncreasing the speed of RAM, increases the of the CPU when you run aprogram.Increasing the speed speed increases the overall speed of your PC.Types Types of RAM include DRAM, SRAM, SDRAM and DDR.Types of ROM memory include EPROM, PROM, EEPROM, Mask ROM.Also Read: Difference Between Uniform MemoryAccess And Non-Uniform Memory AccessRAM is the fastest storage medium outside of theROM.Given that there are no moving parts, RAMoperation is completely silent.It is static and does not require refreshingaction.Contents of the memory cannot be lost when thedevice is switched off.They are relatively inexpensive when compared toRAM.It is difficult to change or erase data.The circuits of ROM are simple.ROM is easy to the interface than RAM.ROM are more reliable than RAM.Also Read: Difference Between Memory And RegistersThere aretwo types of memory in a computer: RAM (Random Access memory) and ROM (ReadOnly memory)ROM (Read Only Memory) is used forbooting up the computer and to run initial diagnostics. Let us take an example, BIOS (basic input andoutput memory) or ROM. BIOS controls everything when the computer isswitched on. It checks for hardware errors and load basic software before theoperating system takes the control. Simply it is a permanent memory settingfor starting the computer. RAM (Random Access Memory) load theoperating system and for particular devices, load an applicationprogram, create, change and store data and shut down the computer. Programsare loaded in RAM thats why we need to save the data often otherwise it losedata when power is turned off. Stands for Random Access MemoryStands for Read Only MemoryKeeps changing when the application program, data is useItcontains programs used for booting up the computer and to run initialdiagnostics. DataIn RAM can be accessed in any order as can be modified (changed or deleted) ROMis fixed or data can be modified (read only memory)RAMmemory holds data temporarily while the program is being usedROMis a fixed memorysystem and virtually indestructibleRAMis volatile (It loses data when power is turned off)ROMis non-volatile (retains data even when power is off)Higher units of space recommended up to GB (meant for runningapplication programs)Storage capacity not an issue as it is not used in runningapplication programsROMmemory is extremely fast compared to ROMTypes of RAM-dynamic RAM & static RAMTypesof ROM: PROM: PROM (programmable read-only memory) like CDROM, EPROM, (Erasable Programmable Read-only memory)EEPROM.(Electrically Erasable Programmable Read-Only Memory) .Example of RAM: RAM chips like 2GB, 4GB, 8GB etc of different companieslike Corsair, Kingston etc.Example of ROM:cartridge in video game consoles, computer BIOS.

What is the 10 difference between ram and rom in a tabular form. 5 difference between ram and rom in tabular form. Difference between ram rom and cache memory in tabular form. Diff between ram and rom in tabular form. Difference between ram and rom class 9 in tabular form. What is the main difference between ram and rom. In a tabular form demonstrate the major difference between ram and rom.