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CLASSIFICATION OF COMPUTERS

1.Based on size and Power:

a). Supercomputer: Extremely powerful computers designed to perform complex scientific simulations at very high speeds. They are the largest and most powerful type of computer.

b).Mainframes;Large,powerful computers used by large organizations for critical applications,such as processing large amount of data,running complex business,and supporting multiple users.

c).Minicomputers;Mid-sized computers that are more powerful than personal computers but less powerful than mainframes.Ther are often used in small to medium-sized businesses and institutions.

d).Microcomputers; also known as personal computers, this ae the most common type of computers used by individuals and small businesses.They are smaller ,less powerful and more affordable than supercomputers than mainframes.

2.Based on a purpose;

a).General-purpose computers;these are versatile computers that can be used for a wide range of tasks and applications.Are designed to performed various functions,such as word processing,web browsing,e-,mail,gaming and multi-media play back.

General- purpose Computers,such as personal computers and smartphones,are the common type of computers used by individuals and businesses

b)Special-purpose computers :these are computers that are designed to perform specific task or set of tasks .They are optimized for a particular application or industry and are often more specialized and powerful than general-purpose computers.Examples;incude gaming,consoles,digital signal processors and embedded systems used in industrial control systems,medical devices, and auto motive systems

3.Compre and contrast and analog,digital and hybrid computers,explaining the key diffrences in how they process data.

a).Analog computers; they use continuous signals and physical models to represent and manipulate data.

They are often used for scientific and engineering application that require precise measurements and simulations .Analog computers can represent and manipulate data in a continuous form,making them well-suited for tasks such as signal processing,control systems and simulations.

b).Digital computers::They use discrete signals,typical represented as binary digits, to represent and manipulate data.They are the ,most type of computers used today and are widely used for a variety of applications,including general-purpose computing,data processing and communication.

Digital computers are more versatile and reliable than analog computers as they can represent and manipulate data using wide range of numerical representations and can be programmed to perform a variety of tasks.

c)..Hybrid computers:: This computers combine the features of both digital and analog computers using and discrete signals to perform a wide range of tasks.

4. Based on processing capabilities,

a).A single- user systems;designed to be used by a sindle user at a time, such as personal computers.

b). Multi-user systems; designed to support multiple users simultaneously, such as mainframes and mini computers.

c).Systems;Use multiple processors or cause to perform tasks in parallel,increasing overall processing power and speed.

d). Multi-tasking systems; can perform mulitiple tasks simultaneously,allowing for efficient use of resources and improved performance.

5. Based on Architecture

a). Von Neumann architecture; the most common computer architecture where the same memory space is used for both instructions and data.

b).Harvad architecture; uses separate memory spaces for instructions and data,allowing for more efficient and faster processing.

DIAGRAM OF THE CENTRAL PROCESSING UNIT (CPU):[Include a well labeled diagram of the CPU the Arithemetic Logic Unit (ALU),Control Unit,Registers and the Key components]

COMPUTER SECURITY

1.Key Principles of Computer Security

a).Confidentiality; ensuring that sensitive information is accessible only to authorized users.

b).Integrity; mainataing accuracy and consistency of data,and preventing an authorized modifications.

c). Availabilty[; Ensuring that computer systems and resources are accessible and operational when needed.

2.Analysis of the CIA Triad:

a).Confidentiality: Implenting encryption, access controls and secure communication protocols to protect sensitive inforamtio.

b).Integrity :Implementing data validation,access controls and audit trails to ensure the accuracy and consistency of data.

c). Availabilty: Implement ,backup systems and disaster recovery plans to ensure the continuos operation of computer systems and resources.