Portfolio #6

Comparative Study on Computer Types

Albano, Lauren Julia B.

INTRODUCTION

Computers come in various types, tailored to meet different needs and functionalities of end users. They are:

SUPERCOMPUTERS
MAINFRAME COMPUTERS
MINI COMPUTERS
SERVERS
WORKSTATIONS
MICROCOMPUTERS

BACK

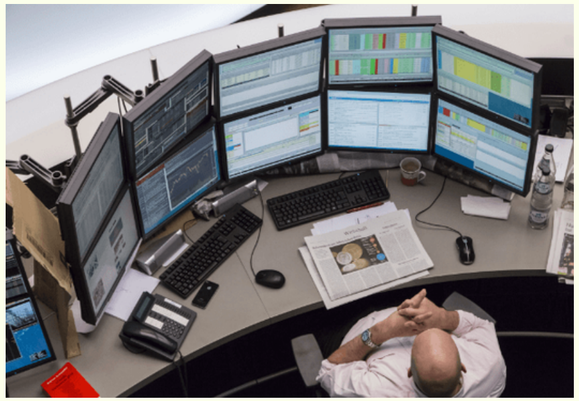
NEXT

DIFFERENT TYPES OF COMPUTERS

TYPE	Name/Brand	CPU	Memory	Processing Speed
Supercomputer	Cray, IBM Summit	Multi-core, high-speed	>1.4 Million GB RAM	Petaflops
Mainframe Computer	IBM Z Series, HP NonStop	High-capacity	GB-TB	Millions of instructions per second
Mini Computer	Digital PDP-11, IBM AS/400	Intermediate	Up to several GB	Slower than mainframe
Server	Dell PowerEdge, HPE ProLiant	Multi-core server	Varies	Scalable (up to high MIPS)
Workstation	Dell Precision, HP ZBook	High-performance	High-speed	PCs level but optimized for heavy tasks
Micro Computer	Lenovo ThinkPad, MacBook Pro	Single to multi-core	Few to several GB	Moderate (GHz range)

TYPE	Calculating Power	Energy Consumption	Working Principle	Field of Use
Supercomputer	High	High	Processes massive scientific computations	Weather forecasting, scientific research, quantum mechanics
Mainframe Computer	High	Moderate	Handles extensive I/O for large databases	Banking transactions, census data processing, ERP systems
Mini Computer	Moderate	Low	Acts as a smaller server for small organizations	Small-scale business operations, local server needs
Server	High	Varies	Manages networks	Web hosting, enterprise applications, cloud storage
Workstation	Optimized for floating-point	Moderate to high	Used for graphics rendering, engineering tasks	Engineering simulations, 3D modeling, scientific research
Micro Computer	Basic Needs	Low	For personal or business use	Personal computing, home or small office tasks

TYPE	Image	Description
Supercomputer		are the fastest and most powerful machines, designed for complex computations like climate modeling and molecular simulations. They process massive amounts of data simultaneously and are used in research and scientific fields
Mainframe Computer		are robust systems designed to handle large-scale processing and transactions for industries like banking and government. They can support thousands of users simultaneously with high reliability and data security
Mini Computer		are mid-range systems with moderate processing power, serving as local servers or for managing smaller-scale tasks. They are used in industries requiring dedicated processing for specific applications, like manufacturing or data management

TYPE	Image	Description
Server		are built to manage and distribute resources, data, and applications across networks. They are crucial for web hosting, cloud services, and enterprise operations, functioning 24/7 to support multiple users.
Workstation		are high-performance computers optimized for tasks like engineering, 3D rendering, and software development. They are designed for individual use but offer advanced graphics, processing, and multitasking capabilities
Micro Computer		are compact and affordable, built for everyday use such as office tasks, internet browsing, and media consumption. They are the most common type of computer used in homes and small businesses

COMPARE & CONTRAST

MINI COMPUTER

Offer moderate processing speed and memory, suitable for small organizations.

Consume less power compared to mainframes but more than microcomputers.

Are used as local servers or for managing small-scale data processing in offices.

MICRO COMPUTER

Have limited processing speed and memory compared to mini's and workstations.

Are highly energy-efficient, designed for individual use, such as office tasks or personal computing.

Are affordable and widely used in homes and small businesses.

WORKSTATION

Are optimized for high-speed processing and memory-intensive tasks.

Consume moderate power, balancing performance and efficiency.

Are used for engineering, graphics rendering, and scientific research.

SERVER

Are built for high processing speed and memory to handle multiple client requests.

Consume more power due to constant operation and heavy workload

Are used in managing websites, networks, and enterprise-level services.

DISCUSSION

Computers are categorized into types based on their size, functionality, and application, each designed to meet specific needs.

- **Supercomputers** are the fastest and most powerful, used for complex simulations like weather forecasting and scientific research.
- **Mainframe computers** are less powerful but designed to handle large-scale data processing tasks in sectors like banking and government.
- **Mini computers**, often considered mid-range, serve small businesses or organizations as servers or data processors.
- **Servers** manage network resources, handling requests and delivering services across multiple users.
- **Workstations** are powerful personal computers optimized for tasks like 3D modeling, engineering, and graphic design.
- **Microcomputers**, known as personal computers, are designed for everyday tasks such as document editing, internet browsing, and small business operations.

REFERENCES

Kurbangalievna, I. G., & Radikovna, S. L. (2017). Computer hardware basics: Intermediate Level. https://core.ac.uk/download/pdf/197460762.pdf

Bin, E., Ziv, A., & Ur, S. (2007). Hardware and software. Verification and Testing. https://www.johnwiley.com.au/highered/rainer/ausnz/studentresources/content/plugitin/ch02_hardware_software.pdf

Farley, D. L. (2005). Performance comparison of mainframe, workstations, clusters, and desktop computers (No. L-18392). https://ntrs.nasa.gov/api/citations/20050060747/downloads/20050060747.pdf

Maslova, I., & Makashova, A. (2023). Types of technical means of information systems and technologies in the economy. CyberLeninka. https://cyberleninka.ru/article/n/types-of-technical-means-of-information-systems-and-technologies-in-the-economy/viewer

THANK YOU