TYPES OF
COMPUTERS

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Introduction

This portfolio presents a comparative study on various types of computers, exploring their unique features, capabilities, and suitable applications. It highlights the distinctions among mainframe computers, mini computers, servers, workstations, and microcomputers, providing insights into their processor speeds, memory sizes, energy usage, and common use cases. By understanding these differences, users can make informed choices that align with their specific computing needs, whether it's for high-volume transaction processing or general everyday tasks. Additionally, the portfolio includes detailed examples and specifications for each computer type, ensuring a comprehensive understanding of modern computing technology.

Super Computers

Supercomputers are powerful machines designed for complex calculations at high speeds. They excel in processing vast amounts of data, making them essential for scientific research, weather forecasting, and simulations. Their architecture includes thousands of processors and significant memory capacity, enabling them to handle demanding tasks like climate modeling and molecular simulations.

Example: IBM Summit
- Build: High-performance architecture with numerous nodes
- CPU: Power9 CPU with up to 3.1 GHz, 22 cores per chip
- Memory: 2.4 PB of memory
- Processing Speed: 200 petaflops
- Usage: Scientific modeling, genomics, climate research, artificial intelligence
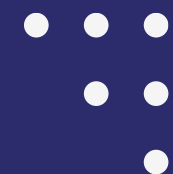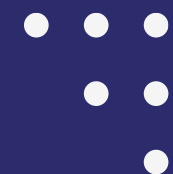
Mainframe Computers

Mainframe computers are designed to manage high transaction volumes, making them essential for industries such as banking. With their robust processing power, they handle large-scale operations effectively, ensuring swift and reliable transaction processing.

Example: IBM z16
- Build: 19-inch rack
- CPU: Up to 5.2 GHz
- Memory: Up to 40 TB RAM
- Calculating Power: 2,000 MIPS, enhanced performance for transactions
- Usage: Large-scale transaction processing, financial applications, and data analytics

Mini Computers

Mini computers, also known as mid-size computers, are smaller than mainframes but still powerful enough to perform various tasks for business and personal use. They are designed for individual users or small groups, offering a balance between performance and size. These computers are ideal for everyday tasks, such as office work, web browsing, and media streaming.

- Example: ASUS ChromeBox 4
  - Dimensions: 4.4 x 4.4 x 1.9 inches
  - CPU: Intel Core i7-10510U, up to 4.7 GHz
  - Memory: Up to 16 GB RAM
  - Usage: Cloud computing, office work, media streaming, and light gaming.

Servers

Servers are specialized computers that manage network resources and provide services to other computers on a network. They are designed to handle multiple requests concurrently, making them essential for web hosting, enterprise applications, and data storage. Servers often operate in data centers and can support many users accessing data and applications simultaneously.

- Example: HPE ProLiant DL380 Gen10 Plus
  - Build: Rack-mounted (2U size)
  - CPU: Intel Xeon Scalable, up to 3.6 GHz
  - Memory: Up to 3 TB RAM
  - Usage: Virtualization, cloud applications, and enterprise applications.

Workstations

Workstations are high-performance computers tailored for technical or engineering applications. They are equipped with powerful processors, substantial memory, and advanced graphics capabilities, making them suitable for tasks like graphic design, video editing, and 3D modeling. Workstations provide enhanced performance for professionals who require intensive computing power for their projects.

- Example: Dell Precision 5550
  - Build: 15.6 inches (thin and light design)
  - CPU: Intel Core i9-11900H, up to 5.0 GHz
  - Memory: Up to 64 GB RAM
  - Usage: Graphic design, 3D rendering, software development, and engineering applications.
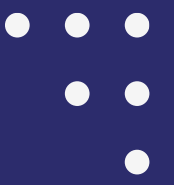
Micro Computers

Microcomputers, commonly referred to as personal computers (PCs), are the most widely used type of computer. They are designed for individual users and are suitable for a variety of tasks, including word processing, web browsing, multimedia consumption, and gaming. Microcomputers come in various forms, including desktops, laptops, and tablets, making them versatile for both personal and professional use.

- Example: Lenovo Yoga 7i
  - Build: 14 inches (convertible laptop)
  - CPU: Intel Core i5-1135G7, up to 4.2 GHz
  - Memory: Up to 16 GB RAM
  - Usage: General computing tasks, web browsing, multimedia, and lightweight gaming.

Comparison

A. Mini Computer
Processing Speed: Moderate
Memory Capacity: Moderate
Power Consumption: Low
Minimum: Low-end tasks
Usage: Office applications, multimedia, casual gaming

B. Micro Computer
- Processing Speed: Low to Moderate
- Memory Capacity: Low to Moderate
- Power Consumption: Very low
- Minimum: Basic tasks (like web browsing and email)
- Usage: Everyday tasks, home use

C. Workstation
- Processing Speed: High
- Memory Capacity: High
- Power Consumption: Moderate to High
- Minimum: Entry-level professional projects
- Usage: Professional software applications

D. Server
- Processing Speed: Very High
- Memory Capacity: Very High
- Power Consumption: High
- Minimum: Small-scale server duties
- Usage: Enterprise-level tasks, data centers, web hosting.

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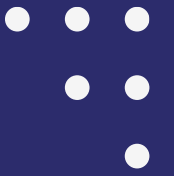
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Thanks
For your attention!