

A2 - Reading Vocabulary Assignment

- **Hz**

A unit of frequency measuring cycles per second— for example, monitor refresh rate.

- **Kilo-, Mega-, Giga-, Tera- (byte, Hz, etc)**

They are prefixes representing 1000, 1,000,000, and 1,000,000,000—for example, Kilobyte and Gigahertz.

- **elf (in terms of Unix programs)**

File format for storing executable code or object files in Linux and Unix-based systems.

- **Thrashing**

Inefficient memory management for swapping data between main memory and storage constantly occurs, which slows down the system.

- **Virtual**

- **Memory**

Using hard disk space to simulate more memory than physically available, expanding program addressing space.

- **Address Space**

The range of memory locations that a program or process can access. It's an imaginary memory, and it's larger than physical memory.

- **Address**

A memory address may differ from the physical memory addresses used by the underlying hardware that a process or software uses to access memory within its virtual address space.

- **Machine**

An emulator of a real computer system that enables many operating systems to operate simultaneously on a single physical hardware platform.

- Time Sharing:

OS system to share a resource among different entities. It will switch the resource to one of the other entities after a while.

- Digital (Discrete) vs Analog

Digital uses discrete values (0s and 1s), while analog uses continuous values.

- Kernel vs OS

Kernel is the operating system's core, responsible for hardware management, memory allocation, and process control. OS (Operating System) is a set of software managing hardware, providing APIs for application access, and offering user interfaces.

- Von Neumann

Fundamental computer architecture design with separate data and instruction memory.

- Integrated Circuit (IC)

Electronic circuits that have been reduced in size to contain millions of transistors on a solitary chip.

- State Machine (FSA)

Automaton model with distinct states and transitions based on inputs, used for modeling systems or protocols.

- Hardware (or program) privilege level

Depending on program security or purpose, different access levels to hardware resources or memory regions.

- Context Switch

Switch between processes by saving/restoring CPU state (registers, memory), enabling multitasking.

- Lazy loading (of program, of memory, etc)

Delaying loading of resources (data, libraries, or program parts) until needed, conserving memory, and optimizing startup.

- PID - Process ID

Unique identifier for a running process within the operating system.

- DMA - direct memory access

Hardware mechanism allowing devices to transfer data directly to/from memory without CPU involvement, improving efficiency.

- MMU / TLB

Hardware components responsible for virtual-to-physical memory address translation.

- Daemon

The background program continuously runs and performs system tasks.

- Symbol (concerning Code, object files, assembly)

A name representing a variable, function, or other entity in code, object files, and assembly.

- Shared Library

Pre-compiled code library shared by multiple programs, reducing memory usage and promoting code reuse.