CSYE 6230 - Midterm Test

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**What are the components of von Neumann structure?**

* Von Neumann Structure includes Memory, Input, Output, and Processor (which processor contains Control Unit, Arithmetic Logic Unit, and Accumulator).

**List 2 differences between RAM and ROM**

* RAM and ROM have difference in Volatility,
* RAM is volatile memory, which means it loses data where the computer is powered off or restarted, it used for temporary data storage during computer running. ROM, on the other hand, is non-volatile memory, means it retains its data even when computer is turned off. It stores essential data and instructions for computer booting up and initializing hardware components.
* RAM and ROM have difference in Function.
* RAM is used for temporary storage of data that the CPU (Central Processing Unit) actively uses during the execution of programs and tasks. It provides fast read and write access and is crucial for the computer's performance. However, ROM contains firmware or permanent software instructions that are integral to the computer's operation, such as the BIOS (Basic Input/Output System) or UEFI (Unified Extensible Firmware Interface). It is responsible for the initial boot-up of the computer and the loading of the operating system.

**What is VUI?**

* VUI stands for Voice User Interface

**List two types of Containers?**

* Docker and Kubernetes

**What is NIC?**

* NIC is Network Interface Card

**List the components of Big Pic of OS?**

* User, System Services, System Calls, Kernel, (**Interrupt**), CPU, Processes, multiple Threads

**What is an Interrupt?**

* Interrupt is the hardware mechanism by which modules like I/O or memory may interrupt the normal processing by CPU. It may be either clicking a mouse, dragging a cursor, printing a document, etc. the case where interrupt is getting generated.

**What is Polling?**

* Polling is a protocol, not the hardware mechanism, in which the CPU steadily checks whether the device need attention. The polling process keeps asking the Input/Output devices whether or not desires CPU processing.

**List all** **7 layers of OSI model?**

* Layer 7: Application
* Layer 6: Presentation
* Layer 5: Session
* Layer 4: Transport
* Layer 3: Network
* Layer 2: Data Link
* Layer 1: Physical

**List the functions of the presentation layer?**

* Transport, encrypt, compress

**What is HPC?**

* HPC stands for High Performance Computing

**Define a system call?**

* A system call is the programmatic way in which a computer program requests a servicefrom the kernel of the operating system it is executed on.

**What is Buffering?**

* Buffering is to store data temporarily while it is being transferred

**What is Caching?**

* Caching is to store parts of data in faster storage for performance

**What is Spooling?**

* Spooling is the overlapping of output of one job with input of other jobs