Sr. Software Engineer (SSE)

ABSTRACT

This is one of the subject from my personal notes series named “Coding-With-Arqam” that I am developing from the start of my professional development career.

Subject

Operating System

OPERATING SYSTEM

--> Demand Paging:

-> When not all of a process's pages are in the RAM, then the OS brings the missing(and required) pages from the disk into the RAM.

--> Throughput:

-> Number of processes completed per unit time.

--> Kernel:

-> Core of every operating system. Manages all communications between software and hardware components.

--> Virtual memory:

-> Memory management technique for letting processes execute outside of memory.

--> Virtual Memory Working:

-> With virtual memory, what the computer can do is look at RAM for areas that have not been used recently and copy them onto the hard disk.

-> This frees up space in RAM to load the new application.

-> When it is not the case, the operating system has to constantly swap information back and forth between RAM and the hard disk.

--> Time sharing system

-> multitasking.

--> Thread:

-> Basic unit of CPU utilization. In general, a thread is composed of a thread ID, program counter, register set, and the stack.

--> Necessary conditions which can lead to a deadlock situation in a system:

-> Mutual exclusion; Hold and Wait; No preemption; and Circular wait occurs simultaneously.

--> Banker's algorithm:

-> Banker's algorithm is one form of deadlock-avoidance in a system.

-> It gets its name from a banking system wherein the bank never allocates available cash in such a way that

-> it can no longer satisfy the needs of all of its customers.

--> Logical Address:

-> Virtual address.

-> Address that is generated by the CPU which is added with base address to form the physical address.

--> Physical Address:

-> That is seen by the memory unit.

-> Logical Address + Base Address.

--> Types of CPU registers:

-> Accumulators

-> Index Registers

-> Stack Pointer

-> General Purpose Registers

--> I/O status information Purpose:

-> I/O devices are to be allocated for a particular process on the behalf of it.

--> Multitasking VS Multithreading :

-> Multitasking allows CPU to perform multiple tasks (program, process, task, threads) simultaneously.

-> Multithreading allows multiple threads of the same process to execute simultaneously.

--> Spooling:

-> Normally associated with printing.

-> When different applications want to send an output to the printer at the same time,

-> spooling takes all of these print jobs into a disk file and queues them accordingly to the printer.

--> Caching:

-> Processing of utilizing a region of fast memory for a limited data and process.

--> Assembler:

-> Translator for low-level language.

--> Interrupts:

-> Part of a hardware mechanism that sends a notification to the CPU when it wants to gain access to a particular resource.

--> Preemptive Multitasking:

-> Allows an operating system to switch between software programs.

--> Plumbing/Piping:

-> Process of using the output of one program as an input to another.

--> Internal Commands <-> External Commands:

-> Internal commands are built-in commands that are already part of the operating system.

-> External commands are separate file programs that are stored in a separate folder or directory.

--> Folder in Ubuntu:

-> Doesn't exists. Everything included in your hardware is a FILE.

--> Why Ubuntu is safe and not affected by viruses?

-> It does not support malicious e-mails and contents.

-> Ubuntu uses Linux, which is a super secure O.S system.

--> Malware:

-> Virus, Trojans, SpyWare, Worms, Adware

--> Abbrevations:

-> FCFS: First-come, first-served.

-> SMP : Symmetric Multi-Processing.

-> VFS : Virtual File System.

-> GUI : Graphical User Interface.

-> NOS : Network Operating System.

Reference Links

- *https://career.guru99.com/top-50-operating-system-interview-questions/*