CSCI 251 Quiz 1
Johann Suarez

0. We'll have multiple machines on one set of hardware. We can easily consolidate our data, and we can try out operating systems in a sandbox-like fashion. In addition virtualization is fast and easy with the applications (VirtualBox, Gnomeboxes, etc) that are available today.

1. With free software, the source code is readily available which allows you to modify it for your specific needs. FOSS software is usually curated before being released, and as such the quality of FOSS has increased over the years. Corporations usually use FOSS because of its low-risk. On the other hand, both Proprietary and Free-ware doesn't offer you their source code. Granted, Free-ware is not paid for but there is no way to tailor it to your specifications.

2. The primary difference between a time sharing and multiprogramming system is its use of CPU time. In time sharing, the CPU's processing time is divided into intervals when a process is in execution. Multiprogramming allows for jobs to be executed concurrently, allowing many users to work with a single computer system.

3. A soft file link is a file that contains a pointer to another file, while hard links are two files that share the same I-node.

4. A partition is a segment of hard drive space. The advantage of partitioning a disk is that you can compartmentalize your system so that each partition has a separate use. Another advantage is with disk partitioning, you can boot multiple Operating Systems in your computer. In summary, you have modularity. A disadvantage of partitioning a disk is the risk of wiping out a portion of your hard disk if not done correctly. The complexity of managing several small partitions means there is more chance of error.

5. A zombie process is a child process that no longer has a parent process. Although they don't utilize system resources, they still retain a process ID that could otherwise be used by other programs.

6. Since Linux uses only Ring 0 and Ring 3 of the Protection rings, Linux relies on interrupts known as "Traps" to utilize a service offered by the operating system that needs Kernel privileges.

7. Ordering sectors on the same track in a disk is referred to as interleaving. Cylinder skew refers to the offset distance from the start of the last track of the previous cylinder.

8. DMA is a method that allows an input/output (I/O) device to send or receive data directly. Polling is a protocol that steadily checks on data transfer between the processor and I/O devices.

9. According to the comparisons in the slides in Lecture 6, with sequential workload the max rate of transfer is likelier to be achieved (based on the calculations)