Online Course Reflection Paper

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Operating Systems

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The course I have decided to take is Introduction to Operating Systems: Virtualization by Codio. Instructed by Patrick Ester is from The University of Texas at Dallas he is the director at Codio. This class uses the platform Codio which is a platform that uses hands on solutions for computer science and programming courses. Before starting this course, it is extremely interesting having a completely hands online course rather than an lecture. I am excited to be a part of this class because I am a hands-on learner, so this course layout fits me perfectly.

The reason why I took this course is to get a better understanding of what an operating system is and how it functions so smoothly. I understand what an operating system is from my class Operating System, but I am looking to further my knowledge of what makes up an operating system. Before taking my class at school I just thought of an operating system as the user experience and user interface but there is so much more that makes an operating system. What I expect to learn is what I already know but learn more in depth and the history of the operating system.

What I learned from this course is what an operating system (OS) is and it is “a piece of software that ensures the system runs smoothly and efficiently” (Ester). An operating system makes it easy to run multiple programs at a time by allowing programs to share memory and enabling programs to interact with hardware (Ester). We learned this in our class, but what this course emphasizes is how the processor fetches, decodes, and executes.. This can simply mean fetch a file or open an application. It then decodes the instructions to follow through with the request. Finally, it executes and opens the file or application (Ester).

The process is created from the disk. The computer stores programs on a disk that can be executed. These are the downloaded programs that are within the hard drive of the computer. Before the operating system can run the program it has to do a few things first (Ester). First it reads the bytes of the program. Then loads these bytes into memory which is the process address space. The process address space is the memory that the process can access (Ester). It sets aside memory for the run – time stack of the program. Finally gets ready for the input and output requests. One the process is created it can be in one of three different states running, ready, and blocked. Running means a process is executing instructions on the CPU (Ester). Ready means a process is ready to run but is not yet being executed on the CPU (Ester). Blocked is running process is stopped until another event happens (Ester). This is a very key component of the operating system being able to run.

Scheduling is something we learned in class. The different types of scheduling we learned in class were First in First out (FIFO), best fit, shortest job first and worst fit. Patrick Ester talking about the workload are the assumptions of how the processes occur within the system. Unrealistic workload assumptions are all jobs run for the same duration, jobs arrive at the CPU at the same time, and each job knows how long it takes to complete. Using the FIFO algorithm is using a more realistic approach to assume that tasks do not take the same amount of time to execute (Ester). To calculate the turnaround time, you the first two numbers then add the third number to the sum of the first two then divide by three. 10 + 20 is 30 and 30 + 30 is 60 so 10 + 30 + 60 / 3 = 45 seconds for this given turnaround time.

I would recommend this course because it is hands on and makes you think and participate within the class rather just sit watch or listen to someone talk about the topic. Some of the information is repeated but it just enhances on what we learned within our class.

# Bibliography

Ester, P. (2020). Introduction to Operating System: Virtualization. *Codio*. Courseera.

https://www.coursera.org/learn/codio-intro-to-operating-systems-1-virtualization/home/welcome