CS 314-001 Operating Systems, Spring 2024
Quiz #3 on January 25, 2024

List of the Possible Questions

#1: Look up the meaning of the following word using your textbook: "degree of multitasking".

#2: What is "process"?

#3: Describe how processes differ from programs by mentioning at least three differences between them.

#4: What does "PCB" stand for?   Why do operating systems need PCB?

#17: Mention at least five different information contained in a PCB (you do not have to describe them).

#5: What is "monolithic structure OS" (define the one)?   Mention at least one primary advantage and disadvantage.

#6: What is "layered (or modularized) structure OS" (define the one)?   Mention at least one primary advantage and disadvantage.

#7: What is "Virtual Machine" (define the concept)?

#8: What is the primary motivation(s) to use VM's?

#9: Sketch how VM is implemented in memory.

#10: Look up the meaning of the following word using your textbook: "OS kernel".

#11: Many operating systems use "external commands".   What are they?   What is the primary reason to adopt them?   What is the primary difference between "external commands" and "micro-kernel architecture"?

#12: Describe how "micro-kernel architecture" and "non micro-kernel architecture" are different in how system calls issued by user applications will be executed.

#13: What are the advantages in using "micro-kernel architecture"?   What is the primary disadvantage in "micro-kernel architecture"?

#14: What are the three different levels of "process scheduling" (just name the three)?

#15: What are the two states in "the long-term process scheduling"?

#16: What is "thrashing"?   Technically explain how does "thrashing" occur?

#17: What is "Blocked" state in "the long-term process scheduling"?

#18: What is "the short-term process scheduling"?

#19: What are the three states in "the short-term process scheduling"?

#20: What is "Ready" state in "the short-term process scheduling"?

#21: What is "Running" state in "the short-term process scheduling"?

#22: What is "Blocked" state in "the short-term process scheduling"?

#23: What is "the medium-term process scheduling"?

#24: Show a sketch of the integration of the short-term, medium-term, and long-term process scheduling as a <u>directed</u> state-transition diagram.

************** the following questions will NOT be covered by Quiz #3 **************

#25: How does "FCFS" process scheduling algorithm work?

#26: How does "RR" process scheduling algorithm work?

#27: How does "SJF" process scheduling algorithm work?

#28: How does "SRTF" process scheduling algorithm work?

#29: What is "preemptive process scheduling"?

#30: What is "non-preemptive process scheduling"?

#31: What is "throughput" (in the context of process scheduling)?

#32: What is "response time" (in the context of process scheduling)?

#33: What is "turnaround time" (in the context of process scheduling)?