CS 314 Operating Systems, Fall 2018
Quiz #2 on September 3, 2018

List of the possible questions

#1: What is “process”?

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

#3: What does “PCB” stand for? Why do operating systems need PCB?

#4: 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 are the primary motivations in using VM’s (mention at least two motivations or advantages)?

#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 is “process scheduling”?

#15: What are the three different levels of “process scheduling” (just name the three)?

#16: What is “the long-term process scheduling”?
#17: What are the two major reasons the long-term scheduling rejects starting a new process?

#18: Technically explain how “multi-tasking” can improve the processor utilization.

#19: In the following sentence: “The long-term scheduler is the main component that controls ________ in multitasking operating systems”, fill out the blank by a word that best fits to the blank.

#20: What are the two states in “the long-term process scheduling”?

#21: What is “Blocked” state in “the long-term process scheduling”?

#22: What is “the short-term process scheduling”?

#23: What are the three states in “the short-term process scheduling”?

#24: What is “Ready” state in “the short-term process scheduling”?

#25: What is “Running” state in “the short-term process scheduling”?

#26: What is “Blocked” state in “the short-term process scheduling”?

#27: What is “the medium-term process scheduling”?

#28: Show a sketch of the integration of the short-term, medium-term, and long-term process scheduling as a directed state-transition diagram.

#29: How does “FCFS” process scheduling algorithm work?

#30: How does “RR” process scheduling algorithm work?

#31: How does “SJF” process scheduling algorithm work?

#32: How does “SRTF” process scheduling algorithm work?

#33: What is “preemptive process scheduling”?

#34: What is “non-preemptive process scheduling”?

#35: What is “throughput” (in the context of process scheduling)?

#36: What is “response time” (in the context of process scheduling)?

#37: What is “turnaround time” (in the context of process scheduling)?