CS 314-001 Operating Systems, Spring 2024
Quiz #1 on January 16, 2024

List of the Possible Questions

#1: What are the four main OS functional components CS314 (Spring 2024) covers?

#2: What are the two primary roles of operating systems?

#3: What are the typical three structural layers in a computer system?

#4: What is "extended machine"? This question does <u>not</u> ask how we can use extended machine. A definition of "extended machine" is needed.

#5: What does "high level commands" mean (in computer science in general)? What does "low level commands" mean?

#6: What are "multi-tasking systems"?

#7: What is "context switching"?

#8: What was the primary disadvantage and advantage in "Pre Operating System (no OS)"? Mention at least (primary) one for each of the primary disadvantage and advantage.

#9: What is "batch system"? Show how a computer host with a typical batch is organized.

#10: Briefly describe what problem in "pre operating system" a batch system fixes and how.

#11: What are the two primary problems in batch system?

#12: What problem in "batch system" do "multi-programming (multitasking) OSes" fix and how?

#13: What problem in "multi-programming (multitasking) OSes" do "multitasking timesharing OSes" fix and how?

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

#15: What is "process"?

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

#17: 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).

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

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

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

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

#22: Sketch how VM is implemented in memory.

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

#24: 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"?

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

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