

Introduction to Computer Science

Homework#4

#1

Summarize the difference between a program and a process.

#2

If each time slice in a multiprogramming operating system is 50 milliseconds and each context switch requires at most a 10 milliseconds, how many processes can the machine service in a single second?

#3

What is virtual memory?

#4

What are the conditions that lead to a deadlock?

#5

What problem arises as the lengths of the time slices in a multiprogramming operating system are made shorter and shorter? What about as they become longer and longer?

#6

Suppose a multiprogramming operating system allocated time slices of 10 milliseconds and the machine executed an average of five instructions per nanosecond. How many instructions could be executed in a single time slice?

#7

What is a context switch?

#8

Summarize the steps performed by the CPU when an interrupt occurs.