Day 18 – Queue Applications and Concurrency

Chapter 04, 4.9 – Concurrency, Interference, and Synchronization, Review Problem(s): ***44***

Chapter 04, 4.2 – The Queue Simulation Lab

Multitasking is performing more than one task at a time. ***Concurrent programs*** consist of several interacting code sequences executing simultaneously. This might happen on one processors, or on different processors.

One method in Java for concurrency is the ***thread***. Every Java program has a main thread, which is able to generate additional threads, and these threads can run concurrently.

Since queues are a commonly used in concurrent programs, we introduce the concept of concurrency as we are exploring queues.

First, we will consider concurrency and synchronization in Java.

Chapter 04 PPT, pg 56-65.

Next we will explore how queues can reduce average waiting time. Tasks can "wait" in a queue before receiving a "service." One obvious way to minimize queue waiting time is to add more servers, ie. print jobs spend less time in the queue if there are 10 printers than if there is one printer.

Chapter 04 PPT, pg 50-55.

Queue Simulation Lab in Moodle.