COP 4600 – Introduction To Operating Systems – Summer 2014

Homework #4 – 100 points

Due: Thursday July 24th by 11:59 pm. NO LATE ASSIGNMENTS ACCEPTED

Answer each of the following questions completely. Make sure that your answers are neatly written and very readable. Points will be deducted if your assignment is not presented in a neat format.

 (50 points – 10 points each) Perform the same type of analysis that was done in the lecture notes for the various disk scheduling algorithms of FCFS, SSTF, SCAN, C-SCAN, and C-LOOK. Use the track request sequence shown below. Assume that the read/write head is initially positioned over track 100 and is moving in the direction of decreasing track number. Assume that there are 200 tracks on the disk, numbered 0-199. You can use the template shown below for your answers.

27, 44, 118, 146, 96, 58, 134, 155, 189, 198, 46, 69, 77, 138, 150

Next Track Accessed	Number of Tracks Traversed	Cummulative Tracks Traversed
Average Number of		

- 2) (30 points 10 points each) Repeat Problem 1 for the SCAN, C-SCAN, and C-LOOK algorithms assuming that the read/write head is initially moving in the direction of increasing track number.
- 3) (20 points) Using the sample numbers for the fixed head and movable head DASDs from the device management notes (see pages 28-30). The table on page 30 illustrates the time requirements to read a single byte from the device. Calculate the total average access time required read ten 100 byte records from both types of devices assuming:
 - (a) no record blocking, and
 - (b) record blocking with 10 records/block.