Design Document

The three algorithms that will be implemented in this homework will be:

FCFS where service requests will be serviced as they come in. The program will implement a queue to hold service requests as it goes hand in hand with FCFS.

SSTF where the next service request to be serviced is based on shortest seek time. The program will implement an array to hold service requests since a queue might not work as well for this algorithm.

SCAN where the disk head will first service requests closer to one end first until it services the last one on that end, and then in the other direction until it hits the last request on the other end. Similar to an elevator. The program will also implement an array to hold service requests as it is similar to the SSTF algorithm, but differs slightly in how it traverses.

We will use a data structure to represent the 5000 cylinders and represent the 50 service requests with a 1, and we will 0 out the rest. The only exception being the queue. These will be randomly generated and stored in the data structure for service requests.

We might use a helper function to calculate the amount of overhead work required to go from one request to another in order to determine which service request will be fulfilled next.