CS 374 Lab 8: Disc Retrieval

NAMES:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- | --- | --- | --- |
|  | **SSTN** | **SCAN** | **LOOK** | **C-SCAN** | **C-LOOK** | **N-Step Scan** |
| Directionality | request based | bi-directional | bi-directional | one directional | one directional | bi-directional |
| **Stops At** | nearest neighbor | track extremes | high/low request values | track extremes | high/low request values | track extremes |
| **Incorporates** | inserts in list | inserts in list | inserts in list | accumulates | accumulates | accumulates |

For the following questions you can use the chart above to help you calculate the total time needed to service a request. Assume that all algorithms start at track 0, that there is a 5 ms per track seek time, that each request is one record totaling 100 bytes, the data transfer rate is .0005 ms per byte, the search time is a fixed 5 ms, and the tracks run from 0 – 40.

For algorithms that travel to track extremes, calculate only the time necessary to finish the last request, NOT the time to complete the entire final sweep.

##### Start Track Initial Requests Later Requests

0 13, 36, 8 Arrival Time: 10 12 14 16

Track Requested: 5 18 23 20

1. Draw the track traces for the SSTN and LOOK algorithms listed above.

2. Calculate the total time required for **SSTN, LOOK, N-Step SCAN** to process these requests.

**Put the names from your group at the top of one of these handouts, and turn it in to get credit for the lab. You may want to keep copies of your answers for your group members.**