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Our group was able to complete the project and successfully compile it. The results vary for each disk scheduling algorithm. The entire program was written in Java and all included seven disk scheduling algorithms. These are FIFO, LIFO, SSTF, SCAN, CSCAN, N-STEP-SCAN, and FSCAN. The table below shows the results from run to completion of the scheduling algorithms. First Random numbers were generated starting from the head of the disk. The second random numbers were generated with the head starting from the middle of the disk. Third random numbers were generated with the head starting at the end of the disk. Each algorithm had its own average and seek time. However, we implemented the special number generator to analyze the impact of the disk scheduling algorithms.

Further, the First special percentage numbers were generated positioning the head at the beginning of the disk. Second special percentage numbers were generated positioning the head in the middle of the disk. Third special percentage numbers were generated by positioning the head at the end of the disk. The FIFO algorithm assigns request in the order of priority in which it arrives in the queue. The LIFO algorithm processes the request by satisfying the last request in the queue and moves upward. The SSTF algorithm processes the request with the shortest seek time, and request closer to the disk arm will first be executed. The SCAN algorithm moves into a direction and services the request coming to its path and after reaching the end of the disk. It reverses again and services the request arriving to its path using the elevator algorithm. The CSCAN algorithm moves to the end of the queue and starts processing request thereby moving the disk arm in a circular fashion. N-STEP-SCAN algorithm receives a bunch of requests in the buffer and splits them before executing each request. FSCAN algorithm processes the request from the first queue and any request that comes in will be stored in the second queue. Moreover, it moves back to satisfy the new request after processing the request from the first queue.

Random Generation with the head beginning at the beginning of the Disk.

First Run:

| 230 ns| 177 ns| 49 ns| 72 ns| 62 ns| 20 ns| 2 ns| Avg Distance

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| 10 ns| 10 ns| 0 ns| 0 ns| 0 ns| 9 ns| 10 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Second Run:

| 43 ns| 213 ns| 60 ns| 83 ns| 91 ns| 141 ns| 200 ns| Avg Distance

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| 49 ns| 49 ns| 0 ns| 0 ns| 0 ns| 32 ns| 32 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Third Run:

| 248 ns| 72 ns| 56 ns| 78 ns| 84 ns| 116 ns| 86 ns| Avg Distance

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| 51 ns| 51 ns| 0 ns| 0 ns| 0 ns| 31 ns| 31 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fourth Run:

| 122 ns| 226 ns| 83 ns| 85 ns| 100 ns| 86 ns| 168 ns| Avg Distance

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| 48 ns| 48 ns| 0 ns| 0 ns| 0 ns| 32 ns| 32 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fifth Run:

| 75 ns| 136 ns| 63 ns| 76 ns| 73 ns| 56 ns| 165 ns| Avg Distance

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| 50 ns| 50 ns| 0 ns| 0 ns| 0 ns| 31 ns| 31 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Random Generation with the head beginning at the Middle of the Disk.

First Run:

| 132 ns| 137 ns| 51 ns| 90 ns| 83 ns| 37 ns| 53 ns| Avg Distance

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| 10 ns| 10 ns| 0 ns| 0 ns| 0 ns| 9 ns| 10 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Second Run:

| 112 ns| 219 ns| 55 ns| 82 ns| 161 ns| 148 ns| 130 ns| Avg Distance

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| 49 ns| 49 ns| 0 ns| 0 ns| 0 ns| 32 ns| 32 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Third Run:

| 254 ns| 183 ns| 56 ns| 85 ns| 73 ns| 96 ns| 87 ns| Avg Distance

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| 51 ns| 51 ns| 0 ns| 0 ns| 0 ns| 31 ns| 31 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fourth Run:

| 159 ns| 174 ns| 62 ns| 90 ns| 88 ns| 149 ns| 191 ns| Avg Distance

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| 48 ns| 48 ns| 0 ns| 0 ns| 0 ns| 32 ns| 31 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fifth Run:

| 234 ns| 110 ns| 50 ns| 94 ns| 89 ns| 223 ns| 93 ns| Avg Distance

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| 50 ns| 50 ns| 0 ns| 0 ns| 0 ns| 31 ns| 31 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Random Generation with the head beginning at the End of the Disk.

First Run:

| 158 ns| 58 ns| 62 ns| 73 ns| 92 ns| 57 ns| 18 ns| Avg Distance

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| 10 ns| 10 ns| 0 ns| 0 ns| 0 ns| 9 ns| 10 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Second Run:

| 208 ns| 239 ns| 65 ns| 90 ns| 95 ns| 195 ns| 197 ns| Avg Distance

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| 49 ns| 49 ns| 0 ns| 0 ns| 0 ns| 32 ns| 32 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Third Run:

| 3 ns| 23 ns| 49 ns| 86 ns| 74 ns| 101 ns| 164 ns| Avg Distance

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| 51 ns| 51 ns| 0 ns| 0 ns| 0 ns| 31 ns| 31 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fourth Run:

| 203 ns| 27 ns| 52 ns| 78 ns| 81 ns| 108 ns| 56 ns| Avg Distance

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| 48 ns| 48 ns| 0 ns| 0 ns| 0 ns| 32 ns| 31 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fifth Run:

| 101 ns| 201 ns| 64 ns| 86 ns| 83 ns| 240 ns| 23 ns| Avg Distance

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| 50 ns| 50 ns| 0 ns| 0 ns| 0 ns| 31 ns| 31 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Special Percentage Generation with the head beginning at the Beginning of the Disk.

First Run:

| 28 ns| 141 ns| 50 ns| 75 ns| 76 ns| 6 ns| 208 ns| Avg Distance

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| 9 ns| 9 ns| 0 ns| 0 ns| 0 ns| 9 ns| 9 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Second Run:

| 248 ns| 122 ns| 56 ns| 79 ns| 114 ns| 251 ns| 248 ns| Avg Distance

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| 9 ns| 9 ns| 0 ns| 0 ns| 0 ns| 9 ns| 9 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Third Run:

| 144 ns| 244 ns| 63 ns| 78 ns| 87 ns| 27 ns| 141 ns| Avg Distance

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| 10 ns| 10 ns| 0 ns| 0 ns| 0 ns| 10 ns| 11 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fourth Run:

| 228 ns| 40 ns| 59 ns| 96 ns| 97 ns| 6 ns| 222 ns| Avg Distance

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| 9 ns| 9 ns| 0 ns| 0 ns| 0 ns| 9 ns| 10 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fifth Run:

| 88 ns| 108 ns| 54 ns| 88 ns| 90 ns| 20 ns| 15 ns| Avg Distance

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| 10 ns| 10 ns| 0 ns| 0 ns| 0 ns| 10 ns| 10 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Special Percentage Generation with the head beginning at the Middle of the Disk.

First Run:

| 121 ns| 9 ns| 53 ns| 165 ns| 88 ns| 126 ns| 37 ns| Avg Distance

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| 9 ns| 9 ns| 0 ns| 0 ns| 0 ns| 9 ns| 10 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Second Run:

| 51 ns| 226 ns| 61 ns| 122 ns| 135 ns| 230 ns| 143 ns| Avg Distance

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| 9 ns| 9 ns| 0 ns| 0 ns| 0 ns| 9 ns| 9 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Third Run:

| 126 ns| 75 ns| 48 ns| 116 ns| 116 ns| 123 ns| 63 ns| Avg Distance

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| 10 ns| 10 ns| 0 ns| 0 ns| 0 ns| 10 ns| 11 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fourth Run:

| 73 ns| 11 ns| 58 ns| 128 ns| 99 ns| 27 ns| 60 ns| Avg Distance

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| 9 ns| 9 ns| 0 ns| 0 ns| 0 ns| 9 ns| 10 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fifth Run:

| 241 ns| 20 ns| 50 ns| 121 ns| 120 ns| 14 ns| 16 ns| Avg Distance

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| 10 ns| 10 ns| 0 ns| 0 ns| 0 ns| 9 ns| 10 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Special Percentage Generation with the head beginning at the End of the Disk.

First Run:

| 122 ns| 99 ns| 59 ns| 88 ns| 85 ns| 250 ns| 7 ns| Avg Distance

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| 9 ns| 9 ns| 0 ns| 0 ns| 0 ns| 9 ns| 9 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Second Run:

| 107 ns| 185 ns| 49 ns| 76 ns| 80 ns| 41 ns| 26 ns| Avg Distance

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| 9 ns| 9 ns| 0 ns| 0 ns| 0 ns| 9 ns| 9 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Third Run:

| 13 ns| 27 ns| 53 ns| 104 ns| 108 ns| 73 ns| 144 ns| Avg Distance

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| 10 ns| 10 ns| 0 ns| 0 ns| 0 ns| 10 ns| 10 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fourth Run:

| 167 ns| 24 ns| 52 ns| 58 ns| 79 ns| 8 ns| 29 ns| Avg Distance

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| 9 ns| 9 ns| 0 ns| 0 ns| 0 ns| 9 ns| 10 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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Fifth Run:

| 132 ns| 8 ns| 54 ns| 123 ns| 93 ns| 237 ns| 2 ns| Avg Distance

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| 10 ns| 10 ns| 0 ns| 0 ns| 0 ns| 10 ns| 10 ns| Avg Seek Time

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| FIFO | LIFO | SSTF | SCAN | C-SCAN | N-STEP-SCAN | FSCAN |

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