

LAB REPORT - 1

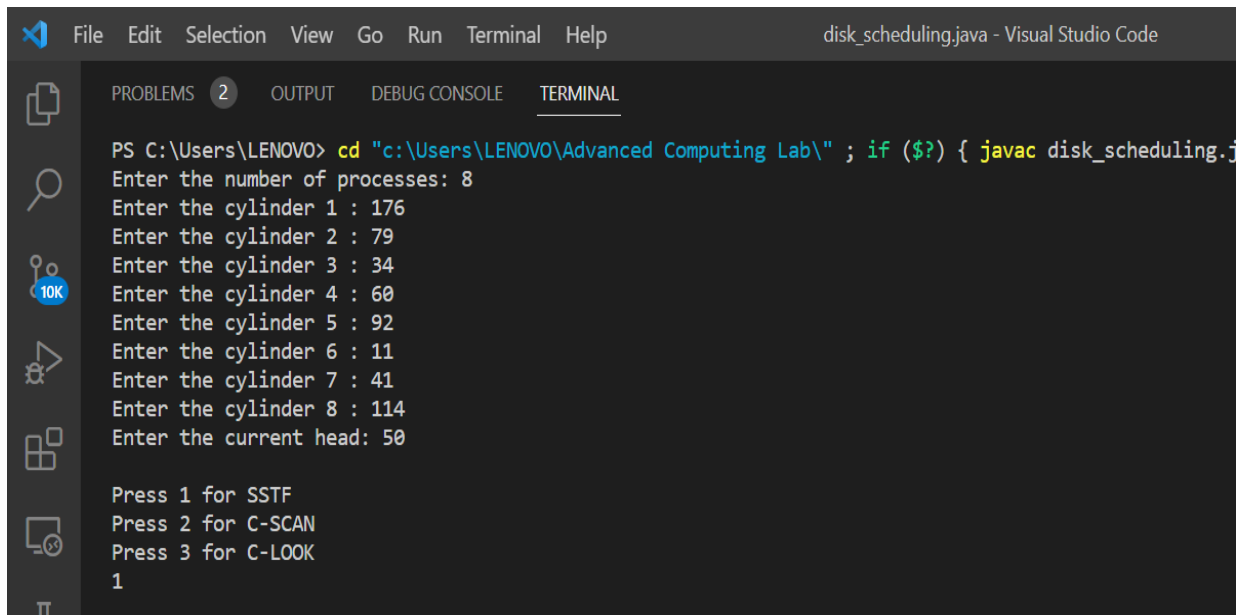
COC 3960

ADVANCED COMPUTING LAB

OBJECT: Given a string of cylinder numbers. Write a program to implement disk scheduling algorithms: (i) SSTF (ii) C-SCAN and (iii) C-LOOK. Compute the head movement for each of these algorithms. Show all intermediate steps.

INPUT:

(i) SSTF



```
File Edit Selection View Go Run Terminal Help disk_scheduling.java - Visual Studio Code

PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL

PS C:\Users\LENOVO> cd "c:\Users\LENOVO\Advanced Computing Lab\" ; if ($?) { javac disk_scheduling.j
Enter the number of processes: 8
Enter the cylinder 1 : 176
Enter the cylinder 2 : 79
Enter the cylinder 3 : 34
Enter the cylinder 4 : 60
Enter the cylinder 5 : 92
Enter the cylinder 6 : 11
Enter the cylinder 7 : 41
Enter the cylinder 8 : 114
Enter the current head: 50

Press 1 for SSTF
Press 2 for C-SCAN
Press 3 for C-LOOK
1
```

INTERMEDIATE STEPS & OUTPUT :

```
File Edit Selection View Go Run Terminal Help disk_scheduling.java - Visual Studio Code
PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL
-----Showing all distances (from request process to head)-----
126 29 16 10 42 39 9 64
-----Taking the minimum distance & updating head-----
9
#head movement till now: 9
--current head -> 41

-----Showing all distances (from request process to head)-----
135 38 7 19 51 30 0 73
-----Taking the minimum distance & updating head-----
7
#head movement till now: 16
--current head -> 34

-----Showing all distances (from request process to head)-----
142 45 0 26 58 23 7 80
-----Taking the minimum distance & updating head-----
23
#head movement till now: 39
--current head -> 11

-----Showing all distances (from request process to head)-----
165 68 23 49 81 0 30 183
-----Taking the minimum distance & updating head-----
49
#head movement till now: 88
--current head -> 60

-----Showing all distances (from request process to head)-----
116 19 26 0 32 49 19 54
-----Taking the minimum distance & updating head-----
Ln 159, Col 90 Spaces: 4 UTF-8 CRLF {} Java 1855
Type here to search 19°C Sunny 22-01-2023
```

```
File Edit Selection View Go Run Terminal Help disk_scheduling.java - Visual Studio Code
PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL
-----Showing all distances (from request process to head)-----
116 19 26 0 32 49 19 54
-----Taking the minimum distance & updating head-----
19
#head movement till now: 107
--current head -> 79

-----Showing all distances (from request process to head)-----
97 0 45 19 13 68 38 35
-----Taking the minimum distance & updating head-----
13
#head movement till now: 120
--current head -> 92

-----Showing all distances (from request process to head)-----
84 13 58 32 0 81 51 22
-----Taking the minimum distance & updating head-----
22
#head movement till now: 142
--current head -> 114

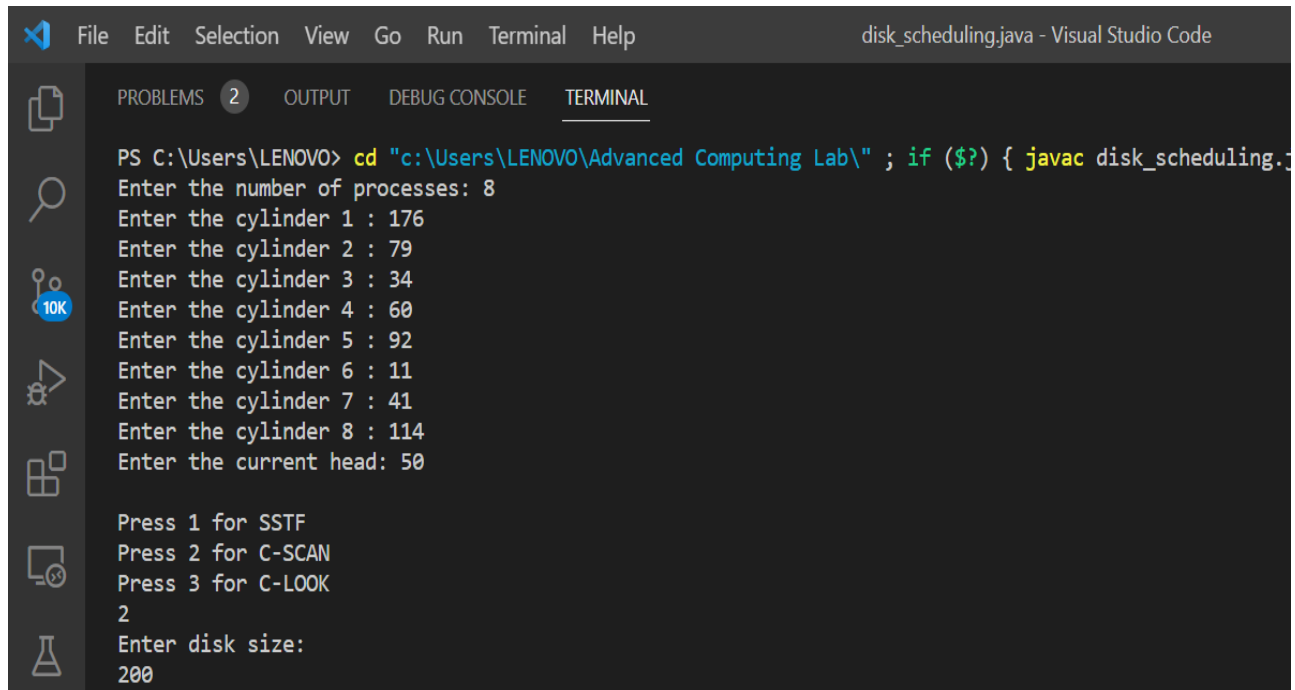
-----Showing all distances (from request process to head)-----
62 35 80 54 22 103 73 0
-----Taking the minimum distance & updating head-----
62
#head movement till now: 204
--current head -> 176

Total Head movement: 204

-----Sequence:-----
50 41 34 11 60 79 92 114 176
PS C:\Users\LENOVO\Advanced Computing Lab>
Ln 159, Col 90 Spaces: 4 UTF-8 CRLF {} Java 1855
Type here to search 19°C Sunny 22-01-2023
```

(ii) C-SCAN

INPUT



```
File Edit Selection View Go Run Terminal Help disk_scheduling.java - Visual Studio Code

PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL

PS C:\Users\LENOVO> cd "c:\Users\LENOVO\Advanced Computing Lab\" ; if ($?) { javac disk_scheduling.java ; java disk_scheduling.java }
Enter the number of processes: 8
Enter the cylinder 1 : 176
Enter the cylinder 2 : 79
Enter the cylinder 3 : 34
Enter the cylinder 4 : 60
Enter the cylinder 5 : 92
Enter the cylinder 6 : 11
Enter the cylinder 7 : 41
Enter the cylinder 8 : 114
Enter the current head: 50

Press 1 for SSTF
Press 2 for C-SCAN
Press 3 for C-LOOK
2
Enter disk size:
200
```

INTERMEDIATE STEPS & OUTPUT:

```
File Edit Selection View Go Run Terminal Help disk_scheduling.java - Visual Studio Code
PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL
---- Processes greater than head ----
176 79 60 92 114 199

---- Processes smaller than head ----
0 34 11 41
-----Taking the minimum value & making it new head-----
60
| 50 - 60 | = 10
#head movement till now: 10
--current head -> 60

-----Taking the minimum value & making it new head-----
79
| 60 - 79 | = 19
#head movement till now: 29
--current head -> 79

-----Taking the minimum value & making it new head-----
92
| 79 - 92 | = 13
#head movement till now: 42
--current head -> 92

-----Taking the minimum value & making it new head-----
114
| 92 - 114 | = 22
#head movement till now: 64
--current head -> 114

-----Taking the minimum value & making it new head-----
176
| 114 - 176 | = 62
#head movement till now: 126
--current head -> 176

-----Taking the minimum value & making it new head-----
199
| 176 - 199 | = 23
#head movement till now: 149
--current head -> 199

-----Taking the minimum value & making it new head-----
0
| 199 - 0 | = 199
#head movement till now: 348
--current head -> 0

-----Taking the minimum value & making it new head-----
11
| 0 - 11 | = 11
#head movement till now: 359
--current head -> 11

-----Taking the minimum value & making it new head-----
34
| 11 - 34 | = 23
#head movement till now: 382
--current head -> 34

-----Taking the minimum value & making it new head-----
41
| 34 - 41 | = 7
#head movement till now: 389
--current head -> 41

Total Head movement: 389

-----Sequence:-----
50 60 79 92 114 176 199 0 11 34 41
```

```
File Edit Selection View Go Run Terminal Help disk_scheduling.java - Visual Studio Code
PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL
--current head -> 176

-----Taking the minimum value & making it new head-----
199
| 176 - 199 | = 23
#head movement till now: 149
--current head -> 199

-----Taking the minimum value & making it new head-----
0
| 199 - 0 | = 199
#head movement till now: 348
--current head -> 0

-----Taking the minimum value & making it new head-----
11
| 0 - 11 | = 11
#head movement till now: 359
--current head -> 11

-----Taking the minimum value & making it new head-----
34
| 11 - 34 | = 23
#head movement till now: 382
--current head -> 34

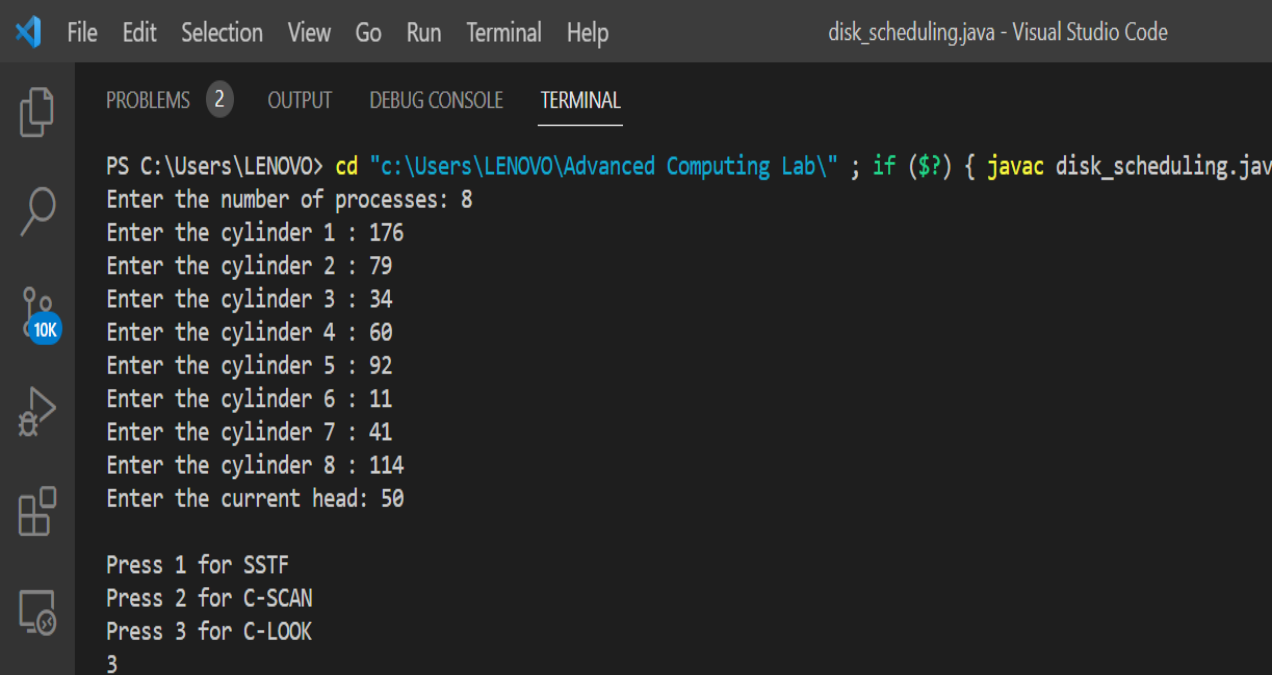
-----Taking the minimum value & making it new head-----
41
| 34 - 41 | = 7
#head movement till now: 389
--current head -> 41

Total Head movement: 389

-----Sequence:-----
50 60 79 92 114 176 199 0 11 34 41
```

(iii) C-LOOK

INPUT



```
File Edit Selection View Go Run Terminal Help disk_scheduling.java - Visual Studio Code

PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL

PS C:\Users\LENOVO> cd "c:\Users\LENOVO\Advanced Computing Lab\" ; if ($?) { javac disk_scheduling.java
Enter the number of processes: 8
Enter the cylinder 1 : 176
Enter the cylinder 2 : 79
Enter the cylinder 3 : 34
Enter the cylinder 4 : 60
Enter the cylinder 5 : 92
Enter the cylinder 6 : 11
Enter the cylinder 7 : 41
Enter the cylinder 8 : 114
Enter the current head: 50

Press 1 for SSTF
Press 2 for C-SCAN
Press 3 for C-LOOK
3
```

INTERMEDIATE STEPS & OUTPUT:

```
File Edit Selection View Go Run Terminal Help disk_scheduling.java - Visual Studio Code
PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL
----Processes greater than head ----
176 79 60 92 114
---- Processes smaller than head ---- 34 11 41
-----Taking the minimum distance & making it new head-----
60
| 50 - 60 | = 10
#head movement till now: 10
--current head -> 60

-----Taking the minimum distance & making it new head-----
79
| 60 - 79 | = 19
#head movement till now: 29
--current head -> 79

-----Taking the minimum distance & making it new head-----
92
| 79 - 92 | = 13
#head movement till now: 42
--current head -> 92

-----Taking the minimum distance & making it new head-----
114
| 92 - 114 | = 22
#head movement till now: 64
--current head -> 114

-----Taking the minimum distance & making it new head-----
176
| 114 - 176 | = 62
#head movement till now: 126
--current head -> 176

-----Taking the minimum distance & making it new head-----
11
| 176 - 11 | = 165
#head movement till now: 291

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```

```
File Edit Selection View Go Run Terminal Help disk_scheduling.java - Visual Studio Code
PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL
--current head -> 92

-----Taking the minimum distance & making it new head-----
114
| 92 - 114 | = 22
#head movement till now: 64
--current head -> 114

-----Taking the minimum distance & making it new head-----
176
| 114 - 176 | = 62
#head movement till now: 126
--current head -> 176

-----Taking the minimum distance & making it new head-----
11
| 176 - 11 | = 165
#head movement till now: 291
--current head -> 11

-----Taking the minimum distance & making it new head-----
34
| 11 - 34 | = 23
#head movement till now: 314
--current head -> 34

-----Taking the minimum distance & making it new head-----
41
| 34 - 41 | = 7
#head movement till now: 321
--current head -> 41

Total Head movement: 321

-----Sequence:-----
50 60 79 92 114 176 11 34 41
PS C:\Users\LENOVO\Advanced Computing Lab>
```