Practical No. 8

* Aim:- Implement Disk scheduling approach.

* Theory:-

Disk scheduling is a crucial aspect of OS design especially in system where multiple processor are contending for access to a short disk. It ensure efficient ~~util~~ utilization of disk resources & minimizes access latency.

Before delving into specific disk scheduling algorithm its essential to understand the basics concepts

- Disk access time:- The time taken to perform a read or write operation on the disk comprising seek time, rotational delay and transfer time.

- Seek time:- time taken by the disk arm to move to the desired track.

- Rotational delay:- Time taken to the desired disk sector to rotate under the disk head.

- Transfer time:- time taken to transfer data bet^n the disk & memory

- Disk sheduling algorithm:- Technique to determine the order in which disk I/o request are serviced.

It is a aspect of OS design influenced overall system performance and responsiveness.
By understanding different disk shecheduling algorithm & their implementation system administration and developers can optimise disk I/P operation to meet the demans of modern computing environmet efficientively.

* Result:- Hence we successfully implemented disk scheduling algorithm

P	T	D	K	Total
3M	3M	3M	6M	15M
Sign With date				

```
#include <stdio.h>

void fcfs(int requests[], int numRequests, int head) {
    int totalHeadMovement = 0;

    printf("FCFS Disk Scheduling Algorithm\n");
    printf("Request sequence: ");
    for (int i = 0; i < numRequests; i++) {
        printf("%d ", requests[i]);
    }
    printf("\n");

    printf("Head position: %d\n", head);

    for (int i = 0; i < numRequests; i++) {
        int request = requests[i];
        int movement = abs(request - head);
        totalHeadMovement += movement;
        printf("Move head from %d to %d (movement = %d)\n", head, request, movement);
        head = request;
    }

    printf("Total head movement: %d\n", totalHeadMovement);
}

int main() {
    int requests1[] = {10, 54, 21, 66, 88, 15};
    int numRequests1 = sizeof(requests1) / sizeof(requests1[0]);

    int head1 = 50;
    fcfs(requests1, numRequests1, head1);

    return 0;
}
```

Output:

```
/tmp/DvKDFrFgxu.c: In function 'fcfs':
/tmp/DvKDFrFgxu.c:17:24: warning: implicit declaration of function 'abs' [-Wimplicit-function-declaration]
   17 |         int movement = abs(request - head);
      |                        ^~~
/tmp/DvKDFrFgxu.c:2:1: note: include '<stdlib.h>' or provide a declaration of 'abs'
    1 | #include <stdio.h>
  +++ |+#include <stdlib.h>
    2 |
/tmp/DvKDFrFgxu.o
FCFS Disk Scheduling Algorithm
Request sequence: 10 54 21 66 88 15
Head position: 50
Move head from 50 to 10 (movement = 40)
Move head from 10 to 54 (movement = 44)
Move head from 54 to 21 (movement = 33)
Move head from 21 to 66 (movement = 45)
Move head from 66 to 88 (movement = 22)
Move head from 88 to 15 (movement = 73)
Total head movement: 257


=== Code Execution Successful ===
```