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37. Construct a C program to simulate the First Come First Served disk scheduling algorithm.

AIM

To design a C program that simulates the First Come First Served (FCFS) Disk Scheduling Algorithm, where disk requests are served in the order they arrive.

ALGORITHM

1. **Start**
2. Read the total number of disk requests and their corresponding disk track numbers.
3. Sort the disk track requests in the order they arrive (FCFS doesn't require sorting).
4. Start servicing the requests from the initial head position, one by one.
5. Calculate the total number of movements made by the disk arm.
6. Print the sequence of serviced requests and the total number of disk movements.
7. **Stop**

PROCEDURE

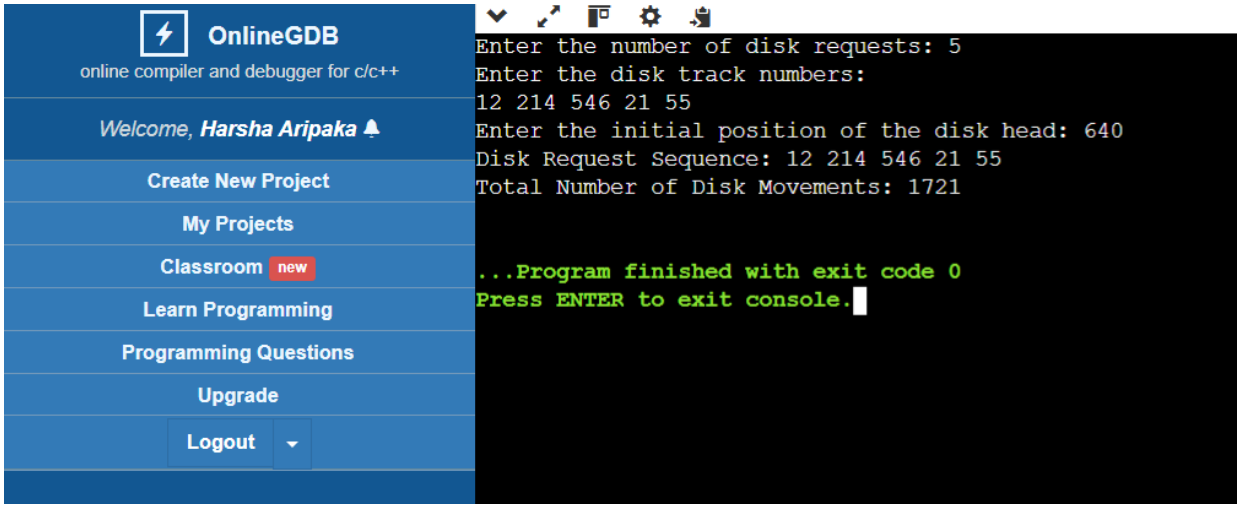
1. Include necessary libraries (stdio.h for input/output and stdlib.h for memory management).
2. Read the total number of disk requests and the track numbers.
3. Use a loop to process each disk request sequentially, and calculate the total movement.
4. Display the sequence in which the disk requests are processed and the total distance moved by the disk head.
5. **End**

CODE:

```
#include <stdio.h>

#include <stdlib.h>


void FCFS(int arr[], int n, int start) {

  int total_distance = 0;

  int current_position = start;


  printf("Disk Request Sequence: ");


  for (int i = 0; i < n; i++) {
```

```
    printf("%d ", arr[i]);
    total_distance += abs(arr[i] - current_position);
    current_position = arr[i];
  }

  printf("\nTotal Number of Disk Movements: %d\n", total_distance);
}

int main() {
  int n, start;

  printf("Enter the number of disk requests: ");
  scanf("%d", Cn);

  int arr[n];

  printf("Enter the disk track numbers:\n");
  for (int i = 0; i < n; i++) {
    scanf("%d", Carr[i]);
  }

  printf("Enter the initial position of the disk head: ");
  scanf("%d", Cstart);

  FCFS(arr, n, start);

  return 0;
}
```

OUTPUT:


OnlineGDB
online compiler and debugger for c/c++
Welcome, Harsha Aripaka
Create New Project
My Projects
Classroom new
Learn Programming
Programming Questions
Upgrade
Logout
Enter the number of disk requests: 5
Enter the disk track numbers:
12 214 546 21 55
Enter the initial position of the disk head: 640
Disk Request Sequence: 12 214 546 21 55
Total Number of Disk Movements: 1721
...Program finished with exit code 0
Press ENTER to exit console.