sstf

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>

int main() {
    int n;  // number of disk requests
    int head;  // initial head position
    int i, j;  // loop counters
    int completed = 0;  // to count how many requests are served

    printf("Enter number of disk requests: ");
    scanf("%d", &n);  // input total requests

    int request[n];  // array to store disk requests
    int visited[n];  // array to track if request is already served

    printf("Enter the disk request sequence:\n");
    for (i = 0; i < n; i++) {
        scanf("%d", &request[i]);  // input requests
        visited[i] = 0;  // mark all as unvisited initially
    }

    printf("Enter initial head position: ");
    scanf("%d", &head);  // input starting head position

    int total_seek_time = 0;  // total movement of head
    printf("\nSequence of head movement:\n");
    printf("%d", head);  // print initial position

    // Repeat until all requests are completed
```

```
while (completed < n) {
   int min_distance = 9999;  // store minimum distance (very large initially)
   int index = -1;  // store index of nearest request

   // Find the nearest unvisited request
   for (i = 0; i < n; i++) {
      if (!visited[i]) {  // if request not yet served
         int distance = abs(head - request[i]);  // calculate seek distance
         if (distance < min_distance) {  // check if it's nearest
            min_distance = distance;
            index = i;  // store index of that request
         }
      }
   }

   // Move head to the nearest request
   total_seek_time += min_distance;  // add distance to total seek time
   head = request[index];  // update head position
   visited[index] = 1;  // mark as visited
   completed++;  // increment completed requests

   printf(" -> %d", head);  // print head movement sequence
}

// After all requests are done, print result
printf("\n\nTotal Seek Time = %d", total_seek_time);
float avg_seek_time = (float)total_seek_time / n;  // calculate average
printf("\nAverage Seek Time = %.2f\n", avg_seek_time);

return 0;  // end program
```

}

Enter number of disk requests: 5

Enter the disk request sequence:

82 170 43 140 24

Enter initial head position: 50

Sequence of head movement:

50 -> 43 -> 24 -> 82 -> 140 -> 170

Total Seek Time = 208

Average Seek Time = 41.60