Exp:38

Code:

#include <stdio.h>

#include <stdlib.h>

int main() {

int n, head, direction, total\_head\_movement = 0;

printf("Enter the number of disk requests: ");

scanf("%d", &n);

int requests[n];

printf("Enter the disk requests:\n");

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

scanf("%d", &requests[i]);

}

printf("Enter the initial head position: ");

scanf("%d", &head);

printf("Enter the head movement direction (1 for right, 0 for left): ");

scanf("%d", &direction);

// Sort the requests to make it easier to simulate SCAN

for (int i = 0; i < n - 1; i++) {

for (int j = i + 1; j < n; j++) {

if ((direction == 1 && requests[i] > requests[j]) || (direction == 0 &&

requests[i] < requests[j])) {

int temp = requests[i];

requests[i] = requests[j];

requests[j] = temp;

}

}

}

int index = 0;

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

if ((direction == 1 && requests[i] > head) || (direction == 0 && requests[i] <

head)) {

index = i;

break;

}

}

if (direction == 1) {

for (int i = index; i < n; i++) {

total\_head\_movement += abs(requests[i] - head);

head = requests[i];

}

total\_head\_movement += abs(requests[n - 1] - (direction == 1 ? 0 : 0));

} else {

for (int i = index - 1; i >= 0; i--) {

total\_head\_movement += abs(requests[i] - head);

head = requests[i];

}

total\_head\_movement += abs(requests[0] - (direction == 1 ? 0 : 0));

}

printf("Total head movement is: %d\n", total\_head\_movement);

return 0;

}

Output:

