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#include <stdio.h>

#include <stdlib.h>

#define MAX 100

int compare(const void *a, const void *b) {
    return (*(int*)a - *(int*)b);
}

int main() {
    int head, n, total = 0, direction;
    float avg_seek_time;

    printf("Enter the initial head position: ");
    scanf("%d", &head);

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

    int requests[n];

    printf("Enter the disk request queue:\n");
    for (int i = 0; i < n; i++) {
        scanf("%d", &requests[i]);
    }

    // Sort the disk request queue
    qsort(requests, n, sizeof(int), compare);

    printf("Enter the direction (0 for left, 1 for right): ");
    scanf("%d", &direction);
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// Calculate total head movement

int index;
for (index = 0; index < n; index++) {
    if (requests[index] >= head) {
        break;
    }
}

int curr = (direction == 0) ? index - 1 : index;

while (1) {
    if(direction == 0) {
        if (curr < 0) {
            direction = 1;
            curr++;
            continue;
        }
    } else {
        if(curr >= n) {
            direction = 0;
            curr--;
            continue;
        }
    }

    total += abs(head - requests[curr]);
    head = requests[curr];

    if (direction == 0) {
        curr--;
    }
}

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    } else {

        curr++;

    }

    if (curr < 0 || curr >= n) {

        break;

    }

}

// Calculate average seek time

avg_seek_time = (float)total / n;

// Display results

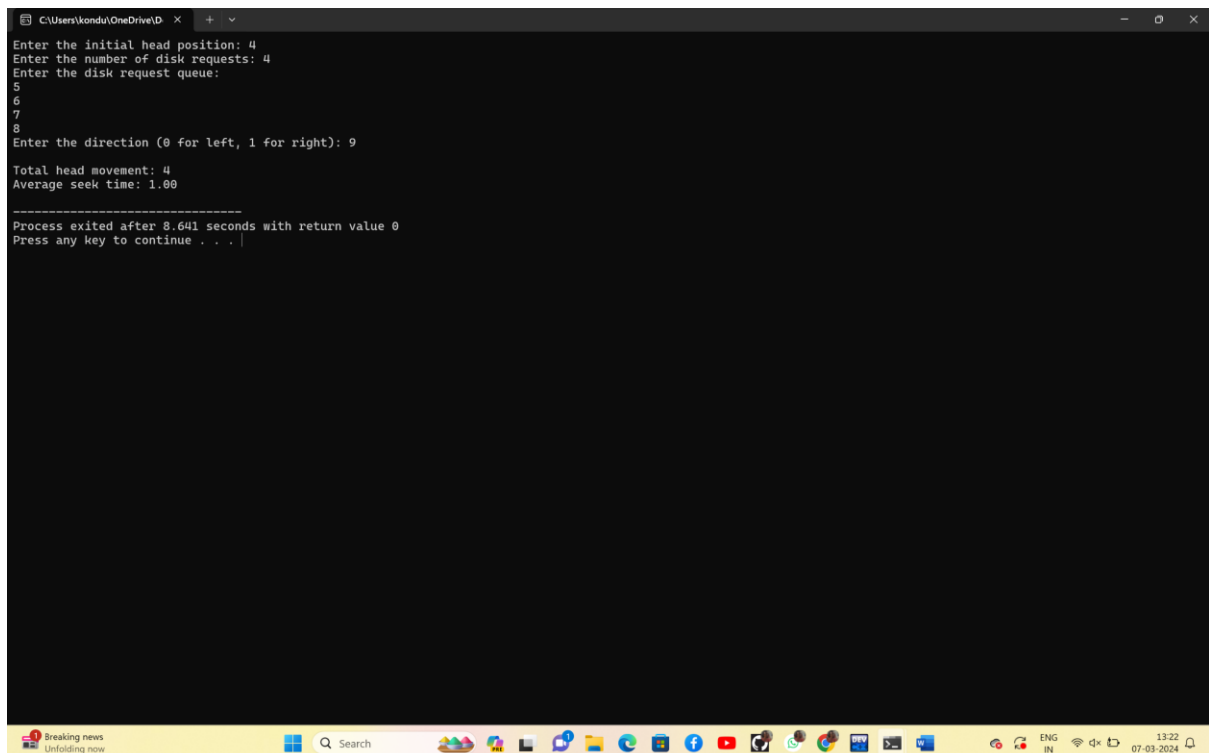
printf("\nTotal head movement: %d\n", total);

printf("Average seek time: %.2f\n", avg_seek_time);

return 0;

}

```



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C:\Users\kondur\OneDrive\ID >
Enter the initial head position: 4
Enter the number of disk requests: 4
Enter the disk request queue:
5
6
7
8
Enter the direction (0 for left, 1 for right): 9

Total head movement: 4
Average seek time: 1.00

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Process exited after 8.641 seconds with return value 0
Press any key to continue . . .

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