(38)#include <stdio.h>

#include <stdlib.h>

#define MAX 200

void sort(int arr[], int n) {

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

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

if (arr[j] > arr[j + 1]) {

int temp = arr[j];

arr[j] = arr[j + 1];

arr[j + 1] = temp;

}

}

}

}

void scan(int arr[], int n, int head, int direction) {

int seek\_sequence[MAX], index = 0, distance, total\_head\_movement = 0;

int left[MAX], right[MAX];

int l = 0, r = 0;

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

if (arr[i] < head)

left[l++] = arr[i];

else

right[r++] = arr[i];

}

sort(left, l);

sort(right, r);

if (direction == 0) {

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

seek\_sequence[index++] = left[i];

}

seek\_sequence[index++] = 0;

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

seek\_sequence[index++] = right[i];

}

} else {

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

seek\_sequence[index++] = right[i];

}

seek\_sequence[index++] = MAX - 1;

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

seek\_sequence[index++] = left[i];

}

}

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

distance = abs(seek\_sequence[i + 1] - seek\_sequence[i]);

total\_head\_movement += distance;

}

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

printf("Seek Sequence: ");

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

printf("%d ", seek\_sequence[i]);

}

printf("\n");

}

int main() {

int arr[] = { 98, 183, 37, 122, 14, 124, 65, 67 };

int head = 53;

int direction = 1; // 0 for left, 1 for right

int n = sizeof(arr) / sizeof(arr[0]);

scan(arr, n, head, direction);

return 0;

}

