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#include <stdio.h>
#include <stdlib.h>
int SSTF();
int SCAN();
int CLOOK();
int main(){
int ch, YN = 1, i, l, f;
char F[10], s[25];
for (i = 0; i < f; i++){
F[i] = -1;
}
do{
printf("\n\n\t********** MENU **********");
printf("\n\n\t1:SSTF\n\n\t2:SCAN\n\n\t3:CLOOK\n\n\t4:EXIT");
printf("\n\n\tEnter your choice: ");
scanf("%d", &ch);
switch (ch){
case 1:
for (i = 0; i < f; i++){
F[i] = -1;
}
SSTF();
break;
case 2:
for (i = 0; i < f; i++){
F[i] = -1;
}
SCAN();
break;
case 3:
for (i = 0; i < f; i++){
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F[i] = -1;
}
CLOOK();
break;
case 4:exit(0);
}
printf("\n\n\tDo u want to continue IF YES PRESS 1\n\n\tIF NO PRESS 0: ");
scanf("%d", &YN);
}
while (YN == 1);
return (0);
}
int SSTF(){
int RQ[100], i, n, TotalHeadMoment = 0, initial, count = 0;
printf("Enter the number of Requests\n");
scanf("%d", &n);
printf("Enter the Requests sequence\n");
for (i = 0; i < n; i++){
scanf("%d", &RQ[i]);
}
printf("Enter initial head position\n");
scanf("%d", &initial);
while (count != n){
int min = 1000, d, index;
for (i = 0; i < n; i++){
d = abs(RQ[i] - initial);
if (min > d){
min = d;
index = i;
}
}
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TotalHeadMoment = TotalHeadMoment + min;
initial = RQ[index];
RQ[index] = 1000;
count++;
}
printf("Total head movement is %d", TotalHeadMoment);
return 0;
}
int SCAN(){int RQ[100], i, j, n, TotalHeadMoment = 0, initial, size, move;
printf("Enter the number of Requests\n");
scanf("%d", &n);
printf("Enter the Requests sequence\n");
for (i = 0; i < n; i++) {
scanf("%d", &RQ[i]);
}
printf("Enter initial head position\n");
scanf("%d", &initial);
printf("Enter total disk size\n");
scanf("%d", &size);
printf("Enter the head movement direction for high 1 and for low 0\n");
scanf("%d", &move);
for (i = 0; i < n; i++){
for (j = 0; j < n - i - 1; j++){
if (RQ[j] > RQ[j + 1]){
int temp;
temp = RQ[j];
RQ[j] = RQ[j + 1];
RQ[j + 1] = temp;
}
}
}
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int index;
for (i = 0; i < n; i++){
if (initial < RQ[i]){
index = i;
break;
}
}
if (move == 1){
for (i = index; i < n; i++){
TotalHeadMoment = TotalHeadMoment + abs(RQ[i] - initial);
initial = RQ[i];
}
TotalHeadMoment = TotalHeadMoment + abs(size - RQ[i - 1] - 1);initial = size - 1;
for (i = index - 1; i >= 0; i--){
TotalHeadMoment = TotalHeadMoment + abs(RQ[i] - initial);
initial = RQ[i];
}
}
else{
for (i = index - 1; i >= 0; i--) {
TotalHeadMoment = TotalHeadMoment + abs(RQ[i] - initial);
initial = RQ[i];
}
TotalHeadMoment = TotalHeadMoment + abs(RQ[i + 1] - 0);
initial = 0;
for (i = index; i < n; i++){
TotalHeadMoment = TotalHeadMoment + abs(RQ[i] - initial);
initial = RQ[i];
}
}
printf("Total head movement is %d", TotalHeadMoment);
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return 0;
}
int CLOOK(){
int RQ[100], i, j, n, TotalHeadMoment = 0, initial, size, move;
printf("Enter the number of Requests\n");
scanf("%d", &n);
printf("Enter the Requests sequence\n");
for (i = 0; i < n; i++){
scanf("%d", &RQ[i]);
}
printf("Enter initial head position\n");
scanf("%d", &initial);
printf("Enter total disk size\n");
scanf("%d", &size);
printf("Enter the head movement direction for high 1 and for low 0\n");
scanf("%d", &move);
for (i = 0; i < n; i++){for (j = 0; j < n - i - 1; j++){
if (RQ[j] > RQ[j + 1]){
int temp;
temp = RQ[j];
RQ[j] = RQ[j + 1]; RQ[j + 1] = temp;
}
}
}
int index;
for (i = 0; i < n; i++){
if (initial < RQ[i]){
index = i;
break;
}
}
```

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if (move == 1){
for (i = index; i < n; i++){
TotalHeadMoment = TotalHeadMoment + abs(RQ[i] - initial);
initial = RQ[i];
}
for (i = 0; i < index; i++){
TotalHeadMoment = TotalHeadMoment + abs(RQ[i] - initial);
initial = RQ[i];
}
}
else{
for (i = index - 1; i >= 0; i--){
TotalHeadMoment = TotalHeadMoment + abs(RQ[i] - initial);
initial = RQ[i];
}
for (i = n - 1; i >= index; i--){
TotalHeadMoment = TotalHeadMoment + abs(RQ[i] - initial);
initial = RQ[i];
}
}
printf("Total head movement is %d", TotalHeadMoment);return 0;
}
```