**Assignment** 8 **(OS-lab)** Name : Jayesh Patil

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Implement the C program for Disk Scheduling Algorit

// Roll number:- T21287

#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

{

system("clear");

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++)

{

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);

}

//SSTF Algorithm 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;

}

}

TotalHeadMoment = TotalHeadMoment + min; initial = RQ[index];

RQ[index] = 1000; count++;

}

printf("Total head movement is %d", TotalHeadMoment); return 0;

}

//SCAN Algorithm 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;

}

}

}

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); return 0;

}

//C-LOOK Algorithm 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;

}

}

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;

}

// \*\*\*\*\*\*\*\*\*\*\* MENU \*\*\*\*\*\*\*\*\*\*\*

// 1:SSTF

// 2:SCAN

// 3:CLOOK

// 4:EXIT

// Enter your choice: 1

// Enter the number of Requests

// 8

// Enter the Requests sequence

// 95 180 34 119 11 123 62 64

// Enter initial head position

// 50

// Total head movement is 236

// Do u want to continue IF YES PRESS 1

// IF NO PRESS 0 : 1

// \*\*\*\*\*\*\*\*\*\*\* MENU \*\*\*\*\*\*\*\*\*\*\*

// 1:SSTF

// 2:SCAN

// 3:CLOOK

// 4:EXIT

// Enter your choice: 2

// Enter the number of Requests

// 8

// Enter the Requests sequence

// 95 180 34 119 11 123 62 64

// Enter initial head position

// 50

// Enter total disk size

// 200

// Enter the head movement direction for high 1 and for low 0

// 1

// Total head movement is 337

// Do u want to continue IF YES PRESS 1

// IF NO PRESS 0 : 1

// \*\*\*\*\*\*\*\*\*\*\* MENU \*\*\*\*\*\*\*\*\*\*\*

// 1:SSTF

// 2:SCAN

// 3:CLOOK

// 4:EXIT

// Enter your choice: 3

// Enter the number of Requests

// 7

// Enter the Requests sequence

// 95 180 34 119 11 123 62 64

// Enter initial head position

// Enter total disk size

// 200

// Enter the head movement direction for high 1 and for low 0

// 1

// Total head movement is 336

// Do u want to continue IF YES PRESS 1

// IF NO PRESS 0 : 1

// \*\*\*\*\*\*\*\*\*\*\* MENU \*\*\*\*\*\*\*\*\*\*\*

// 1:SSTF

// 2:SCAN

// 3:CLOOK

// 4:EXIT

// Enter your choice: 4