**Program 13:**

1. Write a program to implement the FCFS elevator disk scheduling algorithm. The program should give detail about each disk movement from starting head position (input from the user) and calculate average head movement.
2. Write a program to implement the SSTF elevator disk scheduling algorithm. The program should give detail about each disk movement from starting head position (input from the user) and calculate average head movement.

**Answer:**

1. Source code:

#include <iostream>

#include <vector>

#include <cmath>

using namespace std;

int algo(vector<int> programs,int pos){

cout<<"Disk Movement:-"<<endl;

cout<<"From\tto\tDisk Movement"<<endl;

int sum=0,diff;

for (int i=0; i<(int)programs.size();i++){

diff=abs(pos-programs[i]);

sum+=diff;

cout<<pos<<"\t"<<programs[i]<<"\t"<<diff<<endl;

pos=programs[i];

}

return sum;

}

int main()

{

int n,pos;

cout << "Enter number of programs and Initial position of Head"<<endl;

cin>>n>>pos;

vector<int> programs(n);

cout<<"Enter programs"<<endl;

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

cin>>programs[i];

}

int total\_movements=algo(programs,pos);

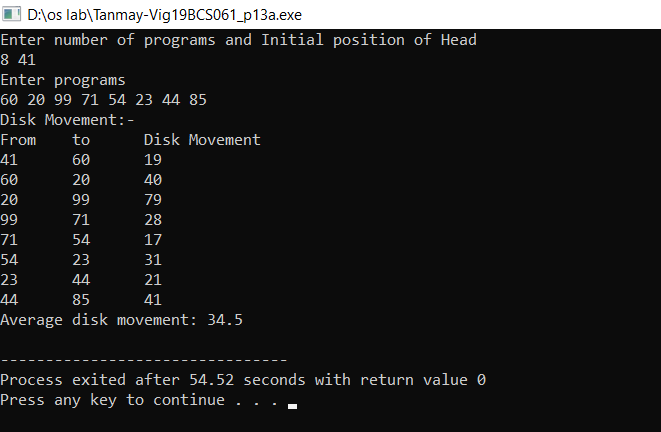
total\_movements=(float)total\_movements;

cout<<"Average disk movement: "<<total\_movements/(float)n<<endl;

return 0;

}

Output:



1. Source Code:

#include <iostream>

#include <vector>

#include <cmath>

using namespace std;

int algo(vector<int> programs, int pos){

int total\_movement=0, diff,next;

cout<<"Disk Movement:-"<<endl;

cout<<"From\tto\tDisk Movement"<<endl;

while(!programs.empty()){

next=0;

for (int i=0; i!=(int)programs.size(); i++){

if(abs(programs[i]-pos)<abs(programs[next]-pos)){

next=i;

}

}

diff=abs(programs[next]-pos);

total\_movement+=diff;

cout<<pos<<"\t"<<programs[next]<<"\t"<<diff<<endl;

pos=programs[next];

programs.erase(programs.begin()+next);

}

return total\_movement;

}

int main()

{

int n,pos;

cout << "Enter number of programs and Initial position of Head"<<endl;

cin>>n>>pos;

vector<int> programs(n);

cout<<"Enter programs"<<endl;

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

cin>>programs[i];

}

int total\_movements=algo(programs,pos);

total\_movements=(float)total\_movements;

cout<<"Average disk movement: "<<total\_movements/(float)n<<endl;

return 0;

}

Output:

