Exam: OS Lab Exam

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Answer 1

Source Code:

```
#include <iostream>

#include <vector>

#include <cmath>

/*

sstf

1. find closest point to current pos

3. table to show disk movement

2. total seek time

*/

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;
```

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

            pos=programs[next];

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

        }

        return total_movement;

    }

    int main()

    {

        int n,pos,time;

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

        cin>>n>>pos;

        cout<<"Enter seek time per cilynder"<<endl;

        cin>>time;

        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<<"Total seek Time: "<<total_movements*time<<endl;

        return 0;

    }
```

Output:

```
D:\os lab\exam\1.exe                                            —    □    ✕

Enter number of programs and Initial position of Head
8 50
Enter seek time per cilynder
6
Enter programs
176 79 34 60 92 11 41 114
Disk Movement:-
From    to      Disk Movement
50      41      9
41      34      7
34      11      23
11      60      49
60      79      19
79      92      13
92      114     22
114     176     62
Total seek Time: 1224

---------------------------------
Process exited after 94.96 seconds with return value 0
Press any key to continue . . .
```