Experiment no 9

To implement I/O scheduling algorithms (FCFS and SCAN).

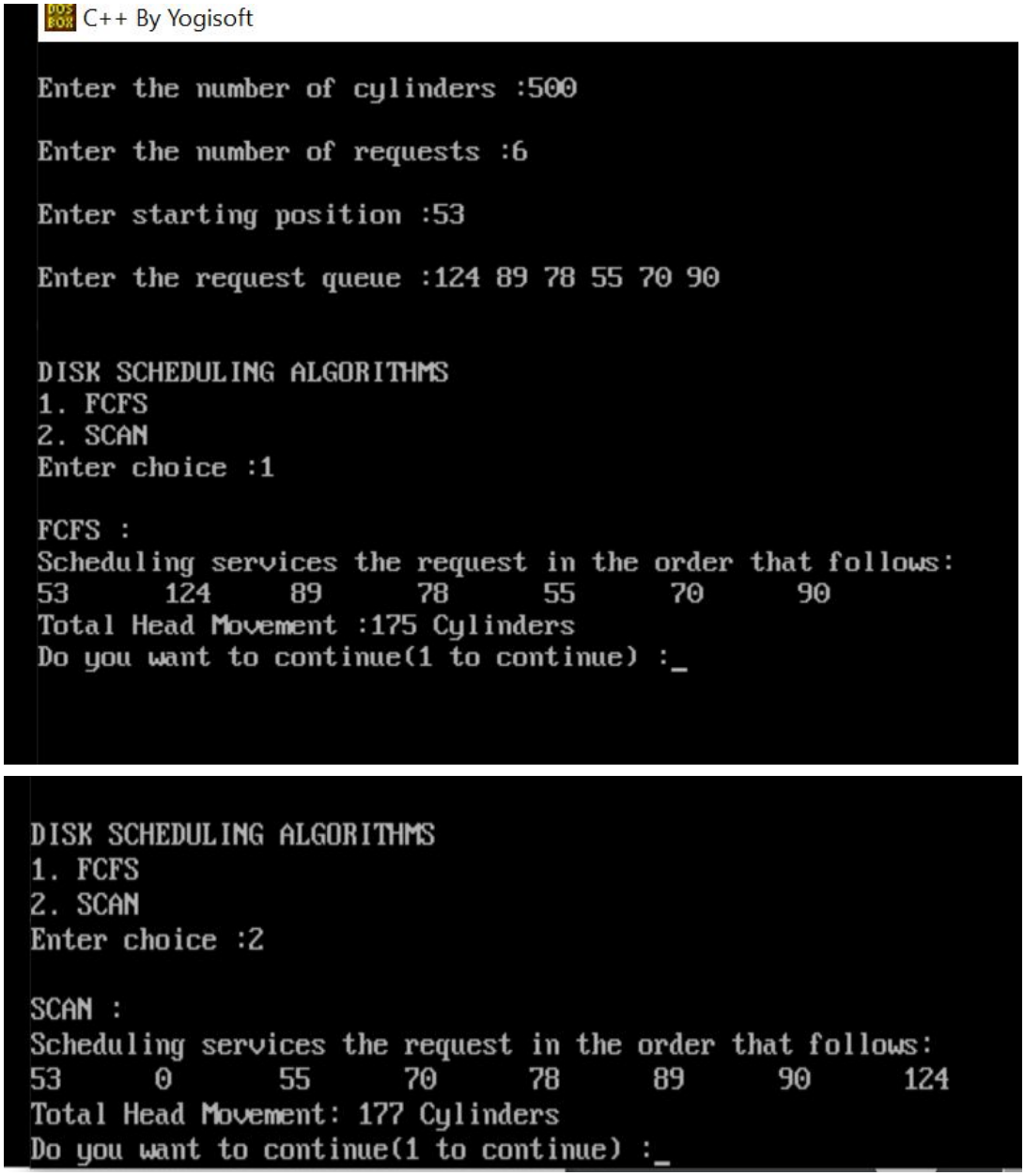
```
#include<stdio.h>
int absolute(int a,int b)
 {int c;
 c=a-b;
 if(c<0)
 return -c;
 else
 return c;
 }
void main()
 {int choice,m,n,x,start,i,j,pos,min,a[15],count;
 count=0;
 clrscr();
 printf("\nEnter the number of cylinders :");
 scanf("%d",&m);
 printf("\nEnter the number of requests :");
 scanf("%d",&n);
 printf("\nEnter starting position :");
 scanf("%d",&start);
 printf("\nEnter the request queue :");
 for(i=0;i<n;i++)
 {scanf("%d",&a[i]);
 if(a[i]>=m)
```

```
{printf("\ninvalid input");
 scanf("%d",&a[i]);
 }
 }
 do
 {printf("\n\nDISK SCHEDULING ALGORITHMS\n1. FCFS\n2. SCAN");
printf("\nEnter choice :");
scanf("%d",&choice);
count=0;
x=start;
switch(choice)
 {case 1:printf("\nFCFS :\n");
 printf("Scheduling services the request in the order that
follows:\n%d\t",start);
 for(i=0;i<n;i++)
 {x-=a[i];
 if(x<0)
 x=-x;
 count+=x;
 x=a[i];
 printf("%d\t",x);
 }
 printf("\nTotal Head Movement :%d Cylinders",count);
 break;
 case 2:printf("\nSCAN :\n");
```

```
 printf("Scheduling services the request in the order that follows:\n");
 count=0;
 pos=0;
 for(i=0;i<n;i++)
 for(j=0;j<n-i-1;j++)
 if(a[j]>a[j+1])
 {x=a[j];
 a[j]=a[j+1];
 a[j+1]=x;
 }
 for(i=0;i<n;i++)
 if(a[i]<start)
 pos++;
 for(i=0;i<pos;i++)
 for(j=0;j<pos-i-1;j++)
if(a[j]<a[j+1])
 {x=a[j];
a[j]=a[j+1];
a[j+1]=x;
}
 x=start;
 printf("%d\t",x);
 for(i=0;i<pos;i++)
{count+=absolute(a[i],x);
x=a[i];
```

```
printf("%d\t",x);
}
 count+=absolute(x,0);
 x=0;
 printf("%d\t",x);
 for(i=pos;i<n;i++)
{count+=absolute(a[i],x);
x=a[i];
printf("%d\t",x);
}
 printf("\nTotal Head Movement: %d Cylinders",count);
 break;
 }
printf("\nDo you want to continue(1 to continue) :");
scanf("%d",&choice);
}while(choice==1);
 }
```

Output:


C++ By Yogisoft
Enter the number of cylinders :500
Enter the number of requests :6
Enter starting position :53
Enter the request queue :124 89 78 55 70 90
DISK SCHEDULING ALGORITHMS
1. FCFS
2. SCAN
Enter choice :1
FCFS :
Scheduling services the request in the order that follows:
53 124 89 78 55 70 90
Total Head Movement :175 Cylinders
Do you want to continue(1 to continue) :_

DISK SCHEDULING ALGORITHMS
1. FCFS
2. SCAN
Enter choice :2
SCAN :
Scheduling services the request in the order that follows:
53 0 55 70 78 89 90 124
Total Head Movement: 177 Cylinders
Do you want to continue(1 to continue) :_