OS Experiment 9

Roll NO: C114
NAME: Pinky Pamecha
SAPID: 60004220056
Batch: C2-2

Aim: To implement Disk Scheduling Algorithms (FCFS, STF, SCAN, C-LOOK)

FCFS:

Code:

```
#include<stdio.h>
#include<stdlib.h>

void main()
{
   int rq[20], dist=0, min,n,initial,i;     printf("enter initial
position: ");     scanf("%d",&initial);
   printf("enter number of requests: ");
scanf("%d",&n);     printf("enter requests: ");
for(i=0;i<n;i++){
      scanf("%d",&rq[i]);
   }
   for(i=0;i<n;i++)
   {
      dist=dist+abs(rq[i]-initial);
      initial=rq[i];
   }
   printf("Total head moment is %d",dist);     printf("\nRequests resolved in
following order: ");     for(i=0;i<n;i++){
      printf("%d\t",rq[i]);
   }
}
```

Output:

```
enter initial position: 50
enter number of requests: 8
enter requests: 95 180 34 119 11 123 62 64
Total head moment is 644
Requests resolved in following order: 95        180     34      119     11      123     62      64
```

SSTF:

Code:

```
#include<stdio.h> #include<stdlib.h>
void main()
{
```

```
   int rq[20], dist=0, min,n,initial,i,count=0,r[20];
printf("enter initial position: ");     scanf("%d",&initial);
printf("enter number of requests: ");     scanf("%d",&n);
printf("enter requests: ");     for(i=0;i<n;i++){
scanf("%d",&rq[i]);        r[i]=0;
   }
   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;
           r[count] = rq[i];
        }
      }
      dist=dist+min;
initial=rq[index];        rq[index]=1000;
      count++;
   }
   printf("Total head movement is %d",dist);     printf("\nRequests resolved
in following order: ");
   for(i=0;i<n;i++){
      printf("%d\t",r[i]);
   }
}
```

Output:

```
enter initial position: 50
enter number of requests: 8
enter requests: 95 180 34 119 11 123 62 64
Total head movement is 236
Requests resolved in following order: 62        64      34      11      95      119     123     180
```

Scan:

Code:

```
#include<stdio.h> #include<stdlib.h>
void main()
{
   int rq[20], r[20], dist=0, min,n,initial,i,j,size,count=0,index,temp;     printf("enter
initial position: ");     scanf("%d",&initial);      printf("Enter total disk size: ");
   scanf("%d",&size);
   printf("enter number of requests: ");
scanf("%d",&n);     printf("enter requests: ");
for(i=0;i<n;i++){
      scanf("%d",&rq[i]);
   }
    for(i=0;i<n;i++)
```

```
  {
    for(j=0;j<n-i-1;j++)
    {
      if(rq[j]>rq[j+1])
      {
        temp=rq[j];             rq[j]=rq[j+1];
        rq[j+1]=temp;
      }
    }
  }
  for(i=0;i<n;i++)
  {
    if(initial<rq[i])
    {
index=i;
break;
    }
  }

    for(i=index;i<n;i++)
    {
      dist=dist+abs(rq[i]-initial);
      initial=rq[i];          r[count]
= rq[i];
      count++;
    }
    //  last movement for max size        dist=dist+abs(size-rq[i-1]-1);
    initial = size-1;       r[count] =
size - 1;       count++;
    for(i=index-1;i>=0;i--)
    {
       dist=dist+abs(rq[i]-initial);
       initial=rq[i];          r[count]
= rq[i];
       count++;
    }

  printf("Total head moment is %d",dist);    printf("\nRequests resolved in
following order: ");    for(i=0;i<n;i++){
    printf("%d\t",rq[i]);  }
}
```

Output:

```
enter initial position: 50
Enter total disk size: 200
enter number of requests: 8
enter requests: 95 180 34 119 11 123 62 64
Total head moment is 337
Requests resolved in following order: 11        34      62      64      95      119     123     180
```