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SE-4-D

EXPERIMENT N0-10

Write a program in C to do disk scheduling SCAN and C-SCAN

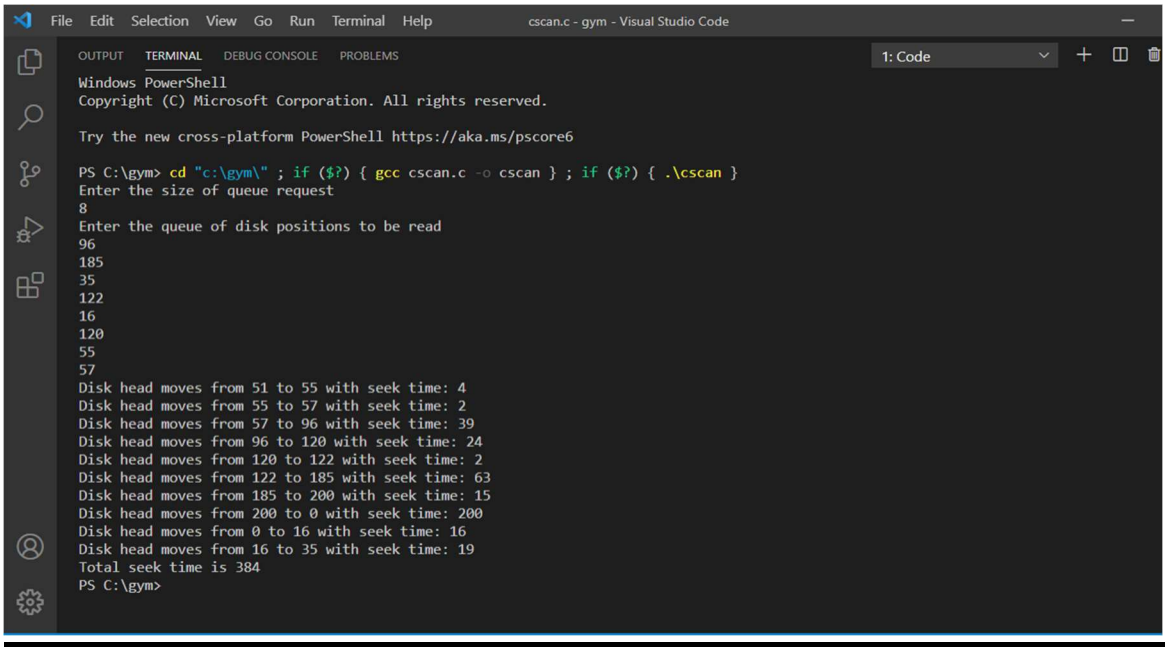
C-SCAN CODE:

```
#include<stdio.h>
int main()
{
	int queue[20],n,head,i,j,k,seek=0,max,diff,temp,queue1[20],queue2[20],
		temp1=0,temp2=0;
	float avg;
	printf("Enter the max range of disk\n");
	scanf("%d",&max);
	printf("Enter the initial head position\n");
	scanf("%d",&head);
	printf("Enter the size of queue request\n");
	scanf("%d",&n);
	printf("Enter the queue of disk positions to be read\n");
	for(i=1;i<=n;i++)
	{
		scanf("%d",&temp);
		if(temp>=head)
		{
			queue1[temp1]=temp;
			temp1++;
		}
		else
		{
			queue2[temp2]=temp;
```

```
                temp2++;
        }
}
for(i=0;i<temp1-1;i++)
{
        for(j=i+1;j<temp1;j++)
        {
                if(queue1[i]>queue1[j])
                {
                        temp=queue1[i];
                        queue1[i]=queue1[j];
                        queue1[j]=temp;
                }
        }
}
for(i=0;i<temp2-1;i++)
{
        for(j=i+1;j<temp2;j++)
        {
                if(queue2[i]>queue2[j])
                {
                        temp=queue2[i];
                        queue2[i]=queue2[j];
                        queue2[j]=temp;
                }
        }
}
```

```
        for(i=1,j=0;j<temp1;i++,j++)
        queue[i]=queue1[j];
        queue[i]=max;
        queue[i+1]=0;
        for(i=temp1+3,j=0;j<temp2;i++,j++)
        queue[i]=queue2[j];
        queue[0]=head;
        for(j=0;j<=n+1;j++)
        {
                diff=abs(queue[j+1]-queue[j]);
                seek+=diff;
                printf("Disk head moves from %d to %d with seek time:
%d\n",queue[j],queue[j+1],diff);
        }
        printf("Total seek time is %d\n",seek);
        return 0;
}
```

OUTPUT:



SCAN CODE:

```
#include<stdio.h>
int absoluteValue(int);
void main()
{
   int queue[25],n,headposition,i,j,k,seek=0, maxrange,
   difference,temp,queue1[20],queue2[20],temp1=0,temp2=0;
   float averageSeekTime;

   printf("Enter the maximum range of Disk: ");
   scanf("%d",&maxrange);

   printf("Enter the number of queue requests: ");
   scanf("%d",&n);

   printf("Enter the initial head position: ");
   scanf("%d",&headposition);

   printf("Enter the disk positions to be read(queue): ");
   for(i=1;i<=n;i++)
   {
      scanf("%d",&temp);

      if(temp>headposition)
      {
         queue1[temp1]=temp;
         temp1++;
```

```
    }
    else
    {
        queue2[temp2]=temp;
        temp2++;
    }
}

for(i=0;i<temp1-1;i++)
{
    for(j=i+1;j<temp1;j++)
    {
        if(queue1[i]>queue1[j])
        {
            temp=queue1[i];
            queue1[i]=queue1[j];
            queue1[j]=temp;
        }
    }
}

for(i=0;i<temp2-1;i++)
{
    for(j=i+1;j<temp2;j++)
    {
        if(queue2[i]<queue2[j])
        {
```

```
            temp=queue2[i];
            queue2[i]=queue2[j];
            queue2[j]=temp;
        }
    }
}

for(i=1,j=0;j<temp1;i++,j++)
{
    queue[i]=queue1[j];
}

queue[i]=maxrange;

for(i=temp1+2,j=0;j<temp2;i++,j++)
{
    queue[i]=queue2[j];
}

queue[i]=0;

queue[0]=headposition;

for(j=0; j<=n; j++)
{

    difference = absoluteValue(queue[j+1]-queue[j]);
```

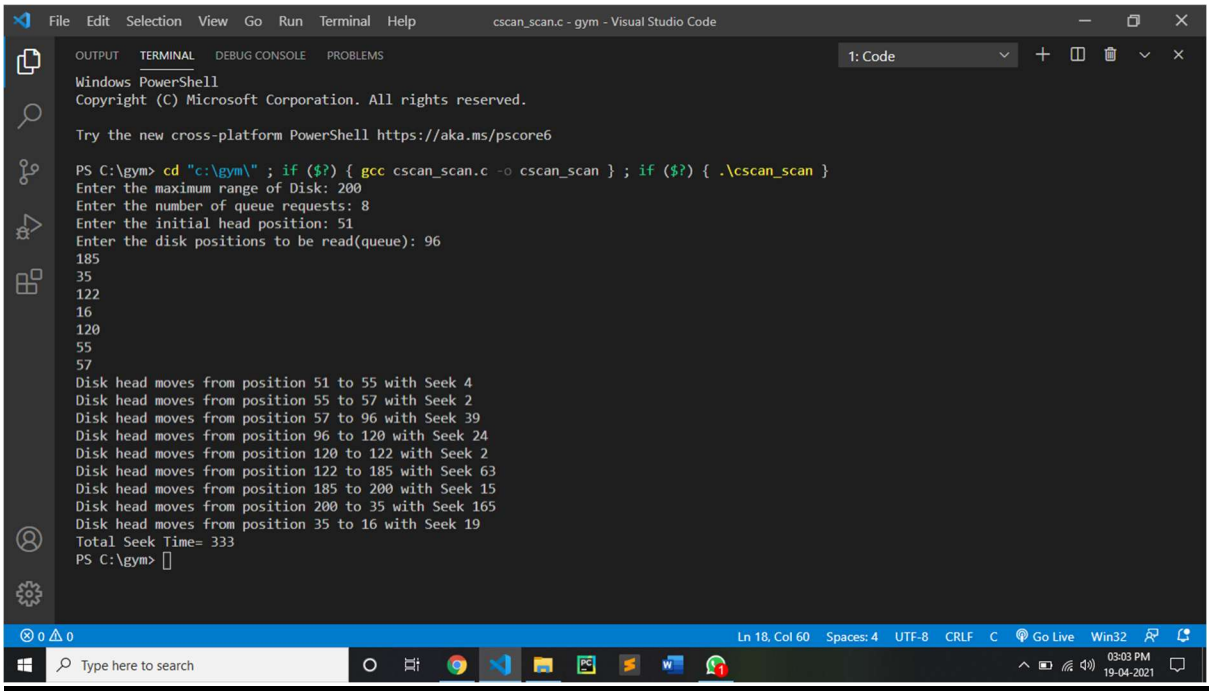
```
        seek = seek + difference;

        printf("Disk head moves from position %d to %d with Seek %d \n",
        queue[j], queue[j+1], difference);
    }


    printf("Total Seek Time= %d\n", seek);
}

int absoluteValue(int x)
{
    if(x>0)
    {
        return x;
    }
    else
    {
        return x*-1;
    }
}
```

OUTPUT:


File Edit Selection View Go Run Terminal Help
cscan_scan.c - gym - Visual Studio Code
OUTPUT TERMINAL DEBUG CONSOLE PROBLEMS
1: Code
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Try the new cross-platform PowerShell https://aka.ms/pscore6
PS C:\gym> cd "c:\gym\" ; if ($?) { gcc cscan_scan.c -o cscan_scan } ; if ($?) { .\cscan_scan }
Enter the maximum range of Disk: 200
Enter the number of queue requests: 8
Enter the initial head position: 51
Enter the disk positions to be read(queue): 96
185
35
122
16
120
55
57
Disk head moves from position 51 to 55 with Seek 4
Disk head moves from position 55 to 57 with Seek 2
Disk head moves from position 57 to 96 with Seek 39
Disk head moves from position 96 to 120 with Seek 24
Disk head moves from position 120 to 122 with Seek 2
Disk head moves from position 122 to 185 with Seek 63
Disk head moves from position 185 to 200 with Seek 15
Disk head moves from position 200 to 35 with Seek 165
Disk head moves from position 35 to 16 with Seek 19
Total Seek Time= 333
PS C:\gym>
Ln 18, Col 60 Spaces: 4 UTF-8 CRLF C Go Live Win32
Type here to search
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19-04-2021