Name- Aman Tiwari
U.Rollno- 2023037
Student ID- 20051096
Date - 27/8/2021
Course- Bsc. IT
Semester- 2
Section- A

Branch- Dehradun
Subjectname- Operating System Practical
Subjectcode- PBI-202
Pageno- 1

Q1

```
#include<stdio.h>
int main(){
    int i,j, nblocks, nfiles, temp, top=0;
    int frag[10], blocks[10], files[10];
    static int block_arr[10], files_arr[10];
    printf("\n enter the total no. of blocks: ");
    scanf("%d", &nblocks);
    printf("\n enter the total no. of files: ");
    scanf("%d", &nfiles);
    printf("\n enter the size of the blocks: \n");
    for(i=0; i<nfiles; i++){
        printf("block no.%d: \t", i+1);
        scanf("%d", &blocks[i]);
    }
    printf("enter the size of the files: \n");
    for(i=0; i<nfiles; i++){
        printf("file no.%d: \t", i+1);
        scanf("%d", &files[i]);
    }
    for(i=0; i<nfiles; i++){
        for(j=0; j<nblock; j++){
            if(block_arr[j] != 1){
                temp= blocks[j]-files[i];
```

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```
            if (temp>=0){
                if (top<temp){
                    file_arr[i]=j;
                    top=temp;
                }
            }
        }
        frag[i]=top;
        block_arr[file_arr[i]]=1;
        top=0;
    }
}
printf("\nfile number\t file size\t block number\t block size\t fragment");
for(i=0;i<nfiles;i++){
    printf("\n%d\t\t%d\t\t%d\t\t%d\t\t%d",i,files[i],
            files_arr[i],blocks[file_arr[i]],frag[i]);
}
printf("\n");
return 0;
}
```

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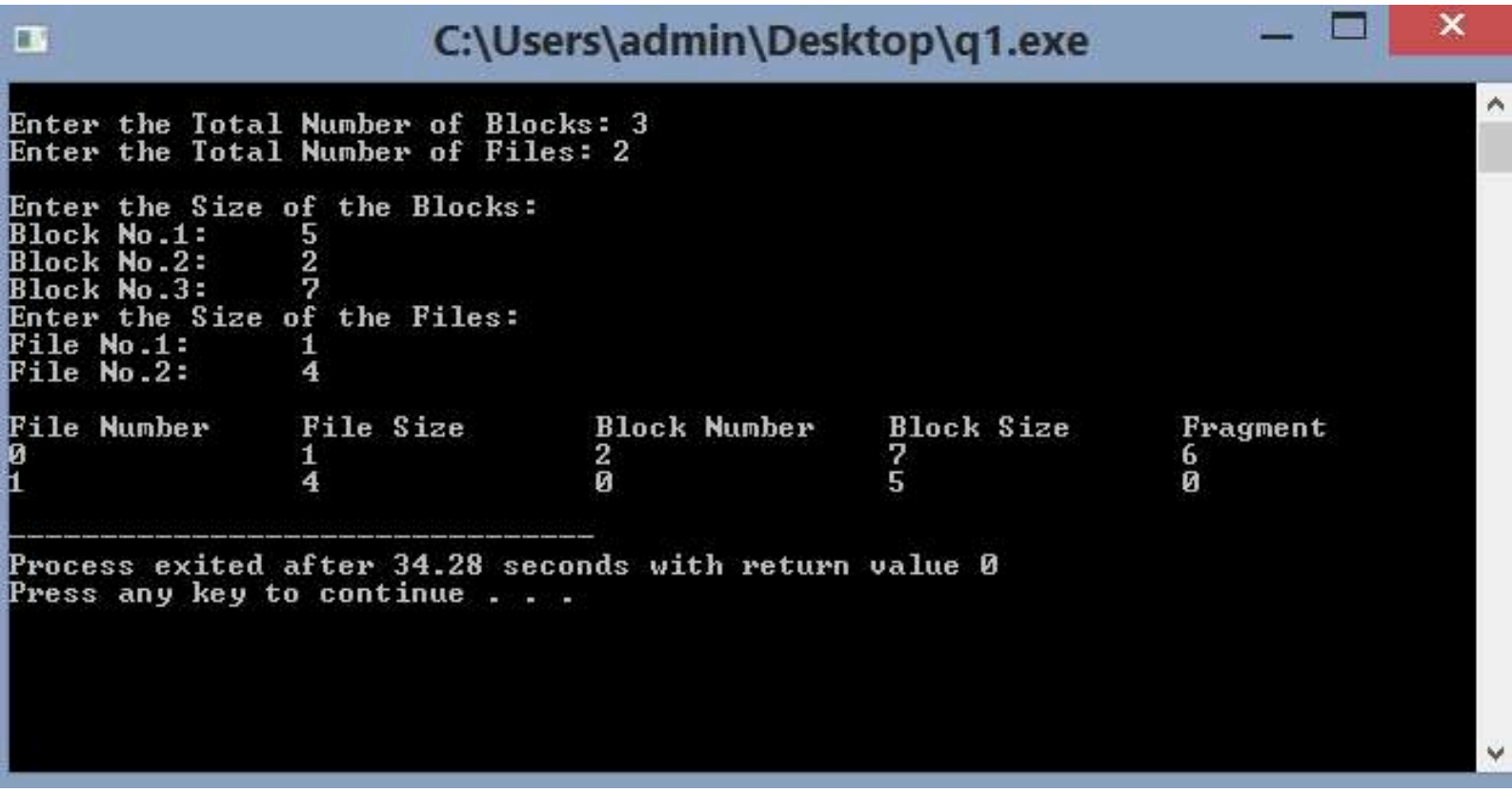
C:\Users\admin\Desktop\q1.exe
Enter the Total Number of Blocks: 3
Enter the Total Number of Files: 2
Enter the Size of the Blocks:
Block No.1: 5
Block No.2: 2
Block No.3: 7
Enter the Size of the Files:
File No.1: 1
File No.2: 4
File Number File Size Block Number Block Size Fragment
0 1 2 7 6
1 4 0 5 0
Process exited after 34.28 seconds with return value 0
Press any key to continue . . .

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Subject code- BI 202
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Q2

```
#include <stdio.h>
int absolute value (int x) {
    if (x > 0) {
        return x;
    } else {
        return x * -1;
    }
}
int main() {
    int queue[25], n, head position, i, j, k, seek=0, Max range, diff,
    temp, queue1[20], queue2[20], temp1=0, temp2=0;
    float average seek time;
    printf("enter the maximum range of disk: ");
    scanf("%d", &Max range);
    printf("enter the number of queue requests: ");
    scanf("%d", &n);
    printf("enter the initial head position: ");
    scanf("%d", &head position);
    printf("enter the disk positions to be read: ");
    for(i=1; i<=n; i++) {
        scanf("%d", &temp);
        if(temp > head position) {
            queue1[temp1] = temp;
            temp++;
```

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```
    }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=1,j=0;j<temp1;i++,j++){
    queue[i]=queue[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++){
    diff=absolute value(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], diff);
}averageseektime=seek/(float)n;
printf("totalseek time=%d\n", seek);
printf("averageseek time=%f\n", averageseek time);
}
```

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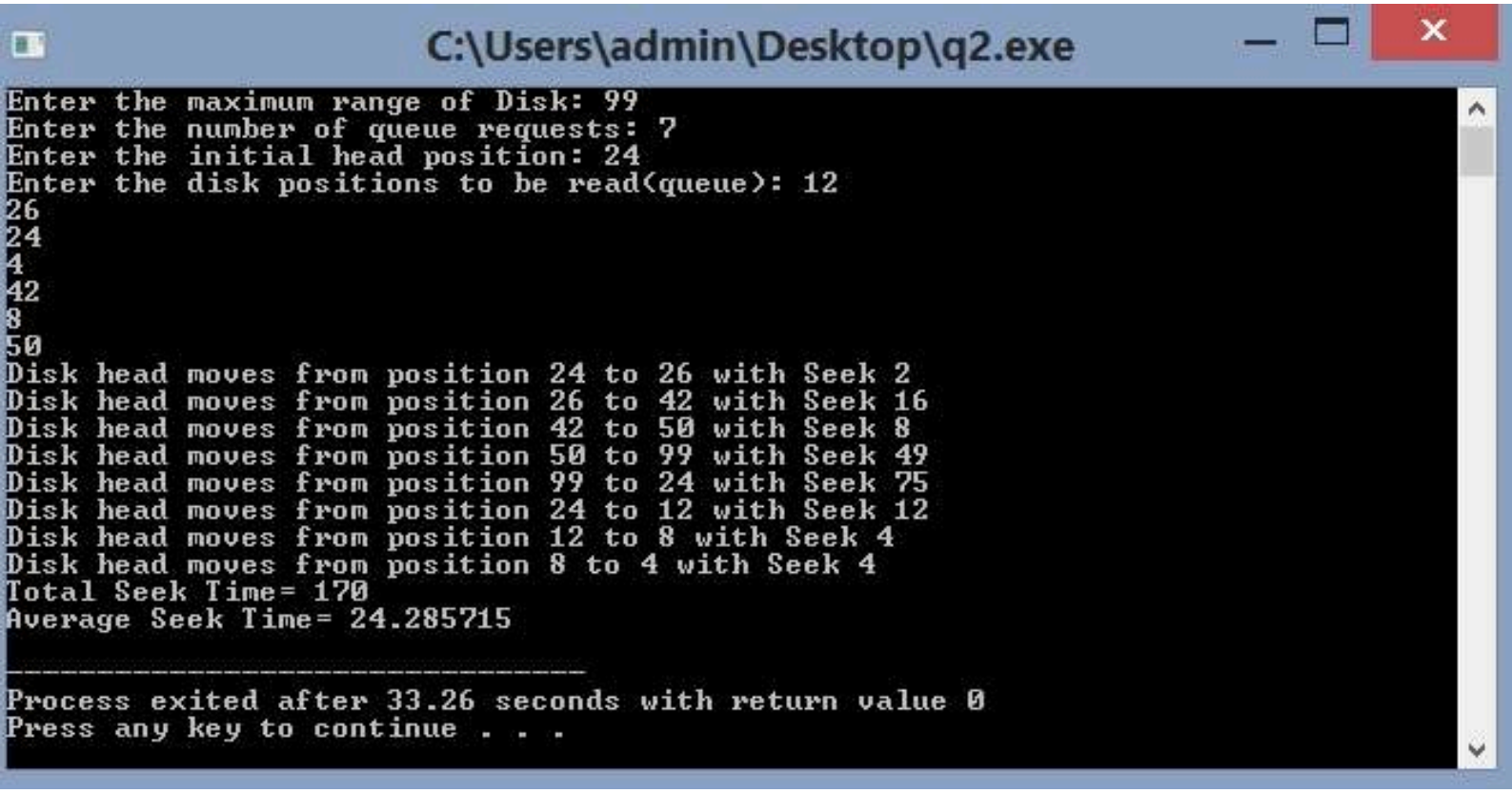
C:\Users\admin\Desktop\q2.exe
Enter the maximum range of Disk: 99
Enter the number of queue requests: 7
Enter the initial head position: 24
Enter the disk positions to be read(queue): 12
26
24
4
42
8
50
Disk head moves from position 24 to 26 with Seek 2
Disk head moves from position 26 to 42 with Seek 16
Disk head moves from position 42 to 50 with Seek 8
Disk head moves from position 50 to 99 with Seek 49
Disk head moves from position 99 to 24 with Seek 75
Disk head moves from position 24 to 12 with Seek 12
Disk head moves from position 12 to 8 with Seek 4
Disk head moves from position 8 to 4 with Seek 4
Total Seek Time= 170
Average Seek Time= 24.285715
Process exited after 33.26 seconds with return value 0
Press any key to continue . . .