LAB - 8

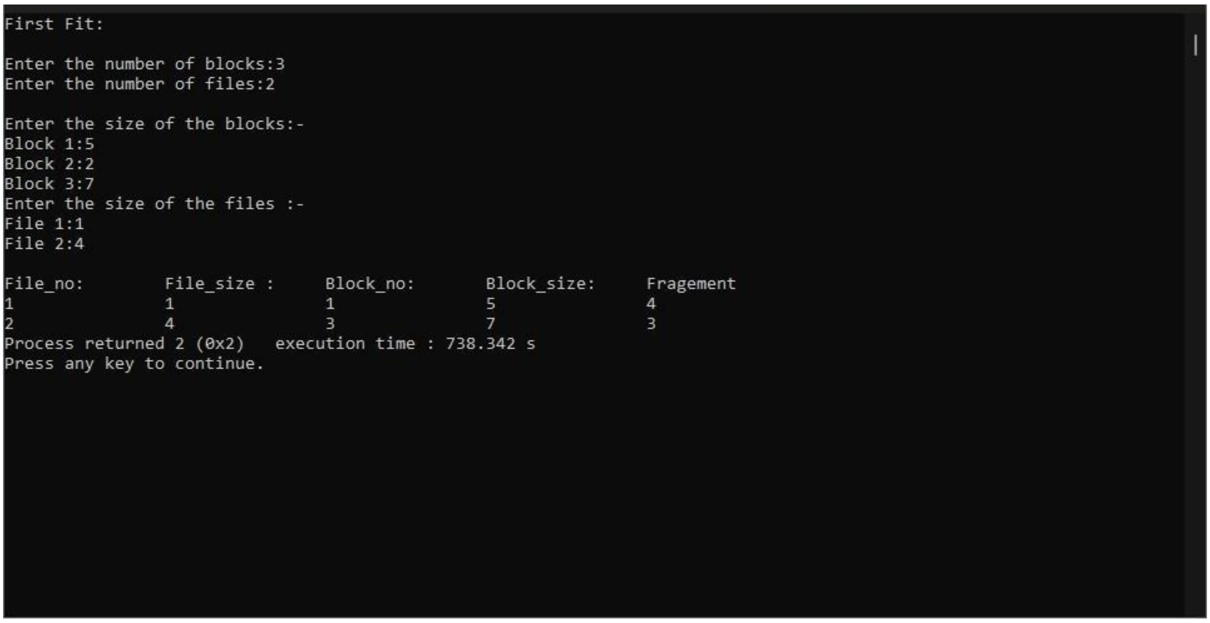
Q.Write a C program to simulate the following contiguous memory

allocation techniques

1. FIRST FIT

```
#include<stdio.h>
#include<conio.h>
#define max 25 void
main()
{
int frag[max],b[max],f[max],i,j,nb,nf,temp;
static int bf[max],ff[max];

printf("First Fit:\n");
printf("\nEnter the number of blocks:");
scanf("%d",&nb); printf("Enter the
number of files:"); scanf("%d",&nf);
printf("\nEnter the size of the blocks:-\n");
for(i=1;i<=nb;i++)
{
printf("Block %d:",i); scanf("%d",&b[i]);
}
printf("Enter the size of the files :-\n");
for(i=1;i<=nf;i++)
{
printf("File %d:",i); scanf("%d",&f[i]);
}
for(i=1;i<=nf;i++)
{
for(j=1;j<=nb;j++)
{ if(bf[j]!=1)

{

temp=b[j]-f[i]; if(temp>=0)

{ ff[i]=j;

break;

}

}

}

frag[i]=temp;

bf[ff[i]]=1;

}

printf("\nFile_no:\tFile_size :\tBlock_no:\tBlock_size:\tFragement");

for(i=1;i<=nf;i++)

printf("\n%d\t\t%d\t\t%d\t\t%d\t\t%d",i,f[i],ff[i],b[ff[i]],frag[i]);


}
```

OUTPUT:

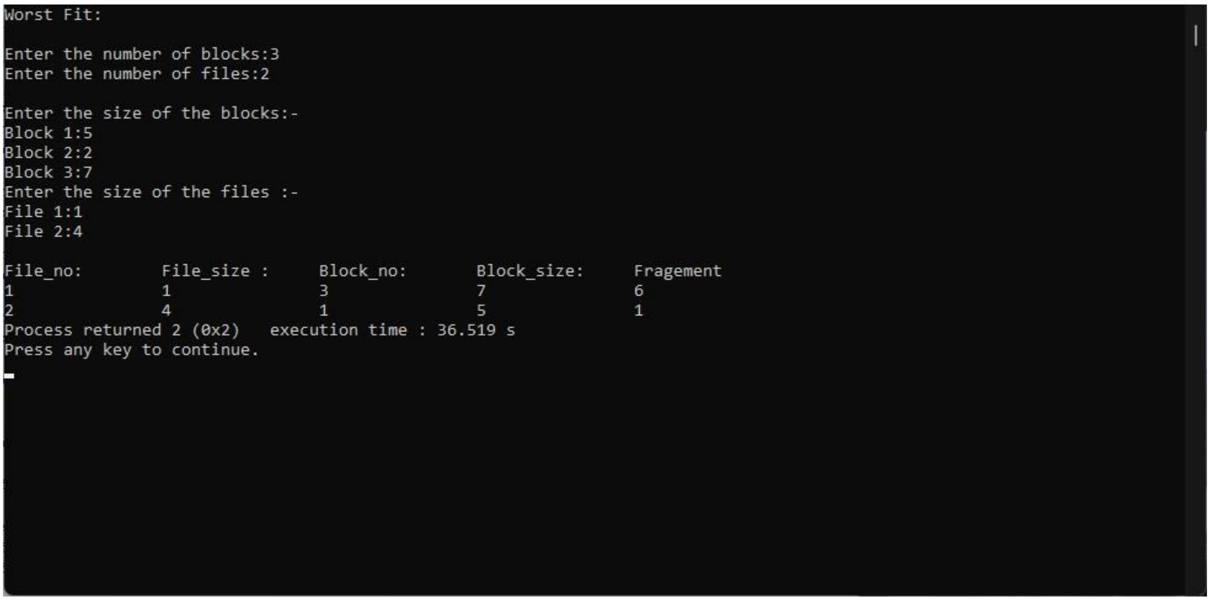


```
First Fit:

Enter the number of blocks:3
Enter the number of files:2

Enter the size of the blocks:-
Block 1:5
Block 2:2
Block 3:7
Enter the size of the files :-
File 1:1
File 2:4

File_no:        File_size :     Block_no:       Block_size:     Fragement
1               1               1               5               4
2               4               3               7               3
Process returned 2 (0x2)   execution time : 738.342 s
Press any key to continue.
```

2. WORST FIT

```
#include<stdio.h>
#include<conio.h>
#define max 25 void
main()
{
int frag[max],b[max],f[max],i,j,nb,nf,temp,highest=0; static
int bf[max],ff[max];

printf("Worst Fit:\n");
printf("\nEnter the number of blocks:"); scanf("%d",&nb);
printf("Enter the number of files:");
scanf("%d",&nf);
printf("\nEnter the size of the blocks:-\n");
for(i=1;i<=nb;i++)
{ printf("Block
%d:",i);
scanf("%d",&b[i]);
}
printf("Enter the size of the files :-\n");
for(i=1;i<=nf;i++)
{
printf("File %d:",i); scanf("%d",&f[i]);
}
for(i=1;i<=nf;i++)
{

for(j=1;j<=nb;j++)
{
if(bf[j]!=1) //if bf[j] is not allocated
{ temp=b[j]-f[i];
if(temp>=0)
if(highest<temp)
{
ff[i]=j;
highest=temp;
}
} }
frag[i]=highest;
bf[ff[i]]=1;
highest=0; }
printf("\nFile_no:\tFile_size :\tBlock_no:\tBlock_size:\tFragement"); for(i=1;i<=nf;i++)
printf("\n%d\t\t%d\t\t%d\t\t%d\t\t%d",i,f[i],ff[i],b[ff[i]],frag[i]);

}
```

OUTPUT:

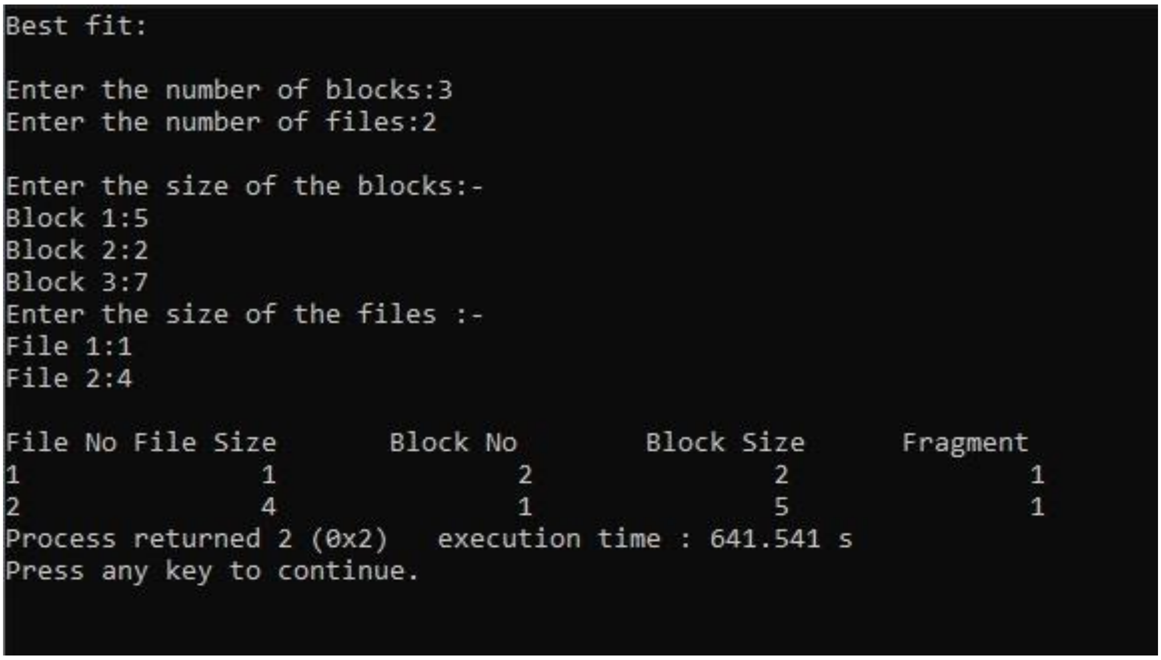


```
Worst Fit:

Enter the number of blocks:3
Enter the number of files:2

Enter the size of the blocks:-
Block 1:5
Block 2:2
Block 3:7
Enter the size of the files :-
File 1:1
File 2:4

File_no:        File_size :     Block_no:       Block_size:     Fragement
1               1               3               7               6
2               4               1               5               1
Process returned 2 (0x2)   execution time : 36.519 s
Press any key to continue.
```

3.BEST FIT

```
#include<stdio.h>
#include<conio.h> #define
max 25
void main()
{
int frag[max],b[max],f[max],i,j,nb,nf,temp,lowest=10000;
static int bf[max],ff[max];
printf("Best fit:\n ");
printf("\nEnter the number of blocks:");
scanf("%d",&nb); printf("Enter the
number of files:"); scanf("%d",&nf);
printf("\nEnter the size of the blocks:-\n"); for(i=1;i<=nb;i++)
{
printf("Block %d:",i);
scanf("%d",&b[i]);
}
printf("Enter the size of the files :-\n"); for(i=1;i<=nf;i++)
{
printf("File %d:",i);
scanf("%d",&f[i]);
}
for(i=1;i<=nf;i++)
{
for(j=1;j<=nb;j++)
{ if(bf[j]!=1)
{ temp=b[j]-f[i];
if(temp>=0)
if(lowest>temp)
{ ff[i]=j;
lowest=temp;
}
}
}
frag[i]=lowest; bf[ff[i]]=1;
lowest=10000;
}
printf("\nFile No\tFile Size \tBlock No\tBlock Size\tFragment"); for(i=1;i<=nf
&& ff[i]!=0;i++)
printf("\n%d\t\t%d\t\t%d\t\t%d\t\t%d",i,f[i],ff[i],b[ff[i]],frag[i]);
;
}
```

OUTPUT:



```
Best fit:

Enter the number of blocks:3
Enter the number of files:2

Enter the size of the blocks:-
Block 1:5
Block 2:2
Block 3:7
Enter the size of the files :-
File 1:1
File 2:4

File No File Size       Block No        Block Size      Fragment
1               1               2               2               1
2               4               1               5               1
Process returned 2 (0x2)   execution time : 641.541 s
Press any key to continue.
```