**BEST FIT ,WORST FIT ,FIRST FIT:**

```
#include<stdio.h>
#include<conio.h>
void accept(int a[],int n)
{
int i;
for(i=0;i<n;i++)
{
scanf("%d",&a[i]);
}
}
void display(int a[],int n)
{
int i;
printf("\n\n");
for(i=0;i<n;i++)
{
printf("\t%d ",a[i]);
}
}
void sort(int a[],int n)
{
int i,j,temp;
for(i=0;i<n-1;i++)
{
for(j=0;j<n-1;j++)
{
if(a[j]>a[j+1])
{
temp=a[j];
a[j]=a[j+1];
a[j+1]=temp;
}
}
}
}
void first_fit(int psize[],int np,int msize[],int
nm)
{
nt i,j,itot,etot,flag[30]={0};
tot=etot=0;
for(i=0;i<np;i++)
{
for(j=0;j<nm;j++)
{
if(flag[j]==0 && msize[j]>=psize[i])
{
flag[j]=1;
itot=itot+msize[j]-psize[i];
break;
}
}
if(j==nm)
printf("\n\nTHERE IS NO SPACE FOR
PROCESS %d ",i);
}
for(i=0;i<nm;i++)
{
if(flag[i]==0)
etot=etot+msize[i];
}
printf("\n\nPROCESSES::");
display(psize,np);
printf("\n\nMEMORY HOLES::");
display(msize,nm);
printf("\n\nTOTAL SUM OF INTERNAL
FRAGMENTATION = %d ",itot);
printf("\n\nTOTAL SUM OF EXTERNAL
FRAGMENTATION = %d ",etot);
}
void best_fit(int psize[],int np,int msize[],int
nm)
{
int i,j,itot,etot,temp[30],flag[30]={0};
itot=etot=0;
for(i=0;i<nm;i++)
temp[i]=msize[i];
sort(temp,nm);
for(i=0;i<np;i++)
{
for(j=0;j<nm;j++)
{
if(flag[j]==0 && temp[j]>=psize[i])
{
flag[j]=1;
itot=itot+temp[j]-psize[i];
```

```
break;
}
}
if(j==nm)
printf("\n\nTHERE IS NO SPACE FOR
PROCESS %d ",i);
}
for(i=0;i<nm;i++)
{
if(flag[i]==0)
etot=etot+temp[i];
}
printf("\n\nPROCESSES::");
display(psize,np);
printf("\n\nMEMORY HOLES::");
display(temp,nm);
printf("\n\nTOTAL SUM OF INTERNAL
FRAGMENTATION = %d ",itot);
printf("\n\nTOTAL SUM OF EXTERNAL
FRAGMENTATION = %d ",etot);
}
void worst_fit(int psize[],int np,int msize[],int
nm)
{
int i,j,itot,etot,temp[30],flag[30]={0};
itot=etot=0;
for(i=0;i<nm;i++)
temp[i]=msize[i];
sort(temp,nm);
for(i=0;i<np;i++)
{
for(j=nm-1;j>=0;j–)
{
if(flag[j]==0 && temp[j]>=psize[i])
{
flag[j]=1;
itot=itot+temp[j]-psize[i];
break;
}
}
if(j==nm)
printf("\n\nTHERE IS NO SPACE FOR
PROCESS %d ",i);
}
for(i=0;i<nm;i++)
{
if(flag[i]==0)
etot=etot+temp[i];
}
printf("\n\nPROCESSES::");
display(psize,np);
printf("\n\nMEMORY HOLES::");
display(temp,nm);
printf("\n\nTOTAL SUM OF INTERNAL
FRAGMENTATION = %d ",itot);
printf("\n\nTOTAL SUM OF EXTERNAL
FRAGMENTATION = %d ",etot);
}
void main()
{
int ch,np,nm,psize[30],msize[30];
clrscr();
printf("\nENTER NO OF PROCESSES::");
scanf("%d",&np);
printf("\n\nENTER SIZES OF
PROCESSES::");
accept(psize,np);
printf("\nENTER NO MEMORY HOLES::");
scanf("%d",&nm);
printf("\n\nENTER SIZES OF MEMORY
HOLES::");
accept(msize,nm);
while(1)
{
printf("\n\n\t\t**MAIN MENU**");
printf("\n\n\tMEMORY MANAGEMENT");
printf("\n\n\t1.FIRST FIT");
rintf("\n\n\t2.BEST FIT");
rintf("\n\n\t3.WORST FIT");
rintf("\n\n\t4.QUIT");
printf("\n\nENTER YOUR CHOICE::");
scanf("%d",&ch);
switch(ch)
{
case 1:
printf("\n\nFIRST FIT::\n");
```

```
first_fit(psize,np,msize,nm);
break;
case 2:
printf("\n\n\tBEST FIT::\n");
best_fit(psize,np,msize,nm);
break;
case 3:
printf("\n\n\tWORST FIT::\n");
worst_fit(psize,np,msize,nm);
break;
case 4:
exit(0);
default:
printf("\n\nPLEASE ENTER CORRECT
CHOICE!!");
}
getch();
}
}
```

**OUTPUT:**

```
ENTER NO OF PROCESSES::5
ENTER SIZES OF PROCESSES::10 20 15
30 45
ENTER NO MEMORY HOLES::7
ENTER SIZES OF MEMORY HOLES::5 15
10 35 25 20 25

                    **MAIN
MENU**
          MEMORY MANAGEMENT
          1.FIRST FIT
          2.BEST FIT
          3.WORST FIT
          4.QUIT

ENTER YOUR CHOICE::1
FIRST FIT::
THERE IS NO SPACE FOR PROCESS 3
THERE IS NO SPACE FOR PROCESS 4
PROCESSES::
          10   20   15   30   45
MEMORY HOLES::
          5    15   10   35   25
20   25

TOTAL SUM OF INTERNAL
FRAGMENTATION = 30
TOTAL SUM OF EXTERNAL
FRAGMENTATION = 60

ENTER YOUR CHOICE::2

          BEST FIT::
THERE IS NO SPACE FOR PROCESS 4
PROCESSES::
          10   20   15   30   45
MEMORY HOLES::
          5    10   15   20   25
25   35
TOTAL SUM OF INTERNAL
FRAGMENTATION = 5
TOTAL SUM OF EXTERNAL
FRAGMENTATION = 55

ENTER YOUR CHOICE::3
          WORST FIT::
PROCESSES::
          10   20   15   30   45
MEMORY HOLES::
          5    10   15   20   25
25   35

TOTAL SUM OF INTERNAL
FRAGMENTATION = 40
TOTAL SUM OF EXTERNAL
FRAGMENTATION = 50
```