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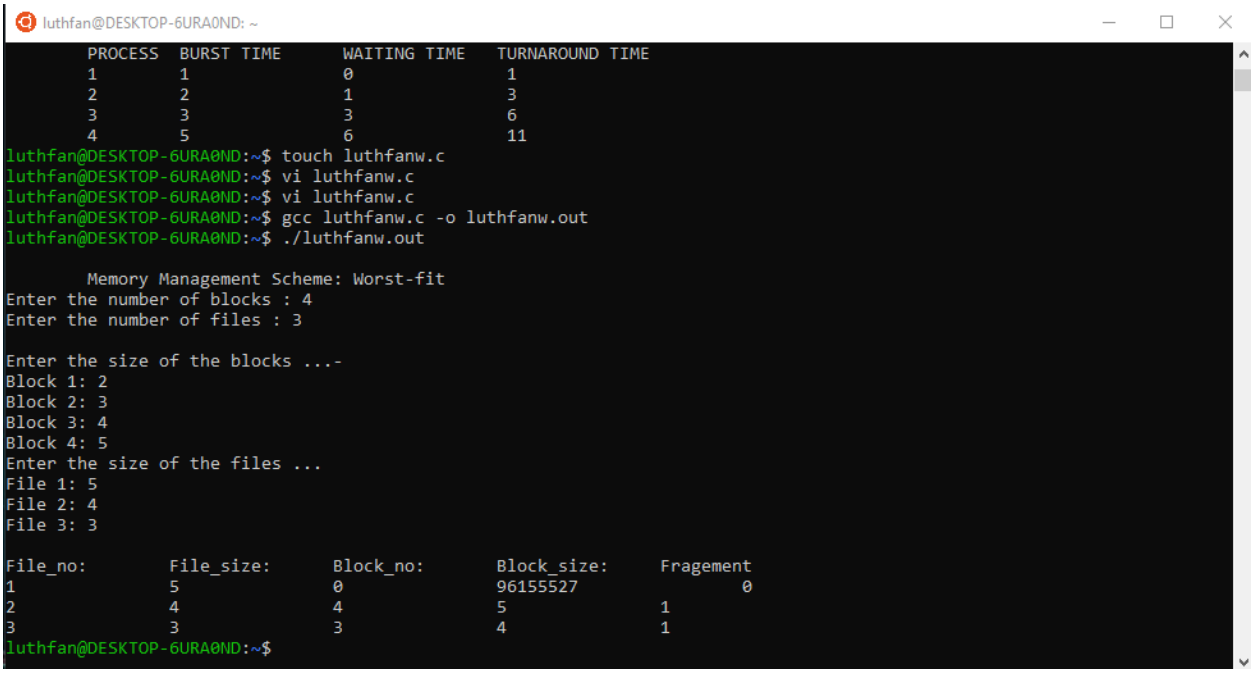
C Program To Simulate The Following Contiguous Memory Allocation Techniques

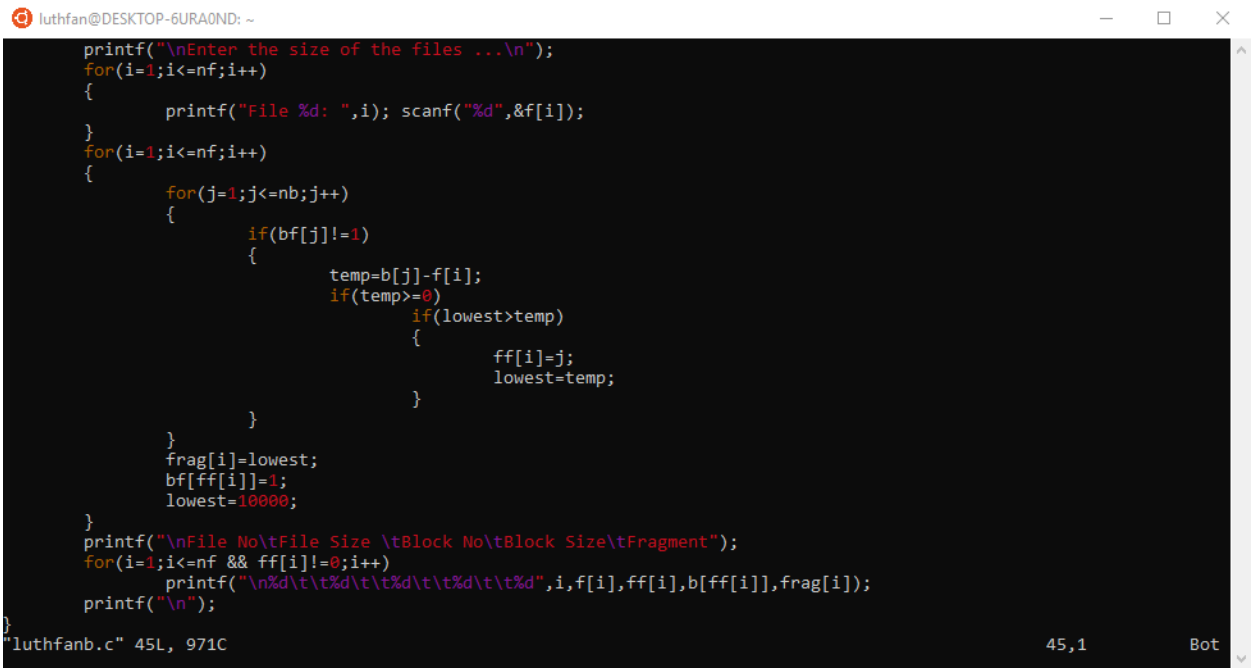
1. **Worst-fit**

luthfan@DESKTOP-6URA0ND: ~

```
        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]);
        printf("\n");
}
"luthfanw.c" 46L, 985C                                                  46,1          Bot
```


luthfan@DESKTOP-6URA0ND: ~
PROCESS BURST TIME WAITING TIME TURNAROUND TIME
1 1 0 1
2 2 1 3
3 3 3 6
4 5 6 11
luthfan@DESKTOP-6URA0ND:~$ touch luthfanw.c
luthfan@DESKTOP-6URA0ND:~$ vi luthfanw.c
luthfan@DESKTOP-6URA0ND:~$ vi luthfanw.c
luthfan@DESKTOP-6URA0ND:~$ gcc luthfanw.c -o luthfanw.out
luthfan@DESKTOP-6URA0ND:~$ ./luthfanw.out
Memory Management Scheme: Worst-fit
Enter the number of blocks : 4
Enter the number of files : 3
Enter the size of the blocks ...-
Block 1: 2
Block 2: 3
Block 3: 4
Block 4: 5
Enter the size of the files ...
File 1: 5
File 2: 4
File 3: 3
File_no: File_size: Block_no: Block_size: Fragement
1 5 0 96155527 0
2 4 4 5 1
3 3 3 4 1
luthfan@DESKTOP-6URA0ND:~$

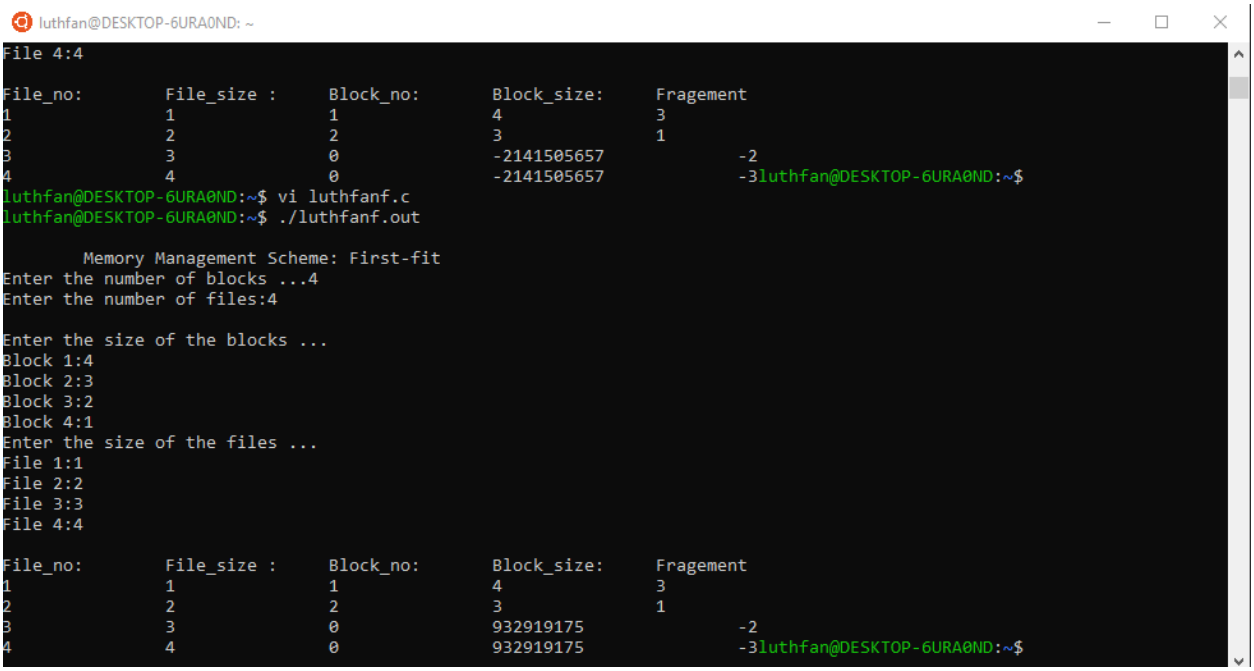
2. Best-fit


luthfan@DESKTOP-6URA0ND: ~
printf("\nEnter 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]);
printf("\n");
}
"luthfanb.c" 45L, 971C
45,1
Bot

```
luthfan@DESKTOP-6URA0ND: ~
Average Turnaround Time ... 10.000000
luthfan@DESKTOP-6URA0ND:~$ 4
4
4: command not found
luthfan@DESKTOP-6URA0ND:~$ 4
4: command not found
luthfan@DESKTOP-6URA0ND:~$ ./luthfanb.out

        Memory Management Scheme: Best-fit
Enter the number of blocks ... 4
Enter the number of files ... 4

Enter the size of the blocks ...
Block 1 :4
Block 2 :3
Block 3 :2
Block 4 :1

Enter the size of the files ...
File 1: 1
File 2: 2
File 3: 3
File 4: 4

File No File Size       Block No        Block Size      Fragment
1               1               4               1               0
2               2               3               2               0
3               3               2               3               0
4               4               1               4               0
luthfan@DESKTOP-6URA0ND:~$
```

3. First-fit

```
luthfan@DESKTOP-6URA0ND: ~
        {
                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]);
}
"luthfanf.c" 42L, 878C                                                  42,1          Bot
```


luthfan@DESKTOP-6URA0ND: ~
File 4:4
File_no: File_size : Block_no: Block_size: Fragement
1 1 1 4 3
2 2 2 3 1
3 3 0 -2141505657 -2
4 4 0 -2141505657 -3luthfan@DESKTOP-6URA0ND:~$
luthfan@DESKTOP-6URA0ND:~$ vi luthfanf.c
luthfan@DESKTOP-6URA0ND:~$ ./luthfanf.out
Memory Management Scheme: First-fit
Enter the number of blocks ...4
Enter the number of files:4
Enter the size of the blocks ...
Block 1:4
Block 2:3
Block 3:2
Block 4:1
Enter the size of the files ...
File 1:1
File 2:2
File 3:3
File 4:4
File_no: File_size : Block_no: Block_size: Fragement
1 1 1 4 3
2 2 2 3 1
3 3 0 932919175 -2
4 4 0 932919175 -3luthfan@DESKTOP-6URA0ND:~$