Lab-10

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Variable Allocation

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```
#include
<iostream> using
namespace std; int
main()
{
   int n,t;
   cout<<"Enter the number of
   processes: "; cin>>n;
   int
   proc[n],vis[n];
   for(int
   i=0;i<n;i++){
      cout<<"Enter the size of process"<<i+1<<": ";
      cin>>proc[i];
      vis[i]=0;
   }
   cout<<"Enter the number of
   blocks: "; cin>>t;
   int
   wastage=0;
   int
   block[t],vb[t];
   for(int i=0;i<t;i++){
      cout<<"Enter the capacity of block"<<i+1<<": ";
      cin>>block[i];
      wastage+=block[i
      ]; vb[i]=0;
   }
   cout <<"Press 1 for FirstFit, press 2 for BestFit, press 3 for
   WorstFit."<<endl; cout << "Enter the choice of fit: ";
   int  o;
   cin  >>
   o;
   if(o==1){
   for(int i=0;i<n;i++){
      for(int
      j=0;j<t;j++){
         if(proc[i]<=block[j] && vb[j]==0){
            vis[i]=1;
            vb[j]=1;
            block[j]-
            =proc[i];
```

```
            wastage-
            =proc[i];
            cout<<"Process"<<i+1<<" allocated to
            block"<<j+1<<endl; break;
        }
    }
}
}
else
if(o==2){ int
m,flag=0;
for(int i=0;i<n;i++){
    int min=1000;
    for(int
    j=0;j<t;j++){
        if(proc[i]<=block[j] &&
            vb[j]==0){ if(block[j]<min)
            {
                min=block[
                j]; m=j;
                vis[i]=1;
            }
        }
    }
    if(vis[i]==1){
    vb[m]=1;
    block[m]-
    =proc[i];
    wastage-
    =proc[i];
    cout<<"Process"<<i+1<<" allocated to block"<<m+1<<endl;
    }
}
}
else
if(o==3){ int
m,flag=0;
for(int
    i=0;i<n;i++){
    int max=0;
    for(int j=0;j<t;j++){
        if(proc[i]<=block[j] &&
        vb[j]==0){
            if(block[j]>max)
            {
                max=block[j
                ]; m=j;
                vis[i]=1;
            }
        }
    }
    if(vis[i]==1){
    vb[m]=1;
    block[m]-
    =proc[i];
    wastage-
    =proc[i];
```

```
        cout<<"Process"<<i+1<<" allocated to block"<<m+1<<endl;
        }
    }}
    for(int
        i=0;i<n;i++){
        if(vis[i]==0)
        cout<<"Process"<<i+1<<" not allocated to any block."<<endl;


    }
    cout<<"Total wastage of memory is:
    "<<wastage<<"KB"; return 0;
}
```

Output for First Fit-

```
Enter the number of processes: 4
Enter the size of process1: 20
Enter the size of process2: 200
Enter the size of process3: 500
Enter the size of process4: 50
Enter the number of blocks: 4
Enter the capacity of block1: 30
Enter the capacity of block2: 50
Enter the capacity of block3: 200
Enter the capacity of block4: 700
Press 1 for FirstFit, press 2 for BestFit, press 3 for WorstFit.
Enter the choice of fit: 1
Process1 allocated to block1
Process2 allocated to block3
Process3 allocated to block4
Process4 allocated to block2
Total wastage of memory is: 210KB
```

Output for Best Fit-

```
Enter the number of processes: 4
Enter the size of process1: 20
Enter the size of process2: 300
Enter the size of process3: 500
Enter the size of process4: 50
Enter the number of blocks: 4
Enter the capacity of block1: 30
Enter the capacity of block2: 50
Enter the capacity of block3: 200
Enter the capacity of block4: 700
Press 1 for FirstFit, press 2 for BestFit, press 3 for WorstFit.
Enter the choice of fit: 2
Process1 allocated to block1
Process2 allocated to block4
Process4 allocated to block2
Process3 not allocated to any block.
Total wastage of memory is: 610KB
```

Output for Worst Fit-

```
Enter the number of processes: 4
Enter the size of process1: 20
Enter the size of process2: 200
Enter the size of process3: 500
Enter the size of process4: 50
Enter the number of blocks: 4
Enter the capacity of block1: 30
Enter the capacity of block2: 50
Enter the capacity of block3: 200
Enter the capacity of block4: 700
Press 1 for FirstFit, press 2 for BestFit, press 3 for WorstFit.
Enter the choice of fit: 3
Process1 allocated to block4
Process2 allocated to block3
Process4 allocated to block2
Process3 not allocated to any block.
Total wastage of memory is: 710KB
```