

```
1  #include<stdio.h>
2
3  int main()
4  {
5      int n,r,i,j,k,p,u=0,s=0,m;
6      int block[10],run[10],active[10],newreq[10];
7      int max[10][10],resalloc[10][10],resreq[10][10];
8      int totalloc[10],totext[10],simalloc[10];
9      //clrscr();
10     printf("Enter the no of processes:");
11     scanf("%d",&n);
12     printf("Enter the no of resource classes:");
13     scanf("%d",&r);
14     printf("Enter the total existed resource in each class:");
15     for(k=1; k<=r; k++)
16         scanf("%d",&totext[k]);
17     printf("Enter the allocated resources:");
18     for(i=1; i<=n; i++)
19         for(k=1; k<=r; k++)
20             scanf("%d",&resalloc[i][k]);
21     printf("Enter the process making the new request:");
22     scanf("%d",&p);
23     printf("Enter the requested resource:");
24     for(k=1; k<=r; k++)
25         scanf("%d",&newreq[k]);
26     printf("Enter the process which are n blocked or running:");
27     for(i=1; i<=n; i++)
28     {
29         if(i!=p)
30         {
31             printf("process %d:\n",i+1);
32             scanf("%d",&block[i],&run[i]);
33         }
34     }
35     block[1]=0;
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34 }
35 block[p]=0;
36 run[p]=0;
37 for(k=1; k<=r; k++)
38 {
39     j=0;
40     for(i=1; i<=n; i++)
41     {
42         totalloc[k]=j+resalloc[i][k];
43         j=totalloc[k];
44     }
45 }
46 for(i=1; i<=n; i++)
47 {
48     if(block[i]==1||run[i]==1)
49         active[i]=1;
50     else
51         active[i]=0;
52 }
53 for(k=1; k<=r; k++)
54 {
55     resalloc[p][k]+=newreq[k];
56     totalloc[k]+=newreq[k];
57 }
58 for(k=1; k<=r; k++)
59 {
60     if(totext[k]-totalloc[k]<0)
61     {
62         u=1;
63         break;
64     }
65 }
66 if(u==0)
67 {
```

```
68 {
69     for(k=1; k<=r; k++)
70         simalloc[k]=totalalloc[k];
71     for(s=1; s<=n; s++)
72         for(i=1; i<=n; i++)
73         {
74             if(active[i]==1)
75             {
76                 j=0;
77                 for(k=1; k<=r; k++)
78                 {
79                     if((totext[k]-simalloc[k])<=(max[i][k]-resalloc[i][k]))
80                     {
81                         j=1;
82                         break;
83                     }
84                 }
85             }
86             if(j==0)
87             {
88                 active[i]=0;
89                 for(k=1; k<=r; k++)
90                     simalloc[k]=resalloc[i][k];
91             }
92         }
93     m=0;
94     for(k=1; k<=r; k++)
95         resreq[p][k]=newreq[k];
96     printf("Deadlock willn't occur");
97 }
98 else
99 {
100     for(k=1; k<=r; k++)
101     {
```

```
77     for(k=1; k<=r; k++)
78     {
79         if((totext[k]-simalloc[k])<(max[i][k]-resalloc[i][k]))
80         {
81             j=1;
82             break;
83         }
84     }
85     if(j==0)
86     {
87         active[i]=0;
88         for(k=1; k<=r; k++)
89             simalloc[k]=resalloc[i][k];
90     }
91     pi=0;
92     for(k=1; k<=r; k++)
93         resreq[p][k]=newreq[k];
94     printf("Deadlock willn't occur");
95 }
96 else
97 {
98     for(k=1; k<=r; k++)
99     {
100         resalloc[p][k]=newreq[k];
101         totalloc[k]=newreq[k];
102     }
103     printf("Deadlock will occur");
104 }
105 }
106 }
107 }
108 }
109 }
110 }
```

```
Enter the no of processes:2
Enter the no of resource classes:2
Enter the total existed resource in each class:1
2
Enter the allocated resources:3
2
4
5
Enter the process making the new request:3
Enter the requested resource:2
1
Enter the process which are n blocked or running:process 2:
2
3
process 3:
2
3
Deadlock will occur
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Process exited after 76.19 seconds with return value 0
Press any key to continue . . .
```