**PRACTICAL-7**

**IMPLEMENTATION OF BANKERS ALGORITHM.**

#include<stdio.h>

#include<conio.h>

#include<process.h>

void main()

{

int p,r,ins,i,j,k,c=0,avail[10],max[10][10],false,true;

int alloc[10][10],need[10][10],work[10],finish[10];

clrscr();

printf("\n Enter the number of processes\t");

scanf("%d",&p);

printf("\n Enter the number of resources\_type\t");

scanf("%d",&r);

for(j=1;j<=r;j++)

{

printf("\n Enter number of instances of-----> R%d\t\t",j);

scanf("%d",&ins);

avail[j]=ins;

}

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

{

for(j=1;j<=r;j++)

{

printf("\nEnter the maximum instances of R%d need by P%d\t",j,i);

scanf("%d",&max[i][j]);

k=max[i][j];

if(k>avail[j])

{ printf("The system is unsafe ");

exit(0);}

else

continue;

}

}

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

{

for(j=1;j<=p;j++)

{

printf("\n Enter the no of instances to be allocated to P%d of R%d\t\t",i,j);

scanf("%d",&alloc[i][j]);

avail[i]-= alloc[i][j] ;

}

}

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

{

for(j=1;j<=r;j++)

{

need[i][j]=max[i][j]-alloc[i][j];

}

}

for(j=1;j<r;j++)

{work[j]=avail[j];}

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

{finish[i]=false;}

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

{

for(j=1;j<=r;j++)

{

if((finish[i]==false)&&(need[i][j]<work[j]))

{

work[j]+=alloc[i][j];

finish[i]=true;

printf("\n\n\t\tSystem safe");

break;

}

else

{ printf("\n\n\t\tSystem unsafe");

exit(0);

}

}

}

getch();

}