***Aim: -***Write a program to implements Lamport logical clock.

***Program:-***

#include<stdio.h>

//#include<conio.h>

int max1(int a, int b) //to find the maximum timestamp between two events

{

if (a>b)

return a;

else

return b;

}

int main()

{

int i,j,k,p1[20],p2[20],e1,e2,dep[20][20];

printf("enter the events : ");

scanf("%d %d",&e1,&e2);

for(i=0;i<e1;i++)

p1[i]=i+1;

for(i=0;i<e2;i++)

p2[i]=i+1;

printf("enter the dependency matrix:\n");

printf("\t enter 1 if e1->e2 \n\t enter -1, if e2->e1 \n\t else enter 0 \n\n");

for(i=0;i<e2;i++)

printf("\te2%d",i+1);

for(i=0;i<e1;i++)

{

printf("\n e1%d \t",i+1);

for(j=0;j<e2;j++)

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

}

for(i=0;i<e1;i++)

{

for(j=0;j<e2;j++)

{

if(dep[i][j]==1) //change the timestamp if dependency exist

{ p2[j]=max1(p2[j],p1[i]+1);

for(k=j;k<e2;k++)

p2[k+1]=p2[k]+1;

}

if(dep[i][j]==-1) //change the timestamp if dependency exist

{

p1[i]=max1(p1[i],p2[j]+1);

for(k=i;k<e1;k++)

p2[k+1]=p1[k]+1;

}

}

}

printf("P1 : "); //to print the outcome of Lamport Logical Clock

for(i=0;i<e1;i++)

{

printf("%d",p1[i]);

}

printf("\n P2 : ");

for(j=0;j<e2;j++)

printf("%d",p2[j]);

//getch();

return ;

}

***Output :-***

