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#include <iostream>
#include <fstream>
using namespace std;
ifstream f("date.in");
int a[20][100],d[100][100],n,m;
void creareMatrice (int n, int m, int a[20][100])
{
    int x,y;
    for(int i=1; i<=m; i++)
    {
        cout<<"dati extremitatile muchiei "<<i<<": "<<endl;
        f>>x>>y;
        a[x][y]++;
        if(x!=y)a[y][x]++;
    }
}
void afisareMatrice(int n, int a[20][100])
{
    for(int i=1; i<=n; i++)
    {
        for(int j=1; j<=n; j++)
            cout<<a[i][j]<<" ";
        cout<<endl;
    }
}
void ROY_WARSHALL()
{
    int i,j,k;

    for(i = 1 ; i<=n; i++)
        for(j = 1 ; j<=n; j++)
            d[i][j]=a[i][j];
    for(k = 1 ; k<=n; k++)
        for(i = 1 ; i<=n; i++)
            for(j = 1 ; j<=n; j++)
                d[i][j] = (d[i][j] | d[i][k] & d[k][j]);
}
int main()
{
    cout<<"nr de noduri: ";
    f>>n;
    cout<<"nr de muchii: ";
    f>>m;
    creareMatrice(n,m,a);
    afisareMatrice(n,a);
    cout<<endl;
    ROY_WARSHALL();
    afisareMatrice(n,d);
    return 0;
}
#include <iostream>

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#include <fstream>
using namespace std;
ifstream f("date.in");
int a[20][100],d[100][100],n,m,nrc;
void createMatrice (int n, int m, int a[20][100])
{
    int x,y;
    for(int i=1; i<=m; i++)
    {
        cout<<"dati extremitatile muchiei "<<i<<": "<<endl;
        f>>x>>y;
        a[x][y]++;
        if(x!=y)a[y][x]++;
    }
}
void afisareMatrice(int n, int a[20][100])
{
    for(int i=1; i<=n; i++)
    {
        for(int j=1; j<=n; j++)
            cout<<a[i][j]<<" ";
        cout<<endl;
    }
}
void ROY_WARSHALL()
{
    int i,j,k;

    for(i = 1 ; i<=n; i++)
        for(j = 1 ; j<=n; j++)
            d[i][j]=a[i][j];
    for(k = 1 ; k<=n; k++)
        for(i = 1 ; i<=n; i++)
            for(j = 1 ; j<=n; j++)
                d[i][j] = (d[i][j] | d[i][k] & d[k][j]);
}
void comp_tare_conexe()
{
    int nrc=0,CTC[101];
    for(int i=1;i<=n;i++)
        CTC[i]=0;
    ROY_WARSHALL();
    for(int i=1;i<=n;i++)
    {
        if(CTC[i]==0)
        {
            nrc++;
            CTC[i]=nrc;
            for(int j=i+1;j<=n;j++)
                if(CTC[j]==0 and d[i][j]==1 and d[j][i]==1)
                    CTC[j]=nrc;
        }
    }
}

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int main()
{

    cout<<"nr de noduri: ";
    f>>n;
    cout<<"nr de muchii: ";
    f>>m;
    creareMatrice(n,m,a);
    afisareMatrice(n,a);
    cout<<endl;
    comp_tare_conexe();
    cout<<nrc;
    return 0;
}
#include <iostream>
#include <fstream>
using namespace std;
ifstream f("date.in");
int k, viz[100],cc[100],a[100][100],tata[100],n,m,varf,s[100],urm[100],nrc;
void viziteaza(int x)
{
    cc[x]=nrc;
}
void creareMatrice (int n, int m, int a[20][100])
{
    int x,y;
    for(int i=1; i<=m; i++)
    {
        f>>x>>y;
        a[x][y]++;
        if(x!=y)a[y][x]++;
    }
}
void df_recurziv (int x)
{
    viziteaza(x);
    viz[x]=1;
    for(int y=1; y<=n; y++)
    {
        if(a[x][y]>=1 && viz[y]==0)
        {
            tata[y]=x;
            df_recurziv(y);
        }
    }
}
void comp_conexe_neorientat ()
{
    int i;
    nrc=0;
    for(i=1; i<=n; i++)
        cc[i]=0;
    for(i=1; i<=n; i++)
        if(cc[i]==0)

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        {
            nrc++;
            df_recurziv(i);
        }
    }
int main()
{
    f>>n;
    f>>m;
    creareMatrice(n,m,a);
    comp_conexe_neorientat();
    cout<<"numarul de comp conexa:"<<nrc<<endl;
    k=m-n+nrc;
    cout<<"numarul ciclomatic este: "<<k<<endl;
    return 0;
}
```