**Đề 1 :**

#include<conio.h>

#include<stdio.h>

#include<iostream>

using namespace std;

FILE \*f;

int a[100], c[100], n, b, x[100], kq[100], ok=1;

void docfile(){

int i;

f = fopen("DATA.INP", "r");

fscanf(f, "%d%d", &n, &b);

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

fscanf(f, "%d", &c[i]);

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

fscanf(f, "%d", &a[i]);

fclose(f);

}

void init(){

int i;

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

x[i] = 0;

}

void sinhnhiphan(){

int i;

i = n;

while(i > 0 && x[i] == 1){

x[i] = 0;

i--;

}

if(i > 0)

x[i] = 1;

else ok = 0;

}

int test(){

int i, tong = 0;

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

if(x[i])

tong += a[i];

if(tong <= b) return(1);

return(0);

}

void result(){

int i, tong, max=0;

f = fopen("ketqua.out", "w");

fprintf(f, "\n\n");

init();

while(ok){

if(test()){

tong = 0;

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

if(x[i])

tong += c[i];

if(tong >= max){

max = tong;

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

kq[i] = x[i];

}

}

sinhnhiphan();

}

fprintf(f, "%d", max);

fprintf(f,"\n");

cout<<"\n Gia tri nhieu nhat: "<<max<<"\n";

for(i = 1; i <= n; i++){

fprintf(f,"%d ",kq[i]);

cout<<" "<<kq[i]<<" ";

}

fclose(f);

}

main(){

docfile();

result();

}

**Đề 2 :**

#include<conio.h>

#include<stdio.h>

#include<iostream>

using namespace std;

FILE \*f;

int a[100], n, k, dem=0, x[100], ok=1;

void docfile(){

f = fopen("DAYSO.INP", "r");

fscanf(f, "%d", &n);

fscanf(f, "%d", &k);

for(int i=1; i<=n; i++)

fscanf(f, "%d", &a[i]);

fclose(f);

}

void init(){

int i;

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

x[i] = 0;

}

void sinhnhiphan(){

int i;

i = n;

while(i > 0 && x[i] == 1){

x[i]=0;

i--;

}

if(i > 0)

x[i] = 1;

else ok = 0;

}

void result(){

int i, tong;

f = fopen("ketqua.out", "w");

fprintf(f, "\n\n");

init();

while(ok){

tong = 0;

sinhnhiphan();

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

if(x[i])

tong += a[i];

if(tong == k){

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

if(x[i]){

cout<<a[i]<<" ";

fprintf(f, "%d ", a[i]);

}

cout<<"\n";

fprintf(f,"\n");

dem++;

}

}

fseek(f, SEEK\_SET, 0);

fprintf(f, "%d ", dem);

fclose(f);

}

main(){

docfile();

result();

cout<<"\n So nghiem cua bai toan: "<<dem;

}

**Đê 3 :**

#include <conio.h>

#include <stdio.h>

#include <iostream>

using namespace std;

FILE \*f;

int n, b, a[100], dem = 0, x[100], ok = 1;

void docfile(){

f = fopen("DATA.INP", "r");

fscanf(f, "%d%d", &n, &b);

for(int i = 1; i<=n; i++)

fscanf(f, "%d", &a[i]);

fclose(f);

}

void init(){

for(int i = 1; i <= n; i++)

x[i]=0;

}

void sinhnhiphan(){

int i = n,j;

while(i > 0 && x[i] == 1){

x[i] = 0;

i--;

}

if(i > 0)

x[i] = 1;

else ok = 0;

}

void result(){

int i;

f = fopen("ketqua.out","w");

fprintf(f,"\n\n");

init();

while(ok){

int s = 0;

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

if(x[i] == 1)

s += a[i];

if(s == b){

dem++;

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

fprintf(f,"%d ", x[i]);

fprintf(f,"\n");

}

sinhnhiphan();

}

fseek(f, SEEK\_SET, 0);

fprintf(f,"%d ", dem);

fclose(f);

}

main(){

docfile();

result();

cout<<"Ket qua da ghi vao file ketqua.out.";

}

**Đề 4 :**

#include<iostream>

#include<stack>

#include <fstream>

using namespace std;

string docTep() {

string a;

ifstream doc;

doc.open("TRUNGTO.INP");

getline(doc, a);

doc.close();

return a;

}

int uT( char c ){ // tra ve muc do uu tien cua cac toan tu

if( c == '(') return 0;

if( c == '+' || c == '-' ) return 1;

if( c == '\*' || c == '/' || c == '%' ) return 2;

if( c == '^' ) return 3;

}

void hauTo(){ // chuyen bthuc trung to sang hau to.

stack<char> s;

string str, str1 = "";

int i = 0;

str = docTep();

while( i < str.length() ){

char c = str.at(i);

if( c != ' ' ){

if( c - '0' >= 0 && c - '0' <= 9 || isalpha(c) ) str1 += c;

else{

cout<< str1 << " ";

str1 = "";

if( c == '(') s.push(c);

else{

if( c == ')') {

while( s.top()!= '(' ){

cout<< s.top();

s.pop();

}

if(s.top() == '(' ) s.pop();

}

else{

while( !s.empty() && uT(c) <=uT(s.top())){

cout<< s.top();

s.pop();

}

s.push(c);

}

}

}

}

i++;

}

if( str1 != "" ) cout<< str1 << " ";

while(!s.empty()){

if(s.top()!= '(') cout<< s.top();

s.pop();

}

}

int main(){

hauTo();

return 0;

}

**Đề 5 :**

#include<iostream>

#include<cstring>

#include<stack>

#include<cmath>

#include <fstream>

using namespace std;

string str;

void docTep() {

ifstream doc;

doc.open("HAUTO.INP");

getline(doc, str);

doc.close();

}

void tinh( string str, stack<int> st ){

int s = str.size();

for( int i= 0; i< s; i++ ){

if( str.at(i) -'0' >= 0 && str.at(i) - '0' <= 9 ) st.push( str.at(i) - '0' );

else if( str.at(i) != ' ' && st.top() != st.empty() ){

int a, b;

b = st.top(); st.pop();

a = st.top(); st.pop();

if( str.at(i) == '+' ) st.push( a + b );

if( str.at(i) == '-' ) st.push( a - b );

if( str.at(i) == '\*' ) st.push( a \* b );

if( str.at(i) == '/' ) st.push( a / b );

if( str.at(i) == '^' ) st.push( pow( a, b ) );

if( str.at(i) == '%' ) st.push( a % b );

}

} if( !st.empty() ) cout<< st.top();

}

int main(){

stack<int> st;

docTep();

tinh(str, st);

return 0;

}

**Đề 6 :**

#include<iostream>

#include<cstdio>

#include<fstream>

using namespace std;

#define MAX 100

int n, k;

int a[MAX];

int s[MAX];

int count = 0;

void docTep() {

ifstream doc;

doc.open("DAYSO.INP");

doc >> n;

doc >> k;

for(int i = 0; i < n; i++) {

doc >> a[i];

}

doc.close();

}

int kiemTraGiamDan(int s[], int k) {

for(int i = 0; i < k-1; i++) {

if(s[i] < s[i+1])

return 0;

}

return 1;

}

bool kiemTrakhacRong(int s[], int k) {

for (int i = 0; i< k; i ++) {

if(s[i] == 0)

return false;

}

return true;

}

void KSubset(int \*a,int n,int \*s,int sIndex,int index,int k, int &count){

if (index>n)

return;

if (k==0 && kiemTraGiamDan(s,sIndex) == 1 && kiemTrakhacRong(s,k)){

for(int i=0;i<sIndex;i++)

cout << s[i] << " ";

cout << endl;

count ++;

return ;

}

s[sIndex]=a[index];

KSubset(a,n,s,sIndex+1,index+1,k-1,count);

KSubset(a,n,s,sIndex,index+1,k,count);

}

int main(){

docTep();

KSubset(a,n,s,0,0,k,count);

cout << count;

return 0;

}

**Đề 7 :**

#include<conio.h>

#include<stdio.h>

#include<iostream>

using namespace std;

FILE \*f;

int a[100], c[100], n, b, x[100], kq[100], ok=1;

void docfile(){

int i;

f = fopen("data.in","r");

fscanf(f,"%d%d", &n, &b);

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

fscanf(f,"%d",&c[i]);

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

fscanf(f,"%d", &a[i]);

fclose(f);

}

void init(){

int i;

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

x[i] = 0;

}

void sinhnhiphan(){

int i;

i = n;

while(i > 0 && x[i] == 1){

x[i] = 0;

i--;

}

if(i > 0)

x[i] = 1;

else ok = 0;

}

int test(){

int i, tong = 0;

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

if(x[i])

tong += a[i];

if(tong <= b) return(1);

return(0);

}

void result(){

int i, tong, min = 0;

f = fopen("ketqua.out","w");

fprintf(f,"\n\n");

init();

while(ok){

if(test()){

tong = 0;

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

if(x[i])

tong+=c[i];

if(tong <= min){

min = tong;

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

kq[i] = x[i];

}

}

sinhnhiphan();

}

fprintf(f, "%d", min);

fprintf(f,"\n");

cout<<"\n Gia tri nhieu nhat: "<<min<<"\n";

for(i = 1; i <= n; i++){

fprintf(f,"%d ",kq[i]);

cout<<" "<<kq[i]<<" ";

}

fclose(f);

}

main(){

docfile();

result();

getch();

}

**Đề 8 :**

#include<stdio.h>

#include<conio.h>

#include<math.h>

#define MAX 100

void nhap (int a[], int &n)

{

do

{

printf("\nNhap so phan tu: ");

scanf("%d", &n);

if(n <= 0 || n > MAX)

{

printf("\nSo phan tu khong hop le. Xin kiem tra lai !");

}

}while(n <= 0 || n > MAX);

for(int i = 0; i < n; i++)

{

printf("\nNhap a[%d]: ", i);

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

}

}

void xuat(int a[], int n)

{

for(int i = 0; i < n; i++)

{

printf("%4d", a[i]);

}

}

int KiemTraTangDan(int b[], int nb)

{

for(int i = 0; i < nb - 1; i++)

{

if(b[i] > b[i + 1])

{

return 0;

}

}

return 1;

}

void XuatMangCon(int b[], int nb)

{

for(int i = 0; i < nb; i++)

{

printf("%4d", b[i]);

}

}

int TongMangCon(int b[], int nb)

{

int Tong = 0;

for(int i = 0; i < nb; i++)

{

Tong += b[i];

}

return Tong;

}

void TinhTongTungMangConTang(int a[], int n)

{

int ChieuDaiCon, Tong;

int b[MAX], nb;

for(int i = 0; i < n; i++)

{

for(ChieuDaiCon = 2; ChieuDaiCon <= n; ChieuDaiCon++)

{

nb = 0;

for(int j = i; j < ChieuDaiCon; j++)

{

b[nb] = a[j];

nb++;

TongMangCon(b, nb);

}

// if(KiemTraTangDan(b, nb) == 1)

XuatMangCon(b, nb);

Tong = TongMangCon(b, nb);

printf("\tTong mang nay: %d\n", Tong);

}

}

}

int main()

{

int n;

int a[MAX];

nhap(a, n);

xuat(a, n);

printf("\nTinh Tong tung mang con tang: \n");

TinhTongTungMangConTang(a, n);

getch();

return 0;

}

**Đề 9 :**

#include <conio.h>

#include <stdio.h>

#include <math.h>

#include <iostream>

#define max 30

using namespace std;

FILE \*f;

int a[max][max], set[max][max], n, k, dem, kq[max], ok=1;

void docfile(){

int i, j;

f = fopen("MTKE.INP","r");

fscanf(f, "%d", &n);

cout<<"Ma tran ke la:\n";

for(i = 1; i <= n; i++){

for(j = 1; j <= n; j++){

fscanf(f,"%d", &a[i][j]);

cout<<a[i][j]<<" ";

}

cout<<"\n";

}

fclose(f);

}

typedef struct{

int in;

int node[max];

}stack;

void init(stack \*s){

s->in = -1;

}

int empty(stack \*s){

if(s->in == -1)return(1);

return(0);

}

int full(stack \*s){

if(s->in == max-1)return(1);

return(0);

}

int laydau(stack \*s){

if(empty(s))return(-32000);

else return(s->node[s-> in]);

}

void push(stack \*s,int x){

if(!full(s)){

s->in = (s->in) +1;

s->node[s->in] = x;

}

}

int pop(stack \*s){

if(empty(s))return(-32000);

int x = s->node[s->in];

s->in = (s->in) -1;

return(x);

}

void DFS(int u, int b[max][max]){

stack s;

int i, h, chuaxet[max];

dem = 1;

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

chuaxet[i] = 1;

init(&s);

push(&s, u);

chuaxet[u] = 0;

kq[dem] = u;

while(!empty(&s)){

h = pop(&s);

i = 1;

while(i <= n){

if(b[h][i] > 0 && chuaxet[i]){

dem++;

kq[dem] = i;

push(&s, h);

push(&s, i);

chuaxet[i] = 0;

break;

}

i++;

}

}

}

int demsotplt(int b[max][max]){

int x = 0, i, chuaxet1[max];

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

chuaxet1[i]=1;

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

if(chuaxet1[i]){

DFS(i,b);

for(int j = 1; j <=dem;j++)

chuaxet1[kq[j]] = 0;

x++;

}return(x);

}

void setvalue(int u,int v){

int i,j;

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

for(j = 1; j <= n; j++){

if(i == u && j == v){

set[i][j] = 0;

set[j][i] = 0;

}else set[i][j] = a[i][j];

}

}

void testcanhcau(){

int i, j, value, socanhcau = 0, canhcau[max][2];

value=demsotplt(a);

f = fopen("DSCANH.OUT","w");

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

for(j = i+1; j <= n; j++)

if(a[i][j] > 0){

setvalue(i, j);

if(demsotplt(set) > value){

socanhcau++;

canhcau[socanhcau][1] = i;

canhcau[socanhcau][2] = j;

}

}

if(socanhcau == 0) fprintf(f,"%d\n",socanhcau);

else {

fprintf(f,"%d\n",socanhcau);

for(i = 1; i <= socanhcau; i++){

fprintf(f,"%d ", canhcau[i][1]);

fprintf(f,"%d\n", canhcau[i][2]);

}

}

fclose(f);

}

main(){

docfile();

testcanhcau();

cout<<"Da ghi ket qua vao file DSCANH.OUT";

}

**Đề 10 :**

#include<iostream>

#include<cstring>

#include<stack>

#include<cmath>

using namespace std;

int a[100][100],b[10][10];

int n,m;

FILE \*f;

void docfile(){

int i;

f = fopen("De10.txt", "r");

fscanf(f, "%d%d", &m, &n);

for(int i =0; i<n;i++){

for(int j =0 ;j<3;j++){

fscanf(f, "%d", &a[i][j]);

}

}

fclose(f);

}

int main(){

docfile();

for(int i=0;i<n;i++){

b[a[i][0]-1][a[i][1]-1] = a[i][2];

}

for(int i=0;i<m;i++){

for(int j=0;j<m;j++){

cout<<b[i][j]<<" ";

}

cout<<endl;

}

}

**Đề 11 :**

#include <iostream>

using namespace std;

int a[100][100];

int n;

int start = 0;

int ce[100] = {0};

int dce = 0;

void init(){

cin >> n;

for(int i = 1; i<=n; i++){

for(int j = 1; j<=n; j++){

cin >> a[i][j];

}

}

}

bool kiemtra(){

int degd, dega;

int dinhle = 0;

for(int i = 1; i<=n; i++){

degd = 0;

dega = 0;

for(int j = 1; j<=n; j++){

if(a[i][j] == 1) degd++;

if(a[j][i] == 1) dega++;

}

if(degd-dega == 1){

dinhle++;

if(start == 0) start = i;

}

}

if(dinhle > 2){

return false;

}

return true;

}

void duongdi(){

int stack[100];

int pos = 0;

int v;

stack[pos] = start;

do{

v = stack[pos];

pos--;

int x = 1;

while(x <= n && a[v][x] !=1){

x++;

}

if(x > n){

dce++;

ce[dce] = v;

}else{

pos++;

stack[pos] = v;

pos++;

stack[pos] = x;

a[v][x] = 0;

a[x][v] = 0;

}

}while(pos >=0);

}

int main(){

freopen("dothi.inp", "r", stdin);

init();

if(kiemtra()){

duongdi();

for(int i = dce; i>0; i--){

cout << ce[i] << " ";

}

}else{

cout << "G khong la do thi nua euler";

}

fclose(stdin);

return 0;

**Đề 12 :**

#include <iostream>

using namespace std;

int a[100][100];

int n;

int start = 0;

int ce[100] = {0};

int dce = 0;

void init(){

cin >> n;

for(int i = 1; i<=n; i++){

for(int j = 1; j<=n; j++){

cin >> a[i][j];

}

}

}

bool kiemtra(){

int dem;

int dinhle = 0;

for(int i = 1; i<=n; i++){

dem = 0;

for(int j = 1; j<=n; j++){

if(a[i][j] == 1) dem++;

}

if(dem % 2 != 0){

dinhle++;

if(start == 0) start = i;

}

}

if(dinhle > 2){

return false;

}

return true;

}

void duongdi(){

int stack[100];

int pos = 0;

int v;

stack[pos] = start;

do{

v = stack[pos];

pos--;

int x = 1;

while(x <= n && a[v][x] !=1){

x++;

}

if(x > n){

dce++;

ce[dce] = v;

}else{

pos++;

stack[pos] = v;

pos++;

stack[pos] = x;

a[v][x] = 0;

a[x][v] = 0;

}

}while(pos >=0);

}

int main(){

freopen("bai11.txt", "r", stdin);

init();

if(kiemtra()){

duongdi();

for(int i = dce; i>0; i--){

cout << ce[i] << " ";

}

}else{

cout << "G khong la do thi nua euler";

}

fclose(stdin);

return 0;

}

**Đề 13 :**

#include <iostream>

#include<fstream>

#define MAX 50

//CHU TRINH EULER;

//DO THI VO HUONG;

using namespace std;

int A[MAX][MAX], n, m;

int demCanh(){

int i, j, dem=0;

for(i = 0; i<n; i++){

for( j = i; j<n; j++){

if(A[i][j])

dem += A[i][j];

}

}

return dem;

}

void init(){

ifstream filein( "dothi.txt", ios::in);

filein >> n;

for(int i=0; i<n; i++){

for(int j=0; j<n; j++){

filein >> A[i][j];

}

}

m=demCanh();

}

bool kTra(){

int Canh, d;

for(int i=0; i<n; i++){

Canh = 0;

for(int j=0; j<n; j++){

Canh += A[i][j];

}

if(Canh%2) return 0;

}

return 1;

}

void CTEuler(int start = 0){

int E[MAX], dE = 0;

int stack[MAX], top = 0;

stack[top++] = start;

do {

int v = stack[top-1];

int x = 0;

while(x<n && A[v][x]==0)

x++;

if(x == n) {

E[dE++] = v;

top--;

}

else {

stack[top++] = x;

A[v][x]--;

A[x][v]--;

}

} while(top!=0);

if(dE != m+1 ) {

cout << "\nG khong la do thi Euler!";

return;

}

cout << "\nChu trinh Euler di qua " << m << " canh:\n\n";

for(int x = dE-1; x>=0; x--)

cout << E[x] << " ";

}

int main(){

init();

if(kTra())

CTEuler();

else cout << "\nKhong co chu trinh Euler!";

return 0;

}

**Đề 14 :**

#include <iostream>

#include<fstream>

#define max 50

//CHU TRINH EULER;

//DO THI CO HUONG

using namespace std;

int a[max][max], n, m;

int demCanh(){

int dem=0;

for(int i = 0; i<n; i++){

for(int j = 0; j<n; j++){

if(a[i][j])

dem += a[i][j];

}

}

return dem;

}

void init(){

ifstream filein( "dothi.txt", ios::in);

filein >> n;

for(int i=0; i<n; i++){

for(int j=0; j<n; j++){

filein >> a[i][j];

}

}

m=demCanh();

}

bool kTra(){

int canh;

for(int i=0; i<n; i++){

canh = 0;

for(int j=0; j<n; j++){

canh += a[i][j];

}

for(int j=0; j<n; j++){

canh -= a[j][i];

}

if(canh) return 0;

}

return 1;

}

void CTCoHuong(int start = 0){

int E[max], dE = 0;

int stack[max], top = 0;

stack[top++] = start;

do {

int y = stack[top-1];

int x = 0;

while(x<n && a[y][x]==0)

x++;

if(x == n) {

E[dE++] = y;

top--;

}

else {

stack[top++] = x;

a[y][x]--;

}

} while(top!=0);

if(dE != m+1 ) {

cout << "\nKhong co chu trinh Euler!";

return;

cout << "\nChu trinh Euler di qua " << m << " canh:\n\n";

for(int x = dE-1; x>=0; x--)

cout << E[x] << " ";

}

int main(){

init();

if(kTra())

CTCoHuong();

else cout << "\nKhong co chu trinh Euler!";

return 0;

}

**Đề 15 :**

#include <stdio.h>

#include <stdlib.h>

#include <iostream>

#define INP "input.txt"

using namespace std;

int main() {

FILE \*fi = fopen(DOTHI.INP, "r");

int n, a, b, i, sum = 0;

fscanf(fi, "%d%d%d", &n, &a, &b);

int G[n][n];

int S[n], Len[n], P[n];

// nhap ma tran va tinh gia tri vo cung (sum)

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

for (int j = 0; j < n; j++) {

fscanf(fi, "%d", &G[i][j]);

sum += G[i][j];

}

// dat vo cung cho tat ca cap canh khong noi voi nhau

for (int i = 0; i < n; i++) {

for (int j = 0; j < n; j++) {

if (i != j && G[i][j] == 0)

G[i][j] = sum;

}

}

/\* Do mang tinh tu G[0][0] nen can giam vi tri di 1 don vi de tinh toan cho phu hop\*/

a--;

b--;

for (int i = 0; i < n; i++) {

Len[i] = sum; // khoi tao do dai tu a toi moi dinh la vo cung

S[i] = 0; // danh sach cac diem da xet

P[i] = a; // dat diem bat dau cua moi diem la a

}

Len[a] = 0; // dat do dai tu a -> a la 0

// tim duong di ngan nhat tu 1 dinh den moi dinh khac thi thay bang vong for:

while (S[b] == 0) { // trong khi diem cuoi chua duoc xet

for (i = 0; i < n; i++) // tim 1 vi tri ma khong phai la vo cung

if (!S[i] && Len[i] < sum)

break;

if (i >= n) {// i >=n tuc la duyet het cac dinh ma khong the tim thay dinh b -> thoat

break;

}

for (int j = 0; j < n; j++) { // tim diem co vi tri ma do dai la min

if (!S[j] && Len[i] > Len[j]) {

i = j;

}

}

S[i] = 1; // cho i vao danh sach xet roi

for (int j = 0; j < n; j++) { // tinh lai do dai cua cac diem chua xet

if (!S[j] && Len[i] + G[i][j] < Len[j]) {

Len[j] = Len[i] + G[i][j]; // thay doi len

P[j] = i; // danh dau diem truoc no

}

}

}

/\* Do ta dang tinh toan tu dinh 0 nen

muon hien thi tu dinh 1 thi can dung i + 1 de phu hop \*/

if (Len[b] > 0 && Len[b] < sum) {

cout<<Len[b]<<endl;

// truy vet

while (i != a) {

cout<<i +1<<"<-";

i = P[i];

}

cout<<a+1;

} else {

cout<<"khong co duong di tu "<<a+1<<" den "<<b+1<<endl;

}

fclose(fi);

return 0;

}

**Đề 17:**

#include <iostream>

#include <iomanip>

#include <fstream>

#include <queue>

#define MAX 50

using namespace std;

int doThi[MAX][MAX], n, dem;

int chuaxet[MAX];

void init(){

ifstream filein( "MTKe.txt", ios::in);

filein >> n;

for(int i=0; i<n; i++){

for(int j=0; j<n; j++){

filein >> doThi[i][j];

}

}

}

void BFS(int v){

queue<int> q;

q.push(v);

chuaxet[v] = false;

dem++;

do{

int u = q.front();

q.pop();

for(int i=0; i<n; i++){

if(doThi[u][i] && chuaxet[i]){

q.push(i);

chuaxet[i] = false;

dem++;

}

}

}while (!q.empty());

}

bool lienThongManh(){

for( int i = 0; i<n; i++){

for( int j = 0; j<n; j++){

chuaxet[j] = 1;

dem = 0;

}

BFS(i);

if(dem<n) return false;

}

return true;

}

bool lienThongYeu(){

for( int i = 0; i<n; i++){

if(chuaxet[i]){

BFS( i );

if(dem<n) return false;

}

}

return true;

}

int main(){

int dem = 0;

init();

if(lienThongManh())

cout << "\nDo thi lien thong manh!";

else if(lienThongYeu())

cout << "\nDo thi lien thong yeu!";

else

cout<< "\nDo thi khong lien thong manh, khong lien thong yeu!";

return 0;

}

**Đề 18 :**

#include<iostream>

#include<conio.h>

using namespace std;

#define TRUE 1

#define FALSE 0

#define MAX 10000

int a[100][100];

int n ,m, sc, w;

int chuaxet[100];

int cck[100][3];

void nhap(){

int i, j, k;

freopen("DOTHI.INP", "r",stdin);

cin>>n>>m;

for (i = 1; i <= n; i++){

chuaxet[i] = TRUE;

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

a[i][j] = MAX;

}

for (int p = 1; p <= m; p++){

cin>>i>>j>>k;

a[i][j] = k;

a[j][i] = k;

}

}

void PRIM(){

int k, top, min, l, t, u;

int s[100];

sc = 0; w = 0; u = 1;

top = 1;

s[top] = u;

chuaxet[u] = FALSE;

while (sc<n - 1) {

min = MAX;

for (int i = 1; i <= top; i++){

t = s[i];

for (int j = 1; j <= n; j++){

if (chuaxet[j] && min>a[t][j]){

min = a[t][j];

k = t;

l = j;

}

}

}

sc++;

w = w + min;

cck[sc][1] = k;

cck[sc][2] = l;

cck[sc][3] = a[k][l];

chuaxet[l] = FALSE;

top++;

s[top] = l;

}

}

void Result(){

int sum=0;

for (int i = 1; i <= sc; i++){

sum += cck[i][3];

}

cout << sum << endl;

for (int i = 1; i <= sc; i++){

cout<< cck[i][1]<<" "<< cck[i][2] <<" "<< a[cck[i][1]][cck[i][2]] <<endl;

}

}

int main(){

nhap();

PRIM();

Result();

getch();

return 0;

}

**Đề 19 :**

#include <iostream>

#include <vector>

#include <algorithm> // Hàm sort

#include<fstream>

using namespace std;

int n, k;

struct edge {

int u, v, w;

};

bool cmp(const edge &a, const edge &b) {

return a.w < b.w;

}

#define N 10005

int cha[N], hang[N];

int find(int u) {

if (cha[u] != u) cha[u] = find(cha[u]);

return cha[u];

}

bool join(int u, int v) {

bool tmp;

u = find(u); v = find(v);

if (u == v) return false;

if (hang[u] == hang[v]) hang[u]++;

if (hang[u] < hang[v]) cha[u] = v;

else cha[v]=u;

return true;

}

int main() {

ifstream ifs("DOTHI.INP");

ifs >> n >> k;

vector<edge> edges;

for (int i = 0; i < k; i ++)

{

struct edge e;

int a1,a2,a3;

ifs >> a1 >> a2 >> a3;

e.u = a1;

e.v = a2;

e.w = a3;

edges.push\_back(e);

}

ifs.close();

sort(edges.begin(), edges.end(), cmp);

for (int i=1; i<=n; i++) {

cha[i] = i;

hang[i] = 0;

}

int mst\_weight = 0;

for (int i = 0; i < k; i++ ) {

if (join(edges[i].u, edges[i].v)) {

mst\_weight += edges[i].w;

}

}

cout << mst\_weight<<endl;

for (int i=1; i<=n; i++) {

cha[i] = i;

hang[i] = 0;

}

for (int i = 0; i < k; i++ ) {

if (join(edges[i].u, edges[i].v)) {

cout << edges[i].u << " " << edges[i].v<< " " << edges[i].w <<endl;

}

}

return 0;

}

**Đề 20 :**

#include <iostream>

#include <fstream>

#include <queue>

using namespace std;

int V, G[1111][1111], k;

int flag[1111];

void bfs(int k) {

queue<int> queue;

queue.push(k);

flag[k] = 1;

while (!queue.empty()) {

int u = queue.front();

queue.pop();

for (int i = 1; i <= V; i++) {

if (G[u][i] == 1 && flag[i] == 0) {

cout << u << " " << i << endl;

queue.push(i);

flag[i] = 1;

}

}

}

}

int main() {

fstream fin;

fin.open("bai20.txt", ios::in);

fin >> V >> k;

for (int i = 1; i <= V; i++) {

for (int j = 1; j <= V; j++) {

fin >> G[i][j];

}

}

cout << V << " " << V - 1 << endl;

bfs(k);

}

Đề 21 :

#include<iostream>

#include<fstream>

using namespace std;

int a[50][50], chuaxet[50];

int t, n;

int T[50][2];

/\* -dung mang hai chieu a[][] de luu thong tin ma tran ke.

-dung mang chuaxet[] de danh dau cac dinh cua do thi khi duyet;

-dung ma tran T[][2] de luu dinh dau, cuoi cu mot canh khi no dc ket nap vao cay khung;

-dung bien toan cuc t,n tuong ung la de dem so canh va so dinh cua do thi.

-dung queue de duyet BFS(u);

\*cac buoc duyet BFS( u ) de tao cay khung do thi nhu sau:

B0: nhap thong tin tu file, khoi tao mang chuaxet[] = {1};

B1: Khoi tao Queue rong, chuaxet[u] = 0; push( queue, u )

B2: lap khi nao queue chua rong:

s = Pop(queue);

for( i = 1; i<= n; i++ ){

neu chuaxet[i] && a[s][i] == 1 thi :

Push( queue, i );

ket nap canh (s,i) vao cay khung;

t++;

chuaxet[i] = 0;

}

B3: ghi thong tin ra file.

\*/

struct Node{

Node \*next;

int data;

};

struct Queue{

Node \*head;

Node \*tail;

};

void Init( Queue &q ){

q.head = q.tail = NULL;

}

Node \*createNode( int x ){

Node \*p = new Node;

if(!p) return NULL;

p->data = x;

p->next = NULL;

return p;

}

void Push( Queue &q, Node \*p ){

if(!q.head) q.head = q.tail = p;

else{

q.tail->next = p;

q.tail = p;

}

}

int Pop( Queue &q ){

if( q.head ){

int x = q.head->data;

Node \*p = q.head;

q.head = q.head->next;

delete p;

return x;

}

return 0;

}

void ReInit(){

for( int i = 1; i<= n; i++ ) chuaxet[i] = 1;

}

void nhap(){

ifstream ifs("test.txt");

ifs >> n;

for( int i = 1; i<= n; i++ ){

for( int j = 1; j<= n; j++ )

ifs >> a[i][j];

}

ReInit();

ifs.close();

}

void BFS( int u ){

Queue q;

Init(q);

Node \*p = createNode(u);

Push(q, p);

chuaxet[u] = 0;

while(q.head){

int s = Pop(q);

for( int i = 1; i<= n; i++ )

if( chuaxet[i] && a[s][i] ) {

Node \*p = createNode( i );

Push( q, p );

T[t][1] = s;

T[t][2] = i;

chuaxet[i] = 0;

t++;

}

}

t--;

}

void xuat(){

BFS(1);

ofstream ofs("test2.txt");

if( t != n-1 ) ofs << "\nDo thi khong lien thong";

else{

ofs << n << " " << t << endl;

for( int i = 1; i<= t; i++ )

ofs << T[i][1] << " " << T[i][2] << endl;

}

ofs.close();

}

int main(){

t = 1;

nhap();

xuat();

return 0;

}

**Đề 22 :**

#include <iostream>

#include <fstream>

#include <queue>

#define MAX 50

using namespace std;

//bfs xac dinh tru do thi

int doThi[MAX][MAX], n, nlKet, dangXet = -1;

int chuaXet[MAX];

int demLKet();

void init(){

ifstream filein( "Dothi.txt", ios::in);

filein >> n;

for(int i=1; i<=n; i++){

for(int j=1; j<=n; j++){

filein >> doThi[i][j];

}

}

nlKet = demLKet();

}

void BFS(int v){

queue<int> q;

q.push(v);

chuaXet[v] = false;

do{

int u = q.front();

q.pop();

for(int i=1; i<=n; i++){

if(doThi[u][i] && chuaXet[i] && i!=dangXet){

q.push(i);

chuaXet[i] = false;

}

}

}while (!q.empty());

}

int demLKet(){

int i, dem = 0;

for(i = 1; i<=n; i++){

chuaXet[i] = 1;

}

for(i = 1; i<=n; i++){

if(chuaXet[i] && dangXet!=i ){

dem++;

BFS( i );

}

}

return dem;

}

void duyet(){

int dem=0;

for(dangXet = 0; dangXet<=n; dangXet++){

if(demLKet()>nlKet){

dem++;

}

}

cout<<dem<<endl;

for(dangXet = 0; dangXet<=n; dangXet++){

if(demLKet()>nlKet){

cout<< dangXet << " ";

}

}

}

int main(){

init();

duyet();

return 0;

}

**Đề 23 :**

#include <iostream>

#include <fstream>

#include <queue>

#define MAX 50

using namespace std;

int doThi[MAX][MAX], n, nlKet;

int chuaxet[MAX];

int demLKet();

void init(){

ifstream filein( "Dothi.txt", ios::in);

filein >> n;

for(int i=1; i<=n; i++){

for(int j=1; j<=n; j++){

filein >> doThi[i][j];

}

}

nlKet = demLKet();

}

void BFS(int v){

queue<int> q;

q.push(v);

chuaxet[v] = false;

do{

int u = q.front();

q.pop();

for(int i=1; i<=n; i++){

if(doThi[u][i] && chuaxet[i]){

q.push(i);

chuaxet[i] = false;

}

}

}while (!q.empty());

}

int demLKet(){

int i, dem = 0;

for(i = 1; i<=n; i++){

chuaxet[i] = 1;

}

for(i = 1; i<=n; i++){

if(chuaxet[i]){

dem++;

BFS( i );

}

}

return dem;

}

void duyetCau(){

int i, j,dem =0;

for(i = 1; i<=n; i++){

for(j = 1; j<=n; j++){

if(doThi[i][j]){

doThi[i][j] = 0;

if(demLKet()>nlKet){

dem++;

}

doThi[i][j] = 1;

}

}

}

cout<<dem<<endl;

for(i = 1; i<=n; i++){

for(j = 1; j<=n; j++){

if(doThi[i][j]){

doThi[i][j] = 0;

if(demLKet()>nlKet){

// dem++;

cout << i << " "<< j<<endl;

}

doThi[i][j] = 1;

}

}

}

}

int main(){

init();

demLKet();

duyetCau();

return 0;

}

Đề 24 :

#include<iostream>

#include<fstream>

using namespace std;

int a[50][50], chuaxet[50];

int t, n, k;

int T[50][2];

int M[50][2];

struct Node{

Node \*next;

int data;

}

struct Queue{

Node \*head;

Node \*tail;

};

void Init( Queue &q ){

q.head = q.tail = NULL;

}

Node \*createNode( int x ){

Node \*p = new Node;

if(!p) return NULL;

p->data = x;

p->next = NULL;

return p;

}

void Push( Queue &q, Node \*p ){

if(!q.head) q.head = q.tail = p;

else{

q.tail->next = p;

q.tail = p;

}

}

int Pop( Queue &q ){

if( q.head ){

int x = q.head->data;

Node \*p = q.head;

q.head = q.head->next;

delete p;

return x;

}

return 0;

}

void ReInit(){

for( int i = 1; i<= n; i++ ) chuaxet[i] = 1;

}

void nhap(){

ifstream ifs("DOTHI.INP");

ifs >> n >> k;

for( int j = 1; j<= k; j++ )

for( int i = 1; i<= 2; i++ )

ifs >> M[j][i];

for( int j = 1; j<= k; j++ )

a[M[j][1]][M[j][2]] = a[M[j][2]][M[j][1]] = 1;

ReInit();

ifs.close();

}

void BFS( int u ){

Queue q;

Init(q);

Node \*p = createNode(u);

Push(q, p);

chuaxet[u] = 0;

while(q.head){

int s = Pop(q);

for( int i = 1; i<= n; i++ )

if( chuaxet[i] && a[s][i] ) {

Node \*p = createNode( i );

Push( q, p );

T[t][1] = s;

T[t][2] = i;

chuaxet[i] = 0;

t++;

}

}

t--;

void xuat() {

int u;

cout << "Nhap so u tu ban phim: ";

cin >>u;

BFS(u);

if (t != n - 1) cout << -1;

else {

cout << 1 << endl;

for (int i = 1; i <= t; i++)

cout << T[i][1] << " " << T[i][2] << endl;

}

}

int main(){

t = 1;

nhap();

xuat();

return 0;

}

**Đề 25 :**

#include<iostream>

#include<fstream>

using namespace std;

int a[50][50], chuaxet[50] ,T[50][2],t,n;

struct Node{

Node \*next;

int data;

};

struct Queue{

Node \*head;

Node \*tail;

};

void Init( Queue &q ){

q.head = q.tail = NULL;

}

Node \*createNode( int x ){

Node \*p = new Node;

if(!p) return NULL;

p->data = x;

p->next = NULL;

return p;

}

void Push( Queue &q, Node \*p ){

if(!q.head) q.head = q.tail = p;

else{

q.tail->next = p;

q.tail = p;

}

}

int Pop( Queue &q ){

if( q.head ){

int x = q.head->data;

Node \*p = q.head;

q.head = q.head->next;

delete p;

return x;

}

return 0;

}

void ReInit(){

for( int i = 1; i<= n; i++ ) chuaxet[i] = 1;

}

void nhap(){

ifstream ifs("DOTHI.INP");

ifs >> n;

for( int i = 1; i<= n; i++ ){

for( int j = 1; j<= n; j++ )

ifs >> a[i][j];

}

ReInit();

ifs.close();

}

void BFS( int u ){

Queue q;

Init(q);

Node \*p = createNode(u);

Push(q, p);

chuaxet[u] = 0;

while(q.head){

int s = Pop(q);

for( int i = 1; i<= n; i++ )

if( chuaxet[i] && a[s][i] ) {

Node \*p = createNode( i );

Push( q, p );

T[t][1] = s;

T[t][2] = i;

chuaxet[i] = 0;

t++;

}

}

t--;

}

void DFS(int u) { // duyet do thi dung de quy

chuaxet[u] = 0;

for (int i = 1; i <= n; i++)

if (chuaxet[i] && a[u][i]) {

T[t][1] = u;

T[t][2] = i;

t++;

DFS(i);

}

}

void xuat(){

int u ;

cin >> u;

DFS(u);

if( t != n ) cout << -1;

else{

cout << 1 << endl;

for( int i = 1; i< t; i++ )

cout << T[i][1] << " " << T[i][2] << endl;

}

}

int main(){

t = 1;

nhap();

xuat();}