Q. To find out whether 2 relatives are blood relatives.

Code:-

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import java.util.\*;

public class BloodRelation

{ int famSize, index1=-1,index2=-1;

int matrix[][];

Vector<Integer> v1 = new Vector<Integer>(20);

Vector<Integer> v2 = new Vector<Integer>(20);

BloodRelation(int vex)

{

this.famSize=vex;

this.matrix=new int[vex][vex];

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

for(int j=0;j<vex;j++)

matrix[i][j]=0;

}

void displayMatrix()

{

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

{

for (int m = 0; m < famSize; m++)

{

System.out.print(matrix[n][m]+ " ");

}

System.out.println();

}

System.out.println(v1);

System.out.println(v2);

}

void connect(int source, int destination)

{

matrix[source-1][destination-1] = 1;

}

public void checkA(int a)

{

int t1=0,cnt1=0;

boolean condi1=true;

while(condi1!=false)

{

for(int i=0;i<famSize;i++)//checking for a

{

if(matrix[i][a]==1)

{

if(cnt1==1)

{

v1.add(i);

index1++;

checkA(v1.lastElement());

cnt1=-1;

}

else

{ t1=i;

v1.add(a);

index1++;

v1.add(i);

index1++;

cnt1++;

checkA(v1.lastElement());

}

}

}

if(cnt1==0)

{ condi1=false;

v1.add(a);

}

if(cnt1==-1)

break;

}

}

public void checkB(int b)

{

int t2=0,cnt2=0;

boolean condi2=true;

while(condi2!=false)

{

{

for(int i=0;i<famSize;i++)//checking for b

{

if(matrix[i][b]==1)

{

if(cnt2==1)

{

v2.add(i);

index2++;

checkB(v2.lastElement());

cnt2=-1;

}

else

{ t2=i;

v2.add(b);

index2++;

v2.add(i);

index2++;

cnt2++;

checkB(v2.lastElement());

}

}

}

if(cnt2==0)

{ condi2=false;

v2.add(b);

}

if(cnt2==-1)

break;

}

}

}

void finalCheck()

{ boolean fin=false;

if(v1.size()>v2.size())

{

for(int i=0;i<v1.size();i++)

{

for(int j=0;j<v2.size();j++)

{

if(v2.get(j)==v1.get(i))

{

fin=true;

break;

}

}

if(fin==true)

break;

}

}

else

{

for(int i=0;i<v2.size();i++)

{

for(int j=0;j<v1.size();j++)

{

if(v1.get(j)==v2.get(i))

{

fin=true;

break;

}

}

if(fin==true)

break;

}

}

if(fin==true)

System.out.println("They are blood relatives.");

else

System.out.println("They are not blood relatives.");

}

public static void main(String[] args)

{ Scanner sc=new Scanner(System.in);

System.out.println("Enter Family Size.");

BloodRelation br=new BloodRelation(sc.nextInt());//27

br.connect(1,3);

br.connect(2,3);

br.connect(3,5);

br.connect(4,5);

br.connect(6,8);

br.connect(7,8);

br.connect(10,13);

br.connect(11,13);

br.connect(6,4);

br.connect(7,4);

br.connect(8,16);

br.connect(9,16);

br.connect(8,12);

br.connect(9,12);

br.connect(12,27);

br.connect(13,27);

br.connect(14,9);

br.connect(15,9);

br.connect(14,17);

br.connect(15,17);

br.connect(19,18);

br.connect(20,18);

br.connect(17,23);

br.connect(18,23);

br.connect(19,21);

br.connect(20,21);

br.connect(23,25);

br.connect(24,25);

br.connect(21,26);

br.connect(22,26);

System.out.println("Enter two ids to be checked.");

int a=sc.nextInt()-1;

int b=sc.nextInt()-1;

br.checkA(a);

br.checkB(b);

br.finalCheck();

}

}