**/\* 24.Design a class matrix and perform multiplication,addition, substraction and transpose in it\*/**

using namespace std;

#include<iostream>

class matrix

{

private:

int mat[10][10];

int rc;

public:

void size(int n)

{

rc=n;

}

void matinput();

void matprint();

void transpose () ;

matrix operator +(matrix);

matrix operator -(matrix);

matrix operator \*(matrix);

};

void matrix::matinput()

{

cout<<"\n\tType "<<rc\*rc<<"\n \t Elements: are ";

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

{

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

{

cout <<"\n \t enter the elements ["<<i<<"]["<<j<<"]";

cin>>mat[i][j];

}

}

}

void matrix::matprint()

{

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

{

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

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

cout<<"\n";

}

}

matrix matrix:: operator + (matrix m)

{

matrix matsum;

matsum.size(rc);

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

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

matsum.mat[i][j]=mat[i][j]+m.mat[i][j];

return matsum;

}

matrix matrix:: operator - (matrix m)

{

matrix matsum;

matsum.size(rc);

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

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

matsum.mat[i][j]=mat[i][j]-m.mat[i][j];

return matsum;

}

matrix matrix:: operator \* (matrix m)

{

matrix matsum;

matsum.size(rc);

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

{

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

{

matsum.mat [i][j]=0;

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

{

matsum.mat[i][j]= matsum.mat[i][j]+(mat[i][j]\*m.mat[j][i]);

}

}

}

return matsum;

}

void matrix ::transpose ()

{

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

{ cout <<"\n ";

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

{

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

}

}

}

int main()

{ matrix A,B,C;

int rc;int choise;

char ch ;

cout<<"\n\tType the order of the matrix:";

cin>>rc;

A.size(rc);

B.size(rc);

C.size(rc);

cout<<"\nMatrix A:";

A.matinput();

cout<<"\n Matrix B:";

B.matinput();

cout<<"\nMatrix A:";

A.matprint();

cout<<"\nMatrix B:";

B.matprint();

cout <<"\n\t \*\*\*\*\*\*\* the menu of this programme is \*\*\*\*\*\*\*\*";

cout<<"\n\t1.\*\*\*\*for sum of two matrix\*\*\*\*";

cout <<"\n\t2.\*\*\*\*for diffrence of 2 matrix\*\*\*\* ";

cout<<"\n \t3.\*\*\*\*for multiplication of 2 martix\*\*\*\* ";

cout<<"\n\t4.\*\*\*\*for transpose of matrix \*\*\*\*";

cout<<"\n enter the choise ";

do

{

cin>>choise;

switch (choise)

{

case 1:

C=A+B;

cout<<"\nSum of the matrix:\n";

C.matprint();

break;

case 2:

C=A-B;

cout<<"\n difference of the matrix:\n";

C.matprint();

break;

case 3:

cout <<"\n the product of matrix is\n" ;

C=A\*B;

C.matprint();

break;

case 4:

cout <<"\n the transpose is matrix a is :";

A.transpose();

cout <<"\n the transpose is matrix a is :";

B.transpose();

break;

default:

cout <<"\n sorry wrong choise enter ";

}

cout <<"\n do u wish to enter more ";

cin>>ch;

cout<<"\n enter the choise"; }

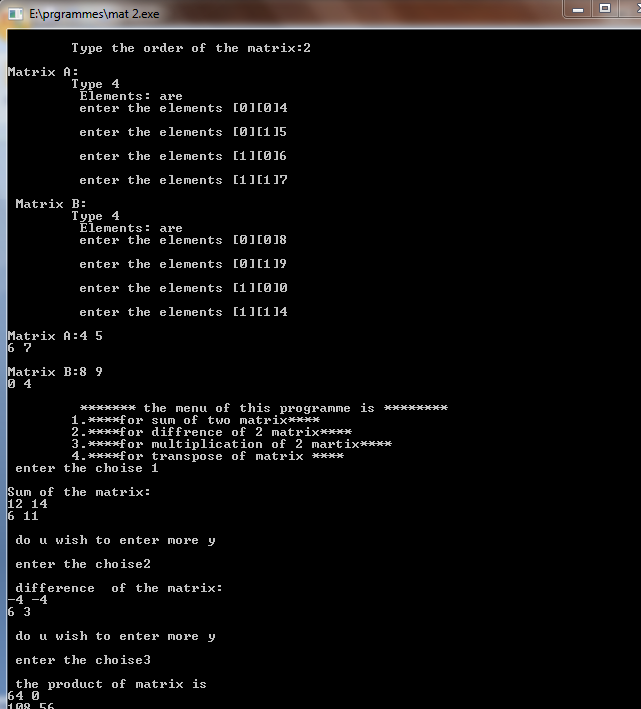
while (ch=='y');

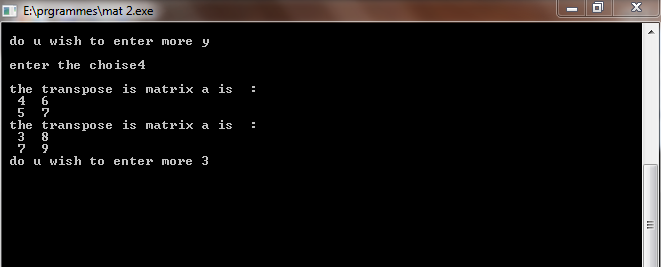
system("pause");

return 0;

}

/ \* Output :-



 \*/