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**Roll no:-125**

**Practical Name: Implementation of prog. Based on Matrix**

**Practical no.:**

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#include<iostream.h>

#include<conio.h>

class MATRIX

{

int r1,c1,r2,c2,r3,c3;

int A[5][5],B[5][5],C[5][5];

public:

void READ();

void SHOW();

void ADD();

void SUB();

void MULT();

};

void MATRIX::READ()

{

cout<<"\n Enter no of rows matrix 1:";

cin>>r1;

cout<<"\n Enter no of cols matrix 1:";

cin>>c1;

cout<<"\n Enter no of rows matrix 2:";

cin>>r2;

cout<<"\n Enter no of cols matrix 2:";

cin>>c2;

cout<<"\n Enter matrix 1 elements:";

for(int i=1;i<=r1;i++)

for(int j=1;j<=c1;j++)

cin>>A[i][j];

cout<<"\n Enter matrix 2 elements:";

for(i=1;i<r2;i++)

for(j=1;j<=c2;j++)

cin>>B[i][j];

}

void MATRIX::SHOW()

{ cout<<endl<<"Matrix 1 element are:"<<endl;

for(int i=1;i<r1;i++)

{

for(int j=1;j<=r1;j++)

cout<<A[i][j]<<"\t";

cout<<"\n";

}

cout<<endl<<"Matrix 2 elements are:"<<endl;

for(int k=1;k<r2;k++)

{

for(int j=1;j<=c2;j++)

cout<<B[k][j]<<"\t";

cout<<"\n";

}

cout<<endl<<"Matrix 3 elements are:"<<endl;

for(k=1;k<=r2;k++)

{

for(int j=1;j<c2;j++)

cout<<C[k][j]<<"\t";

cout<<"\n";

}

}

void MATRIX::ADD()

{

if(r1==r2 && c1==c2)

for(int i=1;i<=r2;i++)

for(int j=1;j<=c2;j++)

C[i][j]=A[i][j]+B[i][j];

else

cout<<endl<<"Addition .....not...";

}

void MATRIX::SUB()

{

if(r1==r2 && c1==c2)

for(int i=1;i<=r2;i++)

for(int j=1;j<=c2;j++)

C[i][j]=A[i][j]-B[i][j];

else

cout<<endl<<"sub ....not...";

}

void MATRIX::MULT()

{

if(c1==r1)

for(int i=1;i<=r2;i++)

for(int j=1;j<=c2;j++)

{

C[i][j]=0;

for(int k=1;k<=c1;k++)

C[i][j]+=A[i][j]\*B[k][j];

}

else

cout<<endl<<"Multipli...not...";

}

void main()

{

MATRIX a;

int ch;

clrscr();

a.READ();

do

{

cout<<endl<<"Enter your choice:";

cin>>ch;

switch(ch)

{

case 1:

cout<<endl<<"Addion of matrix:";

a.ADD();

a.SHOW();

break;

case 2:

cout<<endl<<"Substraction of matrix:";

a.SUB();

a.SHOW();

break;

case 3:

cout<<endl<<"Multiplication of matrix:";

a.MULT();

a.SHOW();

break;

case 4:

cout<<"Exit"<<endl;

break;

default:

cout<<"Invalid Choice"<<endl;

}

}while(ch!=4);

getch();

}