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#include<iostream>
using namespace std;
int main()
{
int r,c,i,j,ch;
int mul[10][10];
cout<<"\nEnter no.of rows: ";
cin>>r;
cout<<"Enter no. of columns: ";
cin>>c;
int a[10][10],b[10][10],d[10][10];
cout<<endl<<"Enter elements of first matrix: ";
//Accepting and displaying 2 matrices
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
cin>>a[i][j];
}
}
cout<<endl<<"Enter elements of second matrix: ";
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
cin>>b[i][j];
}
}
cout<<"Your 1st entered Matrix is: "<<endl;
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
cout<<a[i][j]<<" ";
}
cout<<endl;
}
cout<<"Your 2nd entered Matrix is: "<<endl;
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
cout<<b[i][j]<<" ";
}
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cout<<endl;
}
int flag=0;
while(flag==0)
{
cout<<"\t1. Addition of Matrix"<<endl;
cout<<"\t2. Subtraction of Matrix"<<endl;
cout<<"\t3. Transpose of Matrix A"<<endl;
cout<<"\t4. Multiplication of matrices"<<endl;
cout<<"\t5. Exit"<<endl;

cout<<"Enter your choice: "<<endl;
cin>>ch;
switch(ch)
{
case 1:
//Addition of matrix
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
d[i][j]=a[i][j]+b[i][j];
}
}

//display of addition
cout<<"Addition of entered 2 matrices is: "<<endl;
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
cout<<d[i][j]<<" ";
}
cout<<endl;
}
break;
case 2:
//subtraction of matrix
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
d[i][j]=a[i][j]-b[i][j];
}
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}

//display of subtraction
cout<<"Subtraction of entered 2 matrices is: "<<endl;
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
cout<<d[i][j]<<" ";
}
cout<<endl;
}
break;
case 3:
//Transpose of matrix
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)

{
d[i][j]=a[j][i];
}
}
//display A transpose
cout<<"Transpose of 1st matrix is: "<<endl;
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
cout<<d[i][j]<<" ";
}
cout<<endl;
}
break;
case 4:
//Multiplication of matrix
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{ mul[i][j]=0;
for(int k=0;k<c;k++)
{
mul[i][j]=mul[i][j]+a[i][k]*b[k][j];
}
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}
}
//Display multiplication
cout<<"Multiplication of 1st matrix is: "<<endl;
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
cout<<mul[i][j]<<" ";
}
cout<<endl;
}
break;
case 5:
flag=1;
break;
default:
cout<<"Invalid Input";
}
}
return 0;
}
```