

Answer on Question#38173- Programming - C++

1. write a c++ program which reads two matrix and multiply them if possible

Solution.

```
#include <iostream>

using namespace std;

int main(int argc, char* argv[])
{
    int m=0,n1=0,n2=0,k=0;
    cout<<"Enter the size of the matrix A:"<<endl<<"Rows: "; cin>>m;
    cout<<endl<<"Columns: "; cin>>n1; cout<<endl;
    cout<<"Enter the size of the matrix B:"<<endl<<"Rows: "; cin>>n2;

    if(n2!=n1)
    {cout<<"The number of columns do not correspond to the number of rows in the
matrices A and B."<<endl<<
        "Multiply matrix A by matrix B can not be!";
        system("pause");
        return 0;
    }

    cout<<endl<<"Columns: "; cin>>k; cout<<endl;

    int**A=new int*[m];
    for(int i=0; i<m;i++) { A[i]=new int[n1]; }
    cout<<endl<<"Enter the matrix A:"<<endl;

    for(int ki=0; ki<m; ki++)
    {
        for(int kj=0; kj<n1; kj++)
        {
            cout<<ki<<"x"<<kj<<">> "; cin>>A[ki][kj]; cout<<endl;
        }
    }

    int**B=new int*[n1];
    for(int i=0; i<n1;i++) { B[i]=new int[k]; }
    cout<<endl<<"Enter the matrix B:"<<endl;

    for(int ki=0; ki<n1; ki++)
    {
        for(int kj=0; kj<k; kj++)
        {
            cout<<ki<<"x"<<kj<<">> "; cin>>B[ki][kj]; cout<<endl;
        }
    }

    int**C=new int*[m];
    for(int i=0; i<m;i++) { C[i]=new int[k]; }

    int buf=0;
```

```

for(int columns=0; columns<k; columns++)
{
    for(int rows=0; rows<m; rows++)
    {
        for(int j=0; j<n1; j++)
        {
            buf+=A[rows][j]*B[j][columns];
        }
        C[rows][columns]=buf;
        buf=0;
    }
}

cout<<"The matrix A is multiplied by a matrix B!"<<endl;
cout<<"Result: "<<endl;

for(int i=0; i<m;i++)
{
    for(int j=0; j<k;j++)
    {
        cout<<C[i][j]<<" ";
    }
    cout<<endl;
}

    for (int i = 0; i<m; i++){delete [] C[i];}
    delete [] C;
    for (int i = 0; i<n1; i++){delete [] B[i];}
    delete [] B;
    for (int i = 0; i<m; i++){delete [] A[i];}
    delete [] A;

    system("pause");
    return 0;
}

```

```

d:\Projects\qqq\Debug\qqq.exe
Enter the size of the matrix A:
Rows: 3
Columns: 2
Enter the size of the matrix B:
Rows: 2
Columns: 3
Enter the matrix A:
0x0>> 1
0x1>> 2
1x0>> 3

```

```
d:\Projects\qqq\Debug\qqq.exe
2x0>> 2
2x1>> 3

Enter the matrix B:
0x0>> 1
0x1>> 22
0x2>> 3
1x0>> 31
1x1>>
2
1x2>> 3

The matrix A is multiplied by a matrix B!
Result:
63 26 9
93 686 99
95 50 15
```