

## MatMulti.cpp

```
1  #include<iostream>
2  #include<iomanip>
3  #include<vector>
4
5  using namespace std;
6
7
8  int main()
9  {
10     cout << "Enter The Values of 1st Matrix number of rows(m) and columns(n):\n";
11     cout << "m:\n";
12     int m,n,p;
13     cin >> m;
14     cout <<"n\n";
15     cin >> n;
16     cout<< "Enter the Values of 2nd Matrix number of columns:\n";//As the number of rows os
2nd matrix is equal to 1st matrix columns;
17     cout <<"p\n";
18     cin>> p;
19     vector<vector<double> >MatA(m,vector<double>(n,0.0));
20     vector<vector<double> >MatB(n,vector<double>(p,0.0));
21     vector<vector<double> >Res(m,vector<double>(p,0.0));
22
23     cout<<"Enter the Values for matrixA:\n";
24     for(int i=0;i<m;i++)
25     {
26         for(int j=0;j<n;j++)
27         {
28             cin >> MatA[i][j];
29         }
30     }
31     cout <<"MatA\n";
32
33     for(int i=0;i<m;i++)
34     {
35         for(int j=0;j<n;j++)
36         {
37             cout << MatA[i][j]<<" ";
38         }
39         cout <<"\n";
40     }
41
42     cout<<"Enter the values for MatrixB:\n";
43     for(int i=0;i<n;i++)
44     {
45         for(int j=0;j<p;j++)
46         {
47             cin >> MatB[i][j];
48         }
49     }
50
51     cout <<"MatB\n";
```

```

52     for(int i=0;i<n;i++)
53     {
54         for(int j=0;j<p;j++)
55         {
56             cout << MatB[i][j]<<" ";
57         }
58         cout <<"\n";
59     }
60
61     cout << "Multiplication of MatA and MatB:\n";
62
63     for(int i=0;i<m;i++)
64     {
65         for(int j=0;j<p;j++)
66         {
67             Res[i][j] = 0.0;
68             for(int k=0;k<n;k++)
69             {
70                 Res[i][j] = Res[i][j]+MatA[i][k]*MatB[k][j];
71             }
72             cout<<fixed<<setprecision(3)<<Res[i][j] <<" ";
73         }
74         cout <<"\n";
75     }
76 }
77 }

```