Assignment number - 4

Aim : Create a class MAT of size m * n. Define all possible matrix operations for MAT type objects

Batch : A-1

Roll Number : 04

Input Code :

```
#include <iostream>
using namespace std;

class MAT {
private:
   int a[2][2];

public:
   MAT() {
      for (int i = 0; i < 2; i++) {
         for (int j = 0; j < 2; j++) {
            a[i][j] = 0;
         }
      }
   }
   void accept() {
      cout << "\nEnter 4 elements: ";
      for (int i = 0; i < 2; i++) {
         for (int j = 0; j < 2; j++) {
            cin >> a[i][j];
         }
      }
   }
   void display() {
      cout << endl;
      for (int i = 0; i < 2; i++) {
         for (int j = 0; j < 2; j++) {
            cout << " " << a[i][j];
         }
         cout << endl;
      }
   }
   MAT operator+(const MAT& M2) const {
      MAT result;
      for (int i = 0; i < 2; i++) {
```

```
            for (int j = 0; j < 2; j++) {
                result.a[i][j] = a[i][j] + M2.a[i][j];
            }
        }
        return result;
    }
    MAT operator-(const MAT& M2) const {
        MAT result;
        for (int i = 0; i < 2; i++) {
            for (int j = 0; j < 2; j++) {
                result.a[i][j] = a[i][j] - M2.a[i][j];
            }
        }
        return result;
    }
    MAT operator*(const MAT& M2) const {
        MAT result;
        for (int i = 0; i < 2; i++) {
            for (int j = 0; j < 2; j++) {
                for (int k = 0; k < 2; k++) {
                    result.a[i][j] += a[i][k] * M2.a[k][j];
                }
            }
        }
        return result;
    }
};

int main() {
    MAT M1, M2, M3;

    cout << "\nEnter Matrix M1 values: ";
    M1.accept();

    cout << "\nEnter Matrix M2 values: ";
    M2.accept();

    M3 = M1 + M2;
    cout << "\nAddition of M1 + M2: ";
    M3.display();

    M3 = M1 - M2;
    cout << "\nSubtraction of M1 - M2: ";
    M3.display();

    M3 = M1 * M2;
```

```
    cout << "\nMultiplication of M1 * M2: ";
    M3.display();
    return 0;
}
```

Output :

```
Enter Matrix M1 values:
Enter 4 elements: 44 55 66 8844
44 55 66 88

Enter Matrix M2 values:
Enter 4 elements: 11 44 22 20

Addition of M1 + M2:
 132 55
 99 88

Subtraction of M1 - M2:
 -44 33
 11 44

Multiplication of M1 * M2:
 5808 1452
 7744 2057
```