```
/*
 Name:- Rahul Singh
 Roll no:- S 56
 */


import java.util.Scanner;
class Matrix
{
   public static void main(String args[])
{
        System.out.println("Enter the no. of rows: ");
        Scanner m = new Scanner(System.in);
        int row = m.nextInt();
        System.out.println("Enter the no. of columns: ");
        int columns = m.nextInt();

        int[][] first = new int[row][columns];
        int[][] second = new int[row] [columns];


        for(int r=0;r<row;r++)
{
        for(int c=0; c<columns; c++)
{
      System.out.println(String.format("Enter first[%d][%d]
intger",r,c));
          first[r][c]=m.nextInt();
```

```
}
}

   for(int r=0;r<row;r++)
{
    for(int c=0;c<columns;c++)
 {
    System.out.println(String.format("Enter second[%d][%d]
intger",r,c));
      second[r][c] = m.nextInt();
}
}


   System.out.println("First matrix: \n");
   print2dArray(first);


   System.out.println("Second matrix:\n");
   print2dArray(second);



System.out.println("****Main****");
System.out.println("1.Additon");
System.out.println("2.Sutraction");
System.out.println("3.Multiplication");
System.out.println("4.Exit");
System.out.println("Enter your option: ");
int option = m.nextInt();
```

```
switch(option)
{
  case 1:
   sum(first,second);
    break;
  case 2:
    subtract(first,second);
     break;
  case 3:
    multiply(first,second);
     break;
}
}
```

```
 private static void sum(int[][] first, int[][] second) {
        int row = first.length;
        int column = first[0].length;
        int[][] sum = new int[row][column];

        for (int r = 0; r < row; r++) {
            for (int c = 0; c < column; c++) {
                sum[r][c] = first[r][c] + second[r][c];
            }
        }
```

```
        System.out.println("\nSum of Matrices:\n");
        print2dArray(sum);
    }


 static void subtract(int[][] first, int[][] second) {
    int row = first.length;
    int column = first[0].length;
    int[][] sum = new int[row][column];

    for (int r = 0; r < row; r++) {
        for (int c = 0; c < column; c++) {
            sum[r][c] = first[r][c] - second[r][c];
        }
    }

    System.out.println("\nSubtraction of Matrices:\n");
    print2dArray(sum);
}

 static void multiply(int[][] first, int[][] second) {
    int row = first.length;
    int column = first[0].length;
    int[][] sum = new int[row][column];
```

```
    for (int r = 0; r < row; r++) {
        for (int c = 0; c < column; c++) {
            sum[r][c] = first[r][c] * second[r][c];
        }
    }

    System.out.println("\nMultiplication of Matrices:\n");
    print2dArray(sum);
}

   private static void print2dArray(int[][] matrix) {
        for (int r = 0; r < matrix.length; r++) {
            for (int c = 0; c < matrix[0].length; c++) {
                System.out.print(matrix[r][c] + "\t");
            }
            System.out.println();
        }
    }

}
```

OUTPUT

```
Enter the no. of rows:
2
Enter the no. of columns:
2
Enter first[0][0] intger
1
Enter first[0][1] intger
2
Enter first[1][0] intger
3
Enter first[1][1] intger
4
Enter second[0][0] intger
5
Enter second[0][1] intger
6
Enter second[1][0] intger
7
Enter second[1][1] intger
8
First matrix:

1       2
3       4
Second matrix:

5       6
7       8
****Main****
1.Additon
2.Sutraction
3.Multiplication
4.Exit
Enter your option:
3

Multiplication of Matrices:

5       12
21      32
PS C:\Users\Rahul singh\Downloads\Java-main\Java-main>
```