

Assignment – 5

Practice Questions : 1

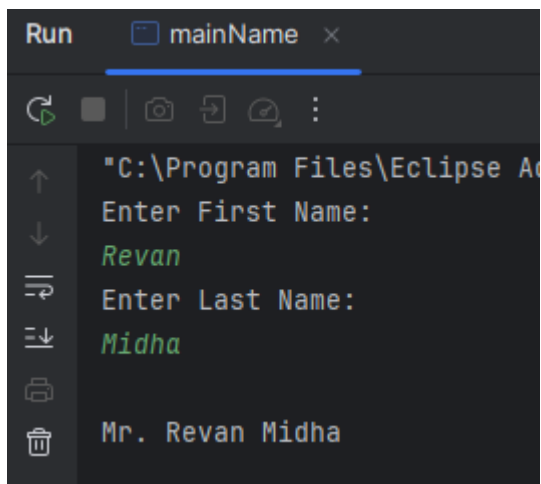
Q1) WAP to take first name and last name of the user and return full name with "Mr. "/"Ms."

CODE :

```
© FullName.java × mainName.java
1 package Practice3;
2
3 public class FullName { 2 usages  ⬆ RevanMidha005
4     void Name(String fn, String ln) { 1 usage  ⬆ RevanMidha005
5         System.out.println("Mr. " + fn + " " + ln);
6     }
7 }
8
```

```
© FullName.java  mainName.java ×
1 package Practice3;
2 import java.util.Scanner;
3
4 public class mainName { ⬆ RevanMidha005
5     public static void main(String[] args) { ⬆ RevanMidha005
6         Scanner scn = new Scanner(System.in);
7
8         String fn, ln;
9         System.out.println("Enter First Name: ");
10        fn = scn.next();
11        System.out.println("Enter Last Name: ");
12        ln = scn.next();
13        System.out.println();
14
15        FullName obj = new FullName();
16        obj.Name(fn, ln);
17    }
18 }
19
```

OUTPUT :



The screenshot shows the 'Run' console window in an Eclipse IDE. The window title is 'Run' with a sub-tab 'mainName'. The console output is as follows:

```
"C:\Program Files\Eclipse Ad  
Enter First Name:  
Revan  
Enter Last Name:  
Midha  
Mr. Revan Midha
```

The input 'Revan' and 'Midha' are shown in green text, indicating they were entered by the user. The final output line is 'Mr. Revan Midha'.

HANDWRITTEN :

Ans) FullName.java

```
package Practice3;
```

```
public class FullName {
```

```
    void Name (String fn, String ln) {
```

```
        System.out.println("M.H. " + fn + " " + ln);
```

```
    }
```

```
}
```

mainName.java

```
package Practice3;
```

```
import java.util.Scanner;
```

```
public class mainName {
```

```
    public static void main (String[] args) {
```

```
        Scanner sc = new Scanner(System.in);
```

```
        String fn, ln;
```

```
        System.out.println("Enter first name: ");
```

```
        fn = sc.nextLine();
```

```
        System.out.println("Enter last name: ");
```

```
        ln = sc.nextLine();
```

```
        System.out.println();
```

```
        FullName obj = new FullName();
```

```
        obj.Name (fn, ln)
```

```
}
```

```
}
```

Spiral

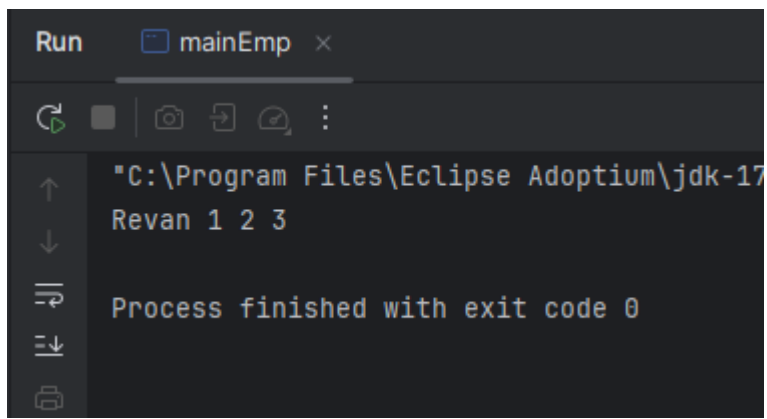
Q2) Create an Employee class and in the main the main method make two objects of Employee class and display them.

CODE :

```
© Employee.java × mainEmp.java
1 package Practice3;
2
3 public class Employee { new *
4     String name;
5     int id;
6     int age;
7     String dept;
8
9     Employee(String name, int id, int age, String dept) { new *
10         this.name = name;
11         this.id = id;
12         this.age = age;
13         this.dept = dept;
14     }
15     @Override new *
16     public String toString() {
17         return (name + " " + id + " " + age + " " + dept);
18     }
19 }
20
```

```
© Employee.java mainEmp.java ×
1 package Practice3;
2
3 public class mainEmp { new *
4     public static void main(String[] args) { new *
5         Employee obj = new Employee( name: "Revan", id: 1, age: 2, dept: "3");
6         System.out.println(obj);
7
8
9     }
10 }
11
```

OUTPUT :



The screenshot shows the Eclipse IDE's Run console window. The title bar reads "Run" and "mainEmp x". The console output is as follows:

```
"C:\Program Files\Eclipse Adoptium\jdk-17
Revan 1 2 3

Process finished with exit code 0
```

The left sidebar of the console contains standard icons: a green play button, a stop button, a camera, a copy icon, a paste icon, and a print icon.

HANDWRITTEN :

Ans) Employee.java

```
package hractice3;
```

```
public class Employee {
```

```
    String Name;
```

```
    int id;
```

```
    int age;
```

```
    String dept;
```

```
    Employee (String name, int id, int age, String dept) {
```

```
        this.Name = name;
```

```
        this.id = id;
```

```
        this.age = age;
```

```
        this.dept = dept;
```

```
    }
```

```
    @Override
```

```
    public String toString() {
```

```
        return (Name + " " + id + " " + age + " " + dept);
```

```
    }
```

```
}
```

mainEmp.java

```
package hractice3;
```

```
public class mainEmp {
```

```
    public static void main (String[] args) {
```

```
        mainEmp emp = new mainEmp ("Rohan", 1, 2, "3");
```

```
        System.out.println(emp);
```

```
    }
```

```
}
```

Q3) Write a method to sort an array.

CODE :

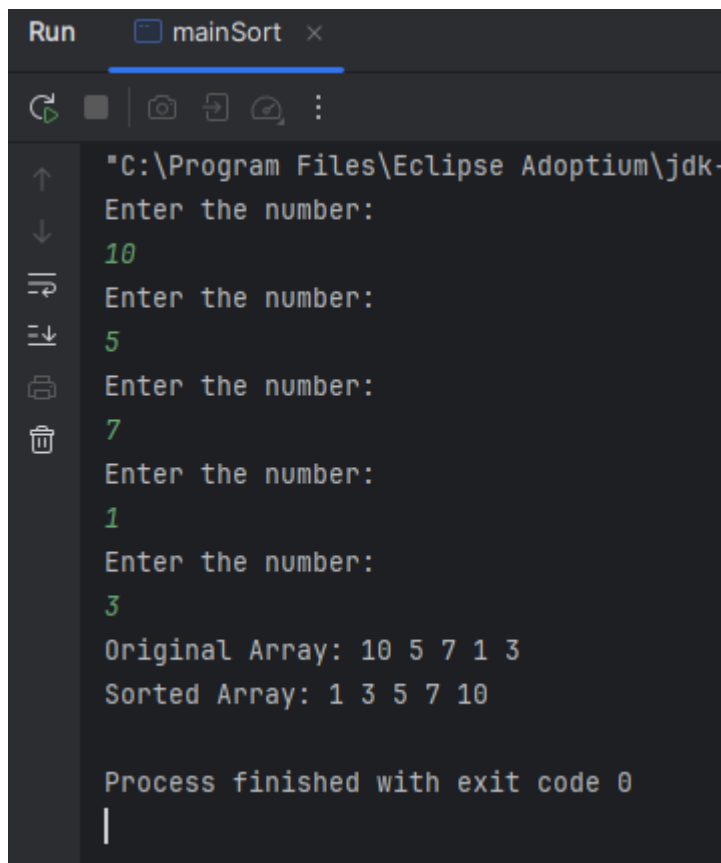
```
Sort.java x
1 package Practice3;
2
3 public class Sort { 2 usages  ⤴ RevanMidha005
4     @ int[] sortArr(int []arr){ 1 usage  ⤴ RevanMidha005
5         boolean flag;
6
7         for (int i = 0; i < arr.length; i++){
8             flag = false;
9
10            for (int j = 0; j < arr.length - i - 1; j++){
11                if (arr[j] > arr[j+1]){
12                    int temp = arr[j];
13                    arr[j] = arr[j+1];
14                    arr[j+1] = temp;
15
16                    flag = true;
17                }
18            }
19
20            if (!flag){
21                break;
22            }
23        }
24        return arr;
25    }
26 }
27
```

Sort.java

mainSort.java ×

```
4 public class mainSort {  ⚙ RevanMidha005
5     public static void main(String[] args) {  ⚙ RevanMidha005
6         Scanner scn = new Scanner(System.in);
7         int[] arr = new int[5];
8
9         for (int i = 0; i < 5; i++) {
10             System.out.println("Enter the number: ");
11             arr[i] = scn.nextInt();
12         }
13
14         System.out.print("Original Array: ");
15         for (int i : arr) {
16             System.out.print(i + " ");
17         }
18         System.out.println();
19
20         Sort obj = new Sort();
21         arr = obj.sortArr(arr);
22
23         System.out.print("Sorted Array: ");
24         for (int i:arr){
25             System.out.print(i + " ");
26         }
27         System.out.println();
28     }
29 }
30 |
```


OUTPUT :



```
Run  mainSort x
C:\Program Files\Eclipse Adoptium\jdk-
Enter the number:
10
Enter the number:
5
Enter the number:
7
Enter the number:
1
Enter the number:
3
Original Array: 10 5 7 1 3
Sorted Array: 1 3 5 7 10

Process finished with exit code 0
|
```

HANDWRITTEN :

Ans) Sort.java

package practice3;

public class Sort {

int [] ~~arr~~ sortArr (int [] arr) {
boolean flag;

for (int i=0; i < arr.length; i++) {
flag = false;

for (int j=0; j < arr.length; j++) {
if (arr[j] > arr[j+1]) {
int temp = arr[j];
arr[j] = arr[j+1];
arr[j+1] = temp;

flag = true;

}
if (!flag) {
break;

}
return arr;

}
}

mainSort.java

package Practice3;
import java.util.Scanner;

public class mainSort {

public static void main(String[] args) {
Scanner sc = new Scanner(System.in);
int [] arr = new int[5];

for (int i = 0; i < 5; i++) {
System.out.println("Enter number: ");
arr[i] = sc.nextInt();
}

System.out.println("Original array: ");

for (int i : arr) {
System.out.print(i + " ");
}

System.out.println();

Sort obj = new Sort();
arr = obj.sortArray(arr);

System.out.println("Sorted array: ");

for (int i : arr) {
System.out.print(i + " ");
}

System.out.println();

}

Q4) Write a method to reverse an array.

CODE :

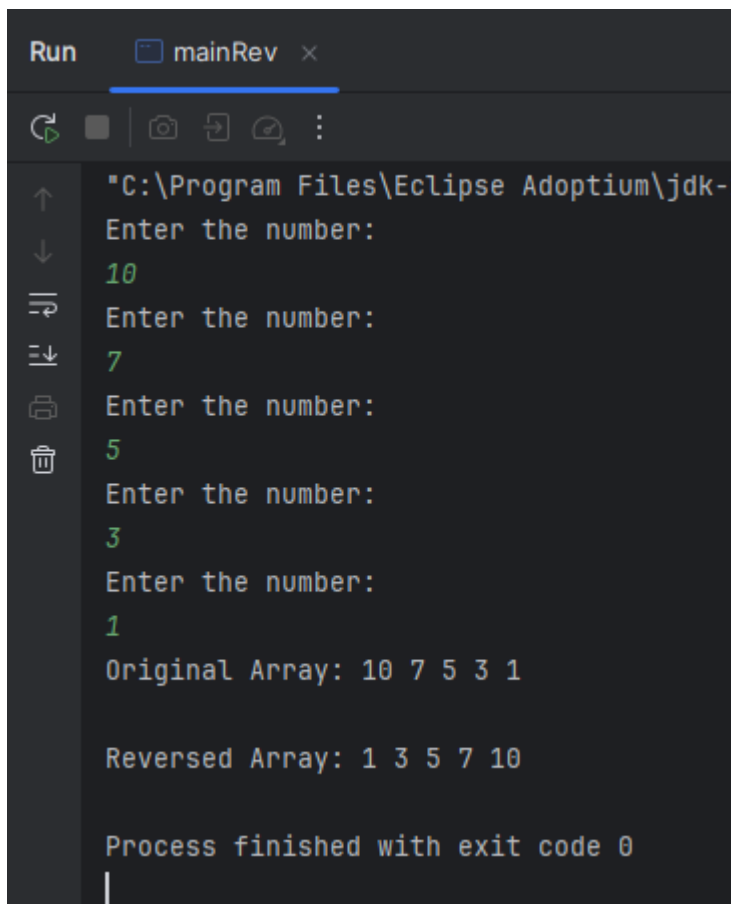
```
Reverse.java × mainRev.java
1 package Practice3;
2
3 public class Reverse { 2 usages  ⤴ RevanMidha005
4   @ int[] RevArr(int []arr){ 1 usage  ⤴ RevanMidha005
5       System.out.println();
6       int x, temp;
7
8       for (int i = arr.length - 1; i >= arr.length/2; i--){
9           temp = arr[i];
10          x = arr.length - i - 1;
11          arr[i] = arr[x];
12          arr[x] = temp;
13      }
14      return arr;
15  }
16 }
```

Reverse.java

mainRev.java ×

```
1 package Practice3;
2 import java.util.Scanner;
3
4 public class mainRev {  ⚡ RevanMidha005
5     public static void main(String[] args) {  ⚡ RevanMidha005
6         Scanner scn = new Scanner(System.in);
7         int[] arr = new int[5];
8
9         for (int i = 0; i < 5; i++) {
10             System.out.println("Enter the number: ");
11             arr[i] = scn.nextInt();
12         }
13
14         System.out.print("Original Array: ");
15         for (int i : arr) {
16             System.out.print(i + " ");
17         }
18         System.out.println();
19
20         Reverse obj = new Reverse();
21         arr = obj.RevArr(arr);
22
23         System.out.print("Reversed Array: ");
24         for (int i:arr){
25             System.out.print(i + " ");
26         }
27         System.out.println();
28     }
29 }
30
```

OUTPUT:



```
Run  mainRev x
Enter the number:
10
Enter the number:
7
Enter the number:
5
Enter the number:
3
Enter the number:
1
Original Array: 10 7 5 3 1

Reversed Array: 1 3 5 7 10

Process finished with exit code 0
```

HANDWRITTEN :

Ans) Reverse Java

package Mainice3;

public class Reverse {
 int[] reverse(int []arr) {
 int x, temp;

for (int i = arr.length - 1; i >= arr.length / 2; i--) {
 temp = arr[i];
 x = arr.length - i - 1;
 arr[i] = arr[x];
 arr[x] = temp;

}
return arr;

}

}

mainRev.java

```
package practice3;  
import java.util.Scanner;
```

```
public class mainRev {  
    public static void main (String [] args) {  
        Scanner sc = new Scanner (System.in);  
        int [] arr = new int (5);
```

```
        for (int i = 0; i < 5; i++) {  
            int System.out.print ("Enter number: ");  
            arr[i] = sc.nextInt();  
        }
```

```
        System.out.println ("Original Array: ");  
        for (int i = 0; i < arr.length; i++) {  
            System.out.print (arr[i] + " ");  
        }
```

```
        System.out.println();
```

```
        Reverse obj = new Reverse();  
        arr = obj.reverse(arr);
```

```
        System.out.println ("Reversed Array: ");  
        for (int i = 0; i < arr.length; i++) {  
            System.out.print (arr[i] + " ");  
        }
```

```
        System.out.println();  
    }
```

```
}
```


Q5) Write a method to take input in two matrix from user and display the sum of matrix

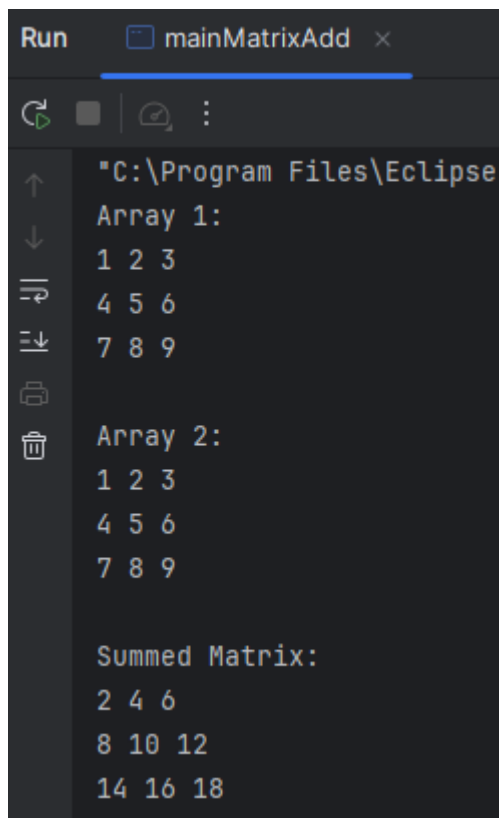
CODE :

```
MatrixAdd.java × mainMatrixAdd.java
1 package Practice3;
2
3 public class MatrixAdd { 2 usages ↑ RevanMidha005
4     int[][] MatAdd(int[][] arr1, int[][] arr2) { 1 usage ↑ RevanMidha005
5         int[][] sumarr = new int[3][3];
6
7         for (int i = 0; i < 3; i++) {
8             for (int j = 0; j < 3; j++) {
9                 sumarr[i][j] = arr1[i][j] + arr2[i][j];
10            }
11        }
12        return sumarr;
13    }
14 }
```

```
1 package Practice3;
2
3 public class mainMatrixAdd {  ⚡ RevanMidha005
4     public static void main(String[] args) {  ⚡ RevanMidha005
5
6         /*
7         int [][]arr1 = new int[3][3];
8         int [][]arr2 = new int[3][3];
9         int n;
10
11         for (int i = 0; i < 3; i++){
12             for (int j = 0; j < 3; j++){
13                 n = scn.nextInt();
14                 arr1[i][j] = n;
15             }
16         }
17
18         for (int i = 0; i < 3; i++){
19             for (int j = 0; j < 3; j++){
20                 n = scn.nextInt();
21                 arr2[i][j] = n;
22             }
23         }
24         */
25
26         int[][] arr1 = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}};
27         int[][] arr2 = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}};
28
29         System.out.println("Array 1: ");
30         for (int[] i : arr1) {
31             for (int j : i) {
32                 System.out.print(j + " ");
33             }
34             System.out.println();
35         }
36         System.out.println();
37
38         System.out.println("Array 2: ");
```

```
38     System.out.println("Array 2: ");
39     for (int[] i : arr2) {
40         for (int j : i) {
41             System.out.print(j + " ");
42         }
43         System.out.println();
44     }
45     System.out.println();
46
47     int sumarr[][] = new int[3][3];
48     MatrixAdd obj = new MatrixAdd();
49     sumarr = obj.MatAdd(arr1, arr2);
50
51     System.out.println("Summed Matrix: ");
52     for (int[] i : sumarr) {
53         for (int j : i) {
54             System.out.print(j + " ");
55         }
56         System.out.println();
57     }
58 }
59 }
```

OUTPUT :



The screenshot shows a Java IDE console window titled "Run" with a tab for "mainMatrixAdd". The console output is as follows:

```
"C:\Program Files\Eclipse
Array 1:
1 2 3
4 5 6
7 8 9

Array 2:
1 2 3
4 5 6
7 8 9

Summed Matrix:
2 4 6
8 10 12
14 16 18
```

The output displays two 3x3 matrices, Array 1 and Array 2, followed by their element-wise sum, labeled "Summed Matrix".

HANDWRITTEN :

Ans) MatrixAdd.java

package practice3;

public class MatrixAdd {

int[][] matAdd (int [][] arr1, int [][] arr2) {
 int [][] sumarr = new int [3][3];

for (int i = 0; i < 3; i++) {
 for (int j = 0; j < 3; j++) {
 sumarr[i][j] = arr1[i][j] + arr2[i][j];
 }

}

return sumarr;

}

}

mainMatrixMult

package practice3;

public class ^{Add}mainMatrixMult {

public static void main (String[] args) {

int [][]arr1 = new int [3][3];

int [][]arr2 = new int [3][3];

~~int [];~~

System.out.println("Enter elements of arr 1: ");

for (int i=0; i<3; i++){

for (int j=0; j<3; j++){

arr1[i][j] = km.nextInt();

}

}

System.out.println("Enter elements of arr 2: ");

for (int i=0; i<3; i++){

for (int j=0; j<3; j++){

arr2[i][j] = km.nextInt();

}

}

System.out.println("Enter Array 1: ");

for (int i : arr1) {

for (int j : i) {

System.out.print(j + " ");

}

System.out.println();

}

System.out.println();

DT. [] [] []

```

    System.out.println("Array 2: ");
    for (int i: arr2) {
        for (int j: i) {
            System.out.print(j + " ");
        }
        System.out.println();
    }
    System.out.println();

```

```

int [][] sum matarr = new int[3][3];
MatrixAdd obj = new MatrixAdd();

sumarr = obj.matAdd(arr1, arr2);

```

```

    System.out.println("Summed Matrix: ");
    for (int i: sumarr) {
        for (int j: i) {
            System.out.print(j + " ");
        }
        System.out.println();
    }

```

```

}
}

```

Q6) Write a method to take input in two matrix from user and display the product of matrix

CODE :

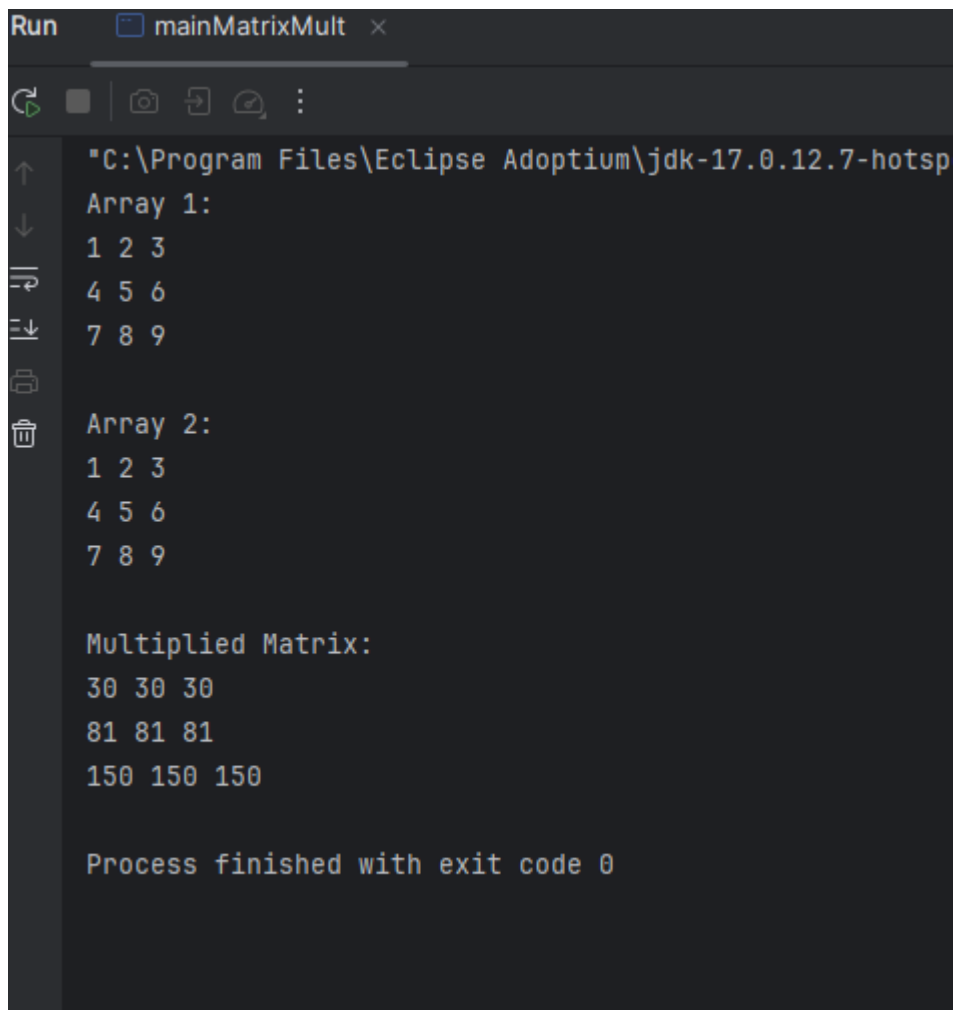
```
MatrixMult.java × mainMatrixMult.java
1 package Practice3;
2
3 public class MatrixMult {
4     int [][] MatMult(int [][]arr1, int [][]arr2){
5         int [][]multarr = new int[3][3];
6
7         for (int i = 0; i < 3; i++){
8             for (int j = 0; j < 3; j++){
9                 for (int k = 0; k < 3; k++){
10                    multarr[i][j] += arr1[i][k] * arr2[k][j];
11                }
12            }
13        }
14        return multarr;
15    }
16 }
```



```
1 package Practice3;
2
3 public class mainMatrixMult {
4     public static void main(String[] args) {
5         /*
6         int [][]arr1 = new int[3][3];
7         int [][]arr2 = new int[3][3];
8         int n;
9
10        for (int i = 0; i < 3; i++){
11            for (int j = 0; j < 3; j++){
12                n = scn.nextInt();
13                arr1[i][j] = n;
14            }
15        }
16
17        for (int i = 0; i < 3; i++){
18            for (int j = 0; j < 3; j++){
19                n = scn.nextInt();
20                arr2[i][j] = n;
21            }
22        }
23        */
24
25        int[][] arr1 = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}};
26        int[][] arr2 = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}};
27
28        System.out.println("Array 1: ");
29        for (int[] i : arr1) {
30            for (int j : i) {
31                System.out.print(j + " ");
32            }
33            System.out.println();
34        }
```

```
27
28     System.out.println("Array 1: ");
29     for (int[] i : arr1) {
30         for (int j : i) {
31             System.out.print(j + " ");
32         }
33         System.out.println();
34     }
35     System.out.println();
36
37     System.out.println("Array 2: ");
38     for (int[] i : arr2) {
39         for (int j : i) {
40             System.out.print(j + " ");
41         }
42         System.out.println();
43     }
44     System.out.println();
45
46     int multarr[][] = new int[3][3];
47     MatrixMult obj = new MatrixMult();
48     multarr = obj.MatMult(arr1, arr2);
49
50     System.out.println("Multiplied Matrix: ");
51     for (int[] i : multarr) {
52         for (int j : i) {
53             System.out.print(j + " ");
54         }
55         System.out.println();
56     }
57 }
58 }
```

OUTPUT :



```
Run  mainMatrixMult  x
C:\Program Files\Eclipse Adoptium\jdk-17.0.12.7-hotsp
Array 1:
1 2 3
4 5 6
7 8 9
Array 2:
1 2 3
4 5 6
7 8 9
Multiplied Matrix:
30 30 30
81 81 81
150 150 150
Process finished with exit code 0
```

HANDWRITTEN :

```
Any MatrixMult.java

package Practice3;

public class MatrixMult {
    int [][] matMult(int [][] arr1, int [][] arr2) {
        int [][] multarr = new int [3][3];

        for (int i=0; i<3; i++) {
            for (int j=0; j<3; j++) {
                for (int k=0; k<3; k++) {
                    multarr[i][j] += arr1[i][k] + arr2[k][j];
                }
            }
        }

        return multarr;
    }
}
```

mainMatrixMult.java

package practice8;

public class mainMatrixMult {

public static void main(String[] args) {

int [][] arr1 = new int[3][3];

int [][] arr2 = new int[3][3];

~~int [];~~

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

arr1[i][j] = scan.nextInt();

}

}

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

arr2[i][j] = scan.nextInt();

}

}

System.out.println("Array 1:");

for (int i = 0; i < arr1.length; i++) {

for (int j = 0; j < arr1[i].length; j++) {

System.out.print(arr1[i][j] + " ");

}

System.out.println();

}

System.out.println();

```

System.out.println("Array 2: ");
for (int i = 0; i < arr2.length; i++) {
    for (int j = 0; j < arr2[i].length; j++) {
        System.out.print(arr2[i][j] + " ");
    }
    System.out.println();
}
System.out.println();

```

```

int[][] multarr = new int[3][3];
MatrixMult obj = new MatrixMult();
multarr = obj.matrixMult(arr1, arr2);

```

```

System.out.println("Multiplied Matrix: ");
for (int i = 0; i < multarr.length; i++) {
    for (int j = 0; j < multarr[i].length; j++) {
        System.out.print(multarr[i][j] + " ");
    }
    System.out.println();
}

```