# Shri G.S. Institute of Technology and Science

# INDORE



## Department of Information Technology and Application

**MCA First Year Semester I January -June 2025**

**Lab Assignment II**

**CT10708: Object Oriented Programming Using Java**

SUBMITED TO                                             SUBMITTED BY

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**Print a Floyd's Triangle:**
```
1
2 3
4 5 6
7 8 9 10
```

Que1)

```java
public class pattern_1 {
   public static void main(String[] args){
      int num = 1;
      System.out.println("Shiv Arora");
      for (int i = 1; i <= 4; i++) {
         for (int j = 1; j <= i; j++) {
            System.out.print(num++ + " ");
         }
         System.out.println();
      }
   }
}
```

OUTPUT:

```
D:\JAVA_college\Assignment 2\Codes>java pattern_1.java
Shiv Arora
1
2 3
4 5 6
7 8 9 10
```

**Print a Pascal's Triangle:**
```
        1
      1   1
     1  2  1
    1 3  3 1
   1  4 6 4 1
```

```java
public class pattern_2 {
   public static void main(String[] args) {
      System.out.println("Shiv Arora");
      int rows = 5;
      for (int i = 0; i < rows; i++) {
         for (int space = 0; space < rows - i - 1; space++) {
            System.out.print("  ");
         }
         int num = 1;
         for (int j = 0; j <= i; j++) {
            System.out.print(num + "   ");
            num = num * (i - j) / (j + 1);
```

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

OUTPUT:

```
D:\JAVA_college\Assignment 2\Codes>java pattern_2.java
Shiv Arora
        1
      1   1
    1   2   1
  1   3   3   1
1   4   6   4   1
```

Print a rectangle of characters-
A B C D E F
A B C D E F
A B C D E F
Que2)   A B C D E F

```
public class pattern_3 {
  public static void main(String[] args) {
    System.out.println("Shiv Arora");
    for (int i = 0; i < 4; i++) {
      for (char ch = 'A'; ch <= 'F'; ch++) {
        System.out.print(ch + " ");
      }
      System.out.println();
    }
  }
}
```

OUTPUT:

```
D:\JAVA_college\Assignment 2\Codes>java pattern_3.java
Shiv Arora
A B C D E F
A B C D E F
A B C D E F
A B C D E F
```

Print a right-angled triangle of characters:
```
        A
        A B
        A B C
        A B C D
```

```java
public class pattern_4 {
    public static void main(String[] args) {
        System.out.println("Shiv Arora");
        for (int i = 1; i <= 4; i++) {
            for (char ch = 'A'; ch < 'A' + i; ch++) {
                System.out.print(ch + " ");
            }
            System.out.println();
        }
    }
}
```

OUTPUT:

```
D:\JAVA_college\Assignment 2\Codes>java pattern_4.java
Shiv Arora
A
A B
A B C
A B C D
```

Print a pattern with spaces and asterisks
forming a specific shape (e.g., a cross):

```
*       *
  *   *
    *
  *   *
*       *
```

Que 3)

```java
public class pattern_5 {
    public static void main(String[] args) {
        System.out.println("Shiv Arora");
        int size = 5;
        for (int i = 0; i < size; i++) {
            for (int j = 0; j < size; j++) {
                if (i == j || i + j == size - 1)
                    System.out.print("* ");
                else
                    System.out.print("  ");
            }
            System.out.println();
```

```
        }
      }
    }
```

OUTPUT:

```
D:\JAVA_college\Assignment 2\Codes>java pattern_5.java
Shiv Arora
*         *
   *    *
     *
   *    *
*         *
```

Print a pattern with numbers and
       alphabets combined:

```
1A
2B  3C
4D  5E  6F
7D  8E  9F  10J
```

```java
public class pattern_6 {
  public static void main(String[] args) {
    System.out.println("Shiv Arora");
    int num = 1;
    char ch = 'A';
    for (int i = 1; i <= 4; i++) {
      for (int j = 0; j < i; j++) {
        System.out.print(num++ + "" + ch++ + " ");
      }
      System.out.println();
    }
  }
}
```

OUTPUT:

```
D:\JAVA_college\Assignment 2\Codes>java pattern_6.java
Shiv Arora
1A
2B 3C
4D 5E 6F
7G 8H 9I 10J
```

```
Print the following patterns-
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

Que 4)

```java
public class pattern_7 {
    public static void main(String[] args) {
        System.out.println("Shiv Arora");
        for (int i = 1; i <= 5; i++) {
            for (int j = 0; j < i; j++) {
                System.out.print(i + " ");
            }
            System.out.println();
        }
    }
}
```

OUTPUT:

```
D:\JAVA_college\Assignment 2\Codes>java pattern_7.java
Shiv Arora
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

```java
public class pattern_8 {
    public static void main(String[] args) {
        System.out.println("Shiv Arora");
        for (int i = 1; i <= 5; i++) {
            for (int j = 1; j <= i; j++) {
                System.out.print(j + " ");
            }
            System.out.println();
        }
    }
}
```

OUTPUT:

```
D:\JAVA_college\Assignment 2\Codes>java pattern_8.java
Shiv Arora
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

```
  2
  3 4
  4 5 6
  5 6 7 8
  6 7 8 9 10
```

```java
public class pattern_9 {

    public static void main(String[] args) {

        System.out.println("Shiv Arora");

        for (int i = 1; i <= 5; i++) {

            int num = i + 1;

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

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

            }

            System.out.println();

        }

    }

}
```

OUTPUT:

```
D:\JAVA_college\Assignment 2\Codes>java pattern_9.java
Shiv Arora
2
3 4
4 5 6
5 6 7 8
6 7 8 9 10
```