Assignment – 2

Basic loop statements

(While, Do-While & For Loop)

No. 1

Write a program to print first n odd numbers.

```
/*Java program to print a series of odd numbers. */


//Importing required packages

import java.util.*;


//Implementing main class

public class _5_OddNumbers {


        //implementing the main method

        public static void main(String[] x) {


                //Declaring required objects and variables

                Scanner scan = new Scanner(System.in);

                int length, count = 1;


                //Getting required input/s form user

                System.out.print("\nEnter the length of the series:\t");

                length = scan.nextInt();
```

```
            //Implementing the program logic

    System.out.println("\n");

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

            if(i%2 == 1) {

                    System.out.print(i + "\t");

                    ++count;

            }

    }

    System.out.println("\n");

    }

}
```

No. 2

Write a program to check that the given number is prime or not.

```
/*Java program to check a prime number. */


//Importing required packages

import java.util.*;


//Implementing main class

public class _6_PrimeCheck {


    //implementing the main method

    public static void main(String[] x) {


            //Declaring required objects and variables

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

```
        int n;

        boolean composite = false;


        //Getting requited input from the user

        System.out.print("\nEnter a number to check:\t");

        n = scan.nextInt();


        //Implementing the program logic

        for(int i = 2 ; i < (n/2) ; i++ ) {

                if(n%i == 0) {

                        composite = true;

                        break;

                }

        }

        if(composite == true)

                System.out.println("\n" + n + " is a composite number.");

        else

                System.out.println("\n" + n + " is a prime number.");

    }

}
```

No. 3

Write a program to draw the given patterns.

(1.)

```
/*Java program to draw below Pattern
```

```
* * * * *

* * * * *

* * * * *

* * * * *

* * * * *


*/


//implementing main class

public class _7_1 {


        //implementing the main method

        public static void main(String[] x) {


                //Implementing the program logic

                System.out.println();

                for(int i = 0 ; i < 5 ; i++)

                        System.out.println("* * * * *");

        }

}
```

(2.)

```
/*Java program to draw below Pattern



*

* *

* * *

* * * *

* * * * *
```

```java
*/


//implementing main class
public class _7_2 {


        //implementing the main method
        public static void main(String[] x) {


                //Implementing the program logic
                System.out.println();
                for(int i = 1 ; i <= 5 ; i++) {
                        for(int j = 0 ; j < i ; j++)
                                System.out.print("* ");
                        System.out.println();
                }
        }
}
```

(3.)

```java
/*Java program to draw below Pattern



* * * * *

* * * *

* * *

* *

*


*/
```

```
//implementing main class

public class _7_3 {


        //implementing the main method

        public static void main(String[] x) {


                //Implementing the program logic

                System.out.println();

                for(int i = 5 ; i >= 1 ; i--) {

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

                                System.out.print("* ");

                        System.out.println();

                }

        }

}
```

(4.)

```
/*Java program to draw below Pattern


    *

   * *

  * * *

 * * * *

* * * * *




*/




//implementing main class
```

```java
public class _7_4 {



    //implementing the main method

    public static void main(String[] x) {


        //Implementing the program logic

        System.out.println();

        for(int i = 5 ; i > 0 ; i--) {

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

                if(j < i)

                    System.out.print(" ");

                else

                    System.out.print("* ");

            }
            System.out.println();

        }

    }

}
```

(5.)

```java
/*Java program to draw below Pattern


    *

   * * *

  * * * * *

 * * * * * * *

* * * * * * * * *



*/
```

```java
//implementing main class

public class _7_5 {


        //implementing the main method

        public static void main(String[] x) {


                //Declaring required variables

                int k = 5, ast = 0, pos = 1;


                //Implementing the program logic

                System.out.println();

                for(int i = 0 ; i < 5 ; i++) {

                        for(int j = 1 ; j <= 9 ; j++) {

                                if(j < k)

                                        System.out.print(" ");

                                else {

                                        if(ast < pos) {

                                                System.out.print("* ");

                                                ast++;

                                        }

                                }

                        }

                        k--;

                        pos = pos + 2;

                        ast = 0;

                        System.out.println();

                } } }
```

(6.)

```
/*Java program to draw below Pattern


    *

   * * *

  * * * * *

 * * * * * * *

* * * * * * * * *

 * * * * * * *

  * * * * *

   * * *

    *



*/


//implementing main class

public class _7_6 {


        //implementing the main method
        public static void main(String[] x) {


                //Declaring required variables
                int k = 5, ast = 0, pos = 1;


                //Implementing the program logic
                System.out.println();
                for(int i = 0 ; i < 5 ; i++) {

                        for(int j = 1 ; j <= 9 ; j++) {
```

```java
            if(j < k)
                    System.out.print(" ");
            else {
                    if(ast < pos) {
                            System.out.print("* ");
                            ast++;
                    }
            }
        }
        k--;
        pos = pos + 2;
        ast = 0;
        System.out.println();
    }

    //Reverse logic

    //Reseting necessary variables
    k = 0; pos = 7;
    for(int i = 0 ; i < 5 ; i++) {
        for(int j = 1 ; j <= 8 ; j++) {
            if(j <= k + 1)
                    System.out.print(" ");
            else {
                    if(ast < pos) {
                            System.out.print("* ");
                            ast++;
                    }
```

```
                    }
                }
                k++;
                pos = pos - 2;
                ast = 0;
                System.out.println();
            }
        }
}
```

(7.)

```
/*Java program to draw below Pattern


* * * * * * * * *

 * * * * * * *

  * * * * *

   * * *

    *

   * * *

  * * * * *

 * * * * * * *

* * * * * * * * *




*/



//implementing main class

public class _7_7 {



    //implementing the main method
```

```java
public static void main(String[] x) {


        //Declaring required variables

        int k = 0, ast = 0, pos = 9;


        //Implementing the program logic

        System.out.println();

        for(int i = 0 ; i < 5 ; i++) {

                for(int j = 1 ; j <= 10 ; j++) {

                        if(j < k + 1)

                                System.out.print(" ");

                        else {

                                if(ast < pos) {

                                        System.out.print("* ");

                                        ast++;

                                }

                        }

                }

                k++;

                pos = pos - 2;

                ast = 0;

                System.out.println();

        }


        //Reverse logic


        //Resetting necessary variables

        k = 5; pos = 3;
```

```
        for(int i = 0 ; i < 4 ; i++) {

                for(int j = 1 ; j <= 9 ; j++) {

                        if(j < k - 1)

                                System.out.print(" ");

                        else {

                                if(ast < pos) {

                                        System.out.print("* ");

                                        ast++;

                                }

                        }

                }

                k--;

                pos = pos + 2;

                ast = 0;

                System.out.println();

        }

    }

}
```

(8.)

```
/*Java program to draw below Pattern



1

2 3

4 5 6

7 8 9 10

11 12 13 14 15
```

```
*/


//implementing main class

public class _7_8 {


        //implementing the main method

        public static void main(String[] x) {

                //Declaring required variable

                int n = 1;


                //Implementing the program logic

                System.out.println();

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

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

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

                                n++;

                        }

                        System.out.println();

                }

        }

}
```

(9.)

```
/*Java program to draw below Pattern

        *

      *   *

    *       *

  *           *

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

```java
*/

//implementing main class
public class _7_9 {

        //implementing the main method
        public static void main(String[] x) {

                //Declaring required variables
                int k = 5, ast = 0, pos = 1;

                //Implementing the program logic
                System.out.println();
                for(int i = 0 ; i < 4 ; i++) {
                        for(int j = 1 ; j <= 9 ; j++) {
                                if(j < k)
                                        System.out.print(" ");
                                else {
                                        if(ast < pos) {
                                                if(ast == 0 || ast == pos - 1)
                                                        System.out.print("* ");
                                                else
                                                        System.out.print(" ");
                                                ast++;
                                        }
                                }
                        }
                }
```

```
                    k--;

                    pos = pos + 2;

                    ast = 0;

                    System.out.println();

            }

            for(int i = 0 ; i < 9 ; i++)

                    System.out.print("* ");


            System.out.println();

        }

}
```

(10.)

```
/*Java program to draw below Pattern


    *

  *   *

 *       *

 *         *

*            *

 *         *

  *       *

   *   *

    *






*/




//implementing main class

public class _7_10 {
```

```java
//implementing the main method

public static void main(String[] x) {


        //Declaring required variables

        int k = 5, ast = 0, pos = 1;


        //Implementing the program logic

        System.out.println();

        for(int i = 0 ; i < 5 ; i++) {

                for(int j = 1 ; j <= 9 ; j++) {

                        if(j < k)

                                System.out.print(" ");

                        else {

                                if(ast < pos) {

                                        if(ast == 0 || ast == pos - 1)

                                                System.out.print("* ");

                                        else

                                                System.out.print(" ");

                                        ast++;

                                }

                        }

                }

                k--;

                pos = pos + 2;

                ast = 0;

                System.out.println();

        }
```

```java
        //Reverse logic

        //Reseting necessary variables
        k = 0; pos = 7;
        for(int i = 0 ; i < 5 ; i++) {
                for(int j = 1 ; j <= 8 ; j++) {
                        if(j <= k + 1)
                                System.out.print(" ");
                        else {
                                if(ast < pos) {
                                        if(ast == 0 || ast == pos - 1)
                                                System.out.print("* ");
                                        else
                                                System.out.print(" ");
                                        ast++;
                                }
                        }
                }
                k++;
                pos = pos - 2;
                ast = 0;
                System.out.println();
        }
    }
}
```