**Problem.**
Part I (Chapter 4 & 5): Guess a number from 1 to 100
Example of Run-time Output Console
Welcome to the Guess the Number Game
+++++++++++++++++++++++++++++++++++

I'm thinking of a number from 1 to 100.
Try to guess it.

Enter number: 50
You got it in 1 tries.
Great work! You are a mathematical wizard.

Try again? (y/n): y

I'm thinking of a number from 1 to 100.
Try to guess it.

Enter number: 50
Way too high! Guess again.

Enter number: 30
Too high! Guess again.

Enter number: 15
Too low! Guess again.

Enter number: 23
Too high! Guess again.

Enter number: 19
Too low! Guess again.

Enter number: 21
Too high! Guess again.

Enter number: 20
You got it in 7 tries.
Not too bad! You've got some potential.

Try again? (y/n):
Error! This entry is required. Try again.
Try again? (y/n): x
Error! Entry must be 'y' or 'n'. Try again.
Try again? (y/n): n

Bye - Come back soon!

Press any key to continue . . .

Operation
• Write a class called GuessGame with all business logics for guess game, Use the Validator class in

**Solution.**

*Code (GuessGame.java)*

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

public class GuessGame {
    private Scanner myScanner = new Scanner(System.in);

    /**
     * Reads user input.
     *
     * @return user input.
     */
    private int getNumber() {
        int number = 0;
        System.out.print("Enter number: ");


        if (myScanner.hasNextInt()) {
            number = myScanner.nextInt();
        } else {
            while (!myScanner.hasNextInt()) {
                myScanner.next();

                System.out.println("Incorrect input!\n");
                System.out.print("Enter number: ");

                if (myScanner.hasNextInt()) {
                    number = myScanner.nextInt();
                    break;
                }
            }
        }

        return number;
    }

    /**
     * Starts guess game.
     */
    public void startGame() {
        // Random number generating
        Random rand = new Random();
        int numberToGuess = rand.nextInt(100) + 1;

        System.out.println("I'm thinking of a number from 1 to 100.\n" +
                                        "Try to guess it.");

        int enteredNumber = 0;
        int numberOfGuessings = 0;

        // Guess
        while (numberToGuess != enteredNumber) {
            enteredNumber = getNumber();
            numberOfGuessings++;

            if (enteredNumber == numberToGuess) {
                System.out.println("You got it in " +
Integer.toString(numberOfGuessings) + " tries.");
```

```java
                    if (numberOfGuessings == 1) {
                            System.out.println("Great work! You are a mathematical
wizard.\n");
                    } else {
                            System.out.println("Not too bad! You've got some
potential.\n");
                    }
            } else if (enteredNumber > numberToGuess) {
                    System.out.println("Too high! Guess again.\n");
            } else {
                    System.out.println("Too low! Guess again.\n");
            }
        }
    }
}
```

## Code (Main.java)

```java
import java.util.Scanner;

public class Main {
    private static Scanner myScanner = new Scanner(System.in);

    public static void main(String[] args) {
        GuessGame game = new GuessGame();
        String choice = "y";
        while (choice.contentEquals("y")) {
            game.startGame();
            System.out.print("Try again? (y/n): ");
            choice = myScanner.nextLine();

            while (!choice.contentEquals("y") && !choice.contentEquals("n")) {
                System.out.println("Error! This entry is required. Try
again.");

                System.out.print("Try again? (y/n): ");
                choice = myScanner.nextLine();
            }
            System.out.println();
        }
    }
}
```

## Result

```
I'm thinking of a number from 1 to 100.
Try to guess it.
Enter number: 11
Too low! Guess again.

Enter number: 50
Too high! Guess again.

Enter number: 25
Too low! Guess again.

Enter number: 35
Too low! Guess again.

Enter number: 40
Too low! Guess again.

Enter number: 47
You got it in 6 tries.
Not too bad! You've got some potential.
```

```
Try again? (y/n): n
```