

# ENG3051 – Lab Assignment 3

## Mon, Nov 4, 2015

### ***“Guess the Number Game”***

Write a GUI application that plays “guess the number” as follows: your application chooses the number to be guessed by selecting an integer at random in the range 1-1000. The application then displays the following in a label:

I have a number between 1 and 1000. Can you guess my number?  
Please enter your first guess.

A JTextField should be used to input the guess. As each guess is input, the background color should change to either red or blue. Red indicates that the user is getting “warmer”, and blue, “colder”. A JLabel should display either “Too High” or “Too Low” to help the user zero in. When the user gets the correct answer, “Correct!” should be displayed, and the JTextField used for input should be changed to be uneditable. A JButton should be provided to allow the user to play the game again. When the JButton is clicked, a new random number should be generated and the input JTextField changed to be editable. All these components must be arranged around the main container using FlowLayout manager.

### **Problem-Solving Tips**

1. Use methods from the JTextField class to manipulate all JTextField components. For instance, method setText will set the text of the text field, and method setEditable will set whether the text field can be edited or not.
2. Use variables lastDistance and currentDistance to determine the distance of the guess from the actual number. If this distance gets larger between guesses, set the background color of the JFrame to blue. If this distance gets smaller or stays the same, set the background color to red.
3. Use method nextInt from class Random (defined in package java.util) to generate a random number from 1 to 1000. You will need to scale the range of values produced by random by 1000 and shift the range by 1. You can create a Random object as follows:

```
private Random generator = new Random();
```

Then, you need to call the generator’s method nextInt in order to generate a random number between 1 and  $a$  (i.e.  $a$  is the range):

```
int number = generator.nextInt ( a ) + 1;
```

## Sample Output

