

Homework 4 - Loops

This homework will focus on using loops in java. In this assignment you can use both while loops and for loops.

Part 1

In this part you will code a twist on the classic game FizzBuzz. FizzBuzz is a word game used to teach kids about division. The way it works is players sit in a circle and start counting from 1 to 100 but anytime the number is divisible by 3 say Fizz instead, anytime its divisible by 5 say Buzz instead. If it is divisible by both 3 and 5 say FizzBuzz. In our version you will provide input for the max number to count too, and both numbers to replace the 3 and 5 from the original version of fizzbuzz

Sample run

```
Enter n => 10
Enter num1 => 2
Enter num2 => 5
1
Buzz
3
Buzz
Fizz
Buzz
7
Buzz
9
FizzBuzz
```

Part 2

In this part we are going to code a guessing game simulator. In our simulator the computer is going to choose the random number and attempt to guess the answer.

The simulator should run 5 different games. The answer is a random number between 1 and 100. It should keep guessing until it gets it right. In order to ensure the game stops you should narrow the range each time. A simple formula to generate a random number within some range follow this pattern -> $r.nextInt((max - min) + 1) + min$

In order to match submittity it is important that random numbers are generated in the same way. First when you create the Random object it should be as follows where the command line input in the main method is String [] args

```
Random r = new Random(Integer.parseInt(args[0]));
```

When the program finishes it should print out the average number of guess it took to guess it correctly

Sample run - java Part2 72

```
MIN: 1 MAX: 100 Guess: 23 Answer: 100
MIN: 24 MAX: 100 Guess: 63 Answer: 100
MIN: 64 MAX: 100 Guess: 85 Answer: 100
MIN: 86 MAX: 100 Guess: 96 Answer: 100
MIN: 97 MAX: 100 Guess: 99 Answer: 100
MIN: 100 MAX: 100 Guess: 100 Answer: 100
Correct after 6
MIN: 1 MAX: 100 Guess: 29 Answer: 44
MIN: 30 MAX: 100 Guess: 83 Answer: 44
MIN: 30 MAX: 82 Guess: 54 Answer: 44
MIN: 30 MAX: 53 Guess: 38 Answer: 44
MIN: 39 MAX: 53 Guess: 50 Answer: 44
MIN: 39 MAX: 49 Guess: 45 Answer: 44
MIN: 39 MAX: 44 Guess: 43 Answer: 44
MIN: 44 MAX: 44 Guess: 44 Answer: 44
Correct after 8
MIN: 1 MAX: 100 Guess: 64 Answer: 44
MIN: 1 MAX: 63 Guess: 11 Answer: 44
MIN: 12 MAX: 63 Guess: 27 Answer: 44
MIN: 28 MAX: 63 Guess: 49 Answer: 44
MIN: 28 MAX: 48 Guess: 28 Answer: 44
MIN: 29 MAX: 48 Guess: 40 Answer: 44
```

MIN: 41 MAX: 48 Guess: 43 Answer: 44
MIN: 44 MAX: 48 Guess: 45 Answer: 44
MIN: 44 MAX: 44 Guess: 44 Answer: 44
Correct after 9
MIN: 1 MAX: 100 Guess: 46 Answer: 76
MIN: 47 MAX: 100 Guess: 51 Answer: 76
MIN: 52 MAX: 100 Guess: 63 Answer: 76
MIN: 64 MAX: 100 Guess: 71 Answer: 76
MIN: 72 MAX: 100 Guess: 86 Answer: 76
MIN: 72 MAX: 85 Guess: 85 Answer: 76
MIN: 72 MAX: 84 Guess: 84 Answer: 76
MIN: 72 MAX: 83 Guess: 72 Answer: 76
MIN: 73 MAX: 83 Guess: 83 Answer: 76
MIN: 73 MAX: 82 Guess: 75 Answer: 76
MIN: 76 MAX: 82 Guess: 82 Answer: 76
MIN: 76 MAX: 81 Guess: 77 Answer: 76
MIN: 76 MAX: 76 Guess: 76 Answer: 76
Correct after 13
MIN: 1 MAX: 100 Guess: 65 Answer: 31
MIN: 1 MAX: 64 Guess: 25 Answer: 31
MIN: 26 MAX: 64 Guess: 32 Answer: 31
MIN: 26 MAX: 31 Guess: 26 Answer: 31
MIN: 27 MAX: 31 Guess: 27 Answer: 31
MIN: 28 MAX: 31 Guess: 30 Answer: 31
MIN: 31 MAX: 31 Guess: 31 Answer: 31
Correct after 7
Stats
Game 1: Attempts until correct = 6
Game 2: Attempts until correct = 8
Game 3: Attempts until correct = 9
Game 4: Attempts until correct = 13
Game 5: Attempts until correct = 7
On Average completed in 8.6