**PRT452 Assignment 1**

**Solution:**

Program for guessing random number is solved by using test driven development. To solve this problem, I have written test cases. Program is written in Java programming language. Before writing coding, I have checked input, range of numbers and created a test case for it.

Unit testing is done for input values, checking the upper and lower range for guessing number and displaying a message.

**First test case generated:**

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In this testcase I created simple method which is implemented and failed as no values are initialised so it failed.

As I wrote test cases after that they all failed and then started writing program code for it. I used the java library to guess generate random number from 1 to 100.

**Program code:**

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This is source code for guess the random number, where I used the while loop and in it I used the various if statements for user input validation.

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To quit the program letter “q” is checked using if statement for valid user input.

**Output of Program:**

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User guessing the random number and it is successful.

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This screenshot above shows the output of user quitting the program by using the letter q.

**Test case successful:**

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Once I finish with main program then started to validate above test case, I have done validation of upper and lower range for input values. Test case check the value of guessing number by user input and displays a message to input values in the range from 1 to 100.

**Refactor code:**

As program and test case were running successful for validation, and then ensure they run and then I did refactor of code. To structure the program effectively and minimizes if statements which is irritating so to modify and extract method from it.

**Refactor code before:**

If statements which are difficult to understand and long lines of code.

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**Refactor code after:**

I have decompose the code with use of Extract method that replaces the query with vairables initialized for user input.

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**Refactor to extract variable before:**

String is initialised for user input when guessing the random number.

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**Refactor to extract variable after:**

Refactoring of the string is done.

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**GitHub repository**

<https://github.com/dpitroda/Assisgnment-PRT452>