# **Pre-Lab Write Up**

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Lab: Guessing Game

1. Describe in English what this program is supposed to do (not how it does it). **This should be able to be your class comment at the top of your program** **(you may copy and paste this into your program later)**:

This program is supposed to explain the tenants of a number guessing game to the user, ask the user if they would like to play the number guessing game, and then launch into the game based on their response(yes or no). After each game it will ask if they would like to play again, if yes it will launch into another game, and if no it will tally total games, total guesses, average guesses, and best game.

1. List the separate tasks needed to accomplish what you described in part 1. These should be the individual methods you are going to have in your program (**both public and private methods**):

**Method 1 Name:** main

**Method 2 Name:** instructions

**Method 3 Name:** playGame

**Method 4 Name:** results

List other methods below:

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1. For each of the tasks/methods in part 2, describe in English what they are supposed to do (not how they do it). Additionally, note any information each of the tasks need to accomplish their goal as well as any information they need to give back. **These should be able to be used as your method comments in your program** **(you may copy and paste this into your program later)**:

Method Name: main

Method Description:

Method main executes the program. It needs to know whether or not the user would like to play (again), how many games the user has played, how many guesses in total the user has taken, and what the lowest number of guesses were in one single game.

Parameters (for each: type and what it represents): This method takes no parameters

Returns (type and what it represents): no returns

Exceptions (type and when thrown): no exceptions

Method Name: instructions

Method Description:

This method is simple. It only prints instructions.

Parameters (for each: type and what it represents): There are no parameters

Returns (type and what it represents): There are no returns

Exceptions (type and when thrown): There are no exceptions

Method Name: playGame

Method Description:

This method controls the logic of the game. It is supposed to set an upper bound, generate a number that does not exceed this, record each guess, compare it to the randomly generated number, inform the player when they have guessed correctly or incorrectly, and tally all guesses for each game.

Parameters (for each: type and what it represents): This method takes no parameters

Returns (type and what it represents): This method returns an int, guesses (total guesses in game).

Exceptions (type and when thrown): No exceptions

Method Name: results

Method Description:

This method is supposed to calculate total games played, total guesses for all games, average guesses per game, and best game. It needs to know game count, total guesses, and the lowest guesses in one game.

Parameters (for each: type and what it represents): This method takes 3 int parameters (guesses, game count, and lowest guess).

Returns (type and what it represents): no returns

Exceptions (type and when thrown): no exceptions

Continue below with the rest of the tasks/methods you listed from part 2:

1. For each of the tasks in part 3, give a brief description in English of how you plan to accomplish the task. You may either describe it thoroughly in English, use pseudo-code, or use a combination of the 2:

**Main:** I will use a scanner to capture the users answer when they are asked if they would like to play. I will store this in a string using input.next(). I will use a while loop that executes while their answer is yes, and in this while loop I will keep track of total guesses, total games, and lowest guess. Once they answer no, I will tally all results.

**Instructions:** I will use consecutive println statements to print the instructions.

**PlayGame:** I will set a final int equal to the upper bounds of the numbers in the game, generate a random number between 1 and the upper bounds, and use a do/while loop with an if/else if loop to ask the user to enter a number, compare that number to that generated, and tell them the number is high or low until they guess the correct answer.

**results:** I will pull in total guesses, gamecount, and lowest guess from main, and use these to tally total games, total guesses, average guesses, and best game (lowest guesses in one game).

1. What questions do you still have about this lab after reading through the specification and completing the pre-lab?