**Guess the Number**

**Project Description & Goal**

The goal of this project is to develop an application that will prompt the user to guess a number between 0 and 1000. After the user’s input, the application will tell the user if they are too high or too low and prompt them for another guess. Once the user guesses the correct answer, the application will tell the user how many guesses it took them to find it.

Optional: Switch roles, have the user input a number between 0-1000 and have the computer guess. The user will respond to the computer with “smaller”, “larger”, or “correct”.

**Project Learning Objectives**

* Understand the random number generator and how it isn’t truly random.
* Understand Big-O and why the solution to this puzzle is O(logn).

**Project Demonstrated Competencies**

1. Student understands why there is an optimal answer, in terms of # of guesses.
2. Application interface is clear and easy to use.
3. Optionally, the computer can be prompted to guess user input. It will use the O(logn) algorithm to guess based on the users response.

**Rubric**

|  |  |  |
| --- | --- | --- |
|  | **Description of perfect implementation** | **Score** |
| Competency #1 | User will provide with the solution, a document (.docx, .doc, .txt) that contains a paragraph explaining, in your words, why the randomly selected number can be found so quickly. | \_\_\_  50 |
| Competency #2 | Application asks for users input, accepts it, and continues until the user finds the right answer. | \_\_\_  50 |
| Competency #3 | The user can switch roles and have the computer guess what the user input. | \_\_\_  +10 |