

Computer Science 2310 Homework 2

Write a Java program complete with full documentation to play the game, "GUESS THE NUMBER", with a human user. Your program must randomly select a target integer from 1 to 64, and it is up to the program user to guess the correct number. After each guess, the program must tell the user if the guess is too high, too low, or correct. A sample interaction would be the following (suppose the random target number selected was 40). The user input will be underlined.

Welcome to the GUESS THE NUMBER program.

Make a guess (from 1 to 64) and press RETURN

32

Your guess of 32 is too low.

Make a guess (from 1 to 64) and press RETURN

48

Your guess of 48 is too high.

Make a guess (from 1 to 64) and press RETURN

40

40 is CORRECT!!

In order to obtain the random number to be guessed, download *GuessNum.java* from the CSCI 2310 web page. This contains the definition of a code segment that will provide you with a random number to guess. It defines a variable named *target* that will contain the number to guess.

Note that as part of the execution of this code it will prompt you with the statement "Enter integer seed from 1 to 100000". The purpose of this is to initialize the random number generator. This will not be the actual random number generated. What you are able to rely on is that every time you execute the program and input a particular number as the integer seed, the random number generated will always be the same.

- **ERROR HANDLING:** This program should do the following type of error handling:

The program normally terminates when the person makes a correct guess. However, we do not wish to waste computing resources on a user who is not guessing intelligently. Define a constant `MAXGUESSES` and set it to 8. See page 57 of your text for information about defining constants. Whenever the number of guesses that a user makes will exceed `MAXGUESSES` without having given a correct guess, the program should issue an appropriate message saying that the user has exceeded the maximum number of guesses, and terminate the program.

- Tips on program development. Develop a simple program that can use the provided code to determine the random number to be guessed. Add some code to print out the number and also add your initial logic for the input of a guess and properly analyzing it (without the loop). Then modify the program so that you can play the game in its basic form (i.e., the user keeps guessing until correct). You should try to complete this by next Thursday. Finally, add the error handling.
- Your program will be evaluated on the basis of its correctness, the neatness and informativeness of its output and messages (remember the possible error message), and your adherence to the programming standards of this class.
- Submission information: Name your file `GuessNum.java` and place in a separate subdirectory with a name of your choice. Use the command `submit h2 GuessNum.java` to electronically submit your assignment.
- This problem is worth 75 points. **A program that does not compile will receive zero points. Do not delay in starting on this program.**

DUE DATE: October 27 at the start of class.