

CS104
Fall 2011

Assignment #2
Due 9/21 11:59pm

Honor Statement

The work that you submit must be your own. You should not receive detailed help from any other student regarding this assignment, and you should not offer your solution to another student. Nor should you go out to a newsgroup and ask for help from the global community. You should not ask questions about the assignment to other students – all questions should be addressed to the instructors for clarification purposes. We are more than happy to answer any question, and please feel free to email your questions (to both Dr. Gray and Amber) or come see either Dr. Gray or Amber.

How to Submit

You must submit a SINGLE zip file on elearning. This filename should be named by your last name (e.g., LASTNAME.zip). This zip file must contain three other files (p1.doc, p2.ypr and p3.ypr) that represent your solution files, as stated in the problem descriptions below.

Questions

1. Write the pseudocode or flowchart to create a square root calculator. This code should ask the user for a value, square the given value, and print the squared value. The program should repeat until the user enters zero when asked for a value. Your answer will be the pseudocode typed in a Word or notepad (or comparable) document; OR a flowchart created in Word, Powerpoint, or Publisher (or comparable application).
2. In BYOB Scratch, using the Pen color and Pen size, write the code to draw something creative. The picture must be drawn using CODE and not using the drawing tool for the background. Your answer will be the Scratch program (to save the program, click File > Save As – this is the file needed to submit). Hint: Broadcasts will allow you to separate the creation of the different parts of your image. To use a broadcast, you will use the “when I receive _____” control command.

3. In BYOB Scratch, create a number guessing game. The program will pick a random number and ask the user for a guess until the guess matches the random number. When the guess is correct, your program should inform the user they guessed the correct number. Moreover, your program should meet the following six challenges:
 - a. Whatever sprite character is hosting your number guessing game should welcome the player and ask the player for their name.
 - b. If the player guesses incorrectly, the host should use the player's name when stating the guess is incorrect: "Sorry PLAYER'S NAME, that is not the correct answer."
 - c. If the player guesses incorrectly, the host should tell the player whether the correct number is higher or lower than the guess.
 - d. Ask the player for the maximum number from which the player wishes to play. For example, instead of picking a random number from 1 to 10, ask the player what the maximum should be, and then pick a random number between 1 and what the player requested as the maximum.
 - e. Keep a tally of the number of guesses it takes the player to guess the correct number.
 - f. When the player guesses the correct number, using the player's name, tell them congratulations and the number of guesses it took them.

You are free to add additional challenges, and you are free to add any spin you wish, but these basic requirements must be met. The answer for this program is your Scratch code.