1 Objectives

1. Practice using standard input
2. Practice random number generation
3. Practice using loops and comparison

2 Background

How many times do you have to roll a pair of dice before they come up snake eyes? You could do the experiment by rolling the dice by hand. The main idea is to maintain two different variables to represent die rolls, which we can re-assign values every time the user needs to re-roll.

3 Tasks

1. **Before you begin coding**: Draw by hand or with digital tools a flowchart for how you want your program to behave. Make sure you clearly label your conditionals, and add a description to each non-conditional block of code to say what will happen there.

2. Write a computer program that simulates rolling two dice and report the number of rolls that it makes before a pair of dice come up “snake eyes” (both roll a one).
   (a) Use the java `Math.random()` function to generate a random number between 0 and 1 and then use that to (fairly) determine what number comes up on that die.
   (b) Consider how to structure the main loop of the code: how will it look to check for a snake eyes?
   (c) Make sure you re-roll the dice every time the loop runs, so that the program doesn’t run forever!

3. In addition, report a message whenever the simulated dice roll is “boxcars” (both roll sixes) or “Yo-leven” (one five and one six)

4. What if you wanted the user to be able to choose how many dice were used in the experiment? How might your program have to be changed?

5. What if you wanted to change the number of sides on the dice? How about rolling 8- or 10-sided dice? How much the code change to simulate this?
4 Turn In

1. Upload each “.java” file to the Canvas assignment for Lab 2

2. Submit a clear photo or scan of any hand-written work.