

# Exercises

## 1. Rounding Random Numbers

random() The random() method returns a random double that is greater than or equal to 0.0 and less than 1.0.

In this exercise we will round a series of random numbers.

The program will generate ten random numbers from 0 through 100. Round each one of them, then print the results to the screen. Try to do this with as little code as possible.

1. Create a class and a main() method to perform the calculations.
2. Use a for loop to go through ten iterations.
3. Each iteration should generate a random number using Math.random(). To get a number from 0 through 100 simply multiply the random number by 100. Print this number to the screen. Without rounding it, though, you can't ever get to 100 (the random() method always returns something less than 1.0).
4. Round the number using the Math.round() method. Print the rounded number to the screen.
  - As a bonus, note whether the numbers look random. Is there an equal number of even and odd numbers?
  - Are they grouped more towards the top half of 100 or the bottom half?
  - What happens to the distribution as you generate more random numbers?

## 2. Scanner Input class:

A. Build a program which will ask the user about the capital cities of: Austria, Germany, Rumania, Estonia, Moldavia and Ukraine. After each answer the program will give a message to the user:

- In case the user is correct: "You are correct!"
- In case the user is not correct: "You are not correct! The capital city of *country* is *capital city* "

B. Transform the above program on a GUI interface using the Swing class.

