

### Homework #3

**Course:** COP 3223C

**Semester:** Fall 2016

**Due Date:** October 12, 2016

**Credit Value:** 5% of final grade

#### Embedded Loops

The objective of this assignment is to give the student more practice in using loops, especially embedding one loop inside the other. These are called “nested loops”. The assignment also provides the opportunity to work with random number generators.

The assignment is composed of two parts for the benefit of student comprehension. However, the program submitted by the student should be the second one - and **only** the second one! The two parts are:

- a) Write a program in C that determines how many calls to a random number generator it takes to match a number between 0 and 99 that is entered by a user. Use a **seeded** random number generation function; otherwise all iterations of the outer loop will be the same.
- b) Now embed the above program in a second loop that makes this computation 50 times and prints out the average number of times the above program took to match the number entered.

#### **Musts:**

- 1) You **must** use at least two nested (embedded) loops.
- 2) You **must** use a seeded random number generator.
- 3) The output average of times the inner loop ran **must** be a floating point number.
- 4) Lastly (and obviously!), your program **must** be written in C and **must** compile and execute correctly from Code::Blocks

#### **Submission instructions:**

Same as for HW #1 and #2: Submit your program source code as a .c file through the Webcourses homework submission page. Please name the file as HW3 - <first initial> <last name>. Please put your full name as the first comment line at the top of the source code.