

McGill University  
School of Computer Science

## COMP-206

### Mini Assignment #3

Due: February 12, 2019 on myCourses at 23:30

#### C language programming

According to [Wikipedia](https://en.wikipedia.org/wiki/Anagram), an anagram is a word or phrase formed by rearranging the letters of a different word or phrase, typically using all the original letters exactly once. For example, the word anagram can be rearranged into nag a ram, or the word binary into brainy.

Create a C code program called **anagram.c** that implements the anagram check. The program should require the user to input 2 words then returns code 0 if the words are anagrams, code 1 otherwise (please note that 0 or 1 should be returned as an integer number of type int).

Compile your C code with gcc and make sure that the executable generated by the compiler is called **anagram**.

Create also a BASH shell script called **anagram\_test.sh** that will be used to automate the process of testing the executable created by compiling your C code.

This bash script will be used at the command-line as follows:

**./anagram\_test.sh**

The script will do the following in this order without prompting the user to input anything:

- Clear the screen
- Next, calls **anagram** by sending it the following 2 words: **listen** and **silent**.
- Checks the exit code of the anagram program. If it is **zero**, print to the screen: test succeeded. If not, print to the screen: test failed.
- Next, calls **anagram** by sending it the following 2 words: **listen** and **silence**.
- Checks the exit code of the anagram program. If it is **one**, print to the screen: test succeeded. If not, print to the screen: test failed.
- Finally the script terminates by displaying to the screen: "Execution of anagram program has ended successfully!"

## WHAT TO HAND IN

Everything must be submitted to My Courses before the due date. Remember that you can hand in your assignment up to two days late but there will be a penalty of 5% each day. After that, your assignment will not be accepted. Please hand in the following:

- A single Bash script called **anagram\_test.sh**
- A single C code file called **anagram.c**

## HOW IT WILL BE GRADED

The assignment is worth a total of 20 points.

- 12 points - Anagram C program implementation as follow:
  - 2 points for getting the 2 words as inputs
  - 2 points for returning the proper exit codes
  - 8 points for the anagram algorithm
- 8 points for the BASH script as follow:
  - 4 points - providing the words to the executable through the bash script
  - 2 points - checking the exit code result
  - 2 points - displaying the proper messages to the screen

## GRADING RULES

The following rules are followed by the TA when grading assignments:

- A program must run in order to get a grade (even if it does not run well). If it does not run (does not compile) it will receive a zero. (Make sure to run your programs from Trottier – they sometimes do not run the same from home when logging in using putty.)
- The TA will grade using the mimi.cs.mcgill.ca server.
- All questions are graded proportionally (assuming the program runs at all). This means that if 40% of the question is correct, you will receive 40% of the grade.
- The TA will compile the c code then runs the submitted script and observe the execution.
- The TA may modify the script to provide other words for checking.
- The TA will finally check whether the script displays the messages properly depending on the anagram check result.