

# CSCA20 Lab 3

## 1 Objectives

- Practice using `help` and `dir`.
- Practice writing boolean expressions and conditional statements.
- Write functions involving type `str`.

## 2 Driver and navigator

As always, this lab requires you and your partner to take on distinct roles.

**driver:** The person typing at the keyboard.

**navigator:** The person watching for mistakes, and thinking ahead.

The rest of these instructions call you `s1` and `s2`. Pick which one is which. `s1` should log in, start up Wing, and be the first driver.

## 3 Getting Help

Explore the `str` module using `dir` and `help`, as well as the online Python documentation: <https://docs.python.org/3/>

Complete the tasks below using functions from Python's `str` methods in the shell.

1. Calculate the length of the string `'supercalifragilisticexpialladicious'`.
2. Find the number of occurrences of the letter `'a'` in `'banana'`.
3. Convert `'welcome to csc20'` to upper case..
4. What does `'welcome to csc20' .rstrip()` do?
5. What does `'123'.isdigit()` return?
6. How do you exchange all occurrences of `'Anna'` with `'Any'` in `"Anna teaches CSCA20 and Anna also teaches CSCA67 but Anna doesn't teach CSCA08."`

## 4 Boolean expressions and conditionals

This section asks you to write the code for the functions specified below. There are some important aspects to these exercises:

- For each of these functions, you will need to complete the full docstring first, including the `doctest` examples! Run the `doctests` for each function, once you've implemented it. Recall to do so you need to `import doctest` at the top of your file. Then at the bottom after `if __name__ == '__main__':` you need to type `doctest.testmod(verbose=True)`.
- Make sure you spend some time studying the methods defined for strings in Python, as well as other built-ins, to use in the functions below.

The functions:

- `is_long(str)`: Given a string, if the length of the string is bigger than 10, return the string `'very long'`. Otherwise, return the string `'kinda short'`.
- `longer(str, str)`: Given two strings, return the length of the longer string.
- `earlier(str, str)`: Given two strings made up of lowercase letters, return the string that would appear earlier in the dictionary.
- `where(str, str)`: Given a string and a single-character string, return the index of the *first* occurrence of the second string in the first. For example, `where("abc", "b")` should return 1. If the second string is not in the first, return -1.
- `is_vowel(str)`: Given a one-character string, return `True` if it is a vowel, and return `False` otherwise.

Submit your functions in a file called `lab3.py` for assignment Lab 3. If you are unable to complete all the functions during lab time you may do so at home and then submit your lab before Friday at 11.59pm.