Carleton University
Department of Systems and Computer Engineering
ECOR 1051 - Fundamentals of Engineering I

Lab 1 - Using Software Experiments to Learn about Python's Datatypes

Objectives

- To learn how to use the Python shell to perform software experiments.
- To learn more about the Python datatype that represent integers.

Part A Overview

You will use the **Python shell** to explore how Python supports calculations with integers and real numbers. Our approach will use *directed experimentation*; that is, experimentation to learn something that was not known before.

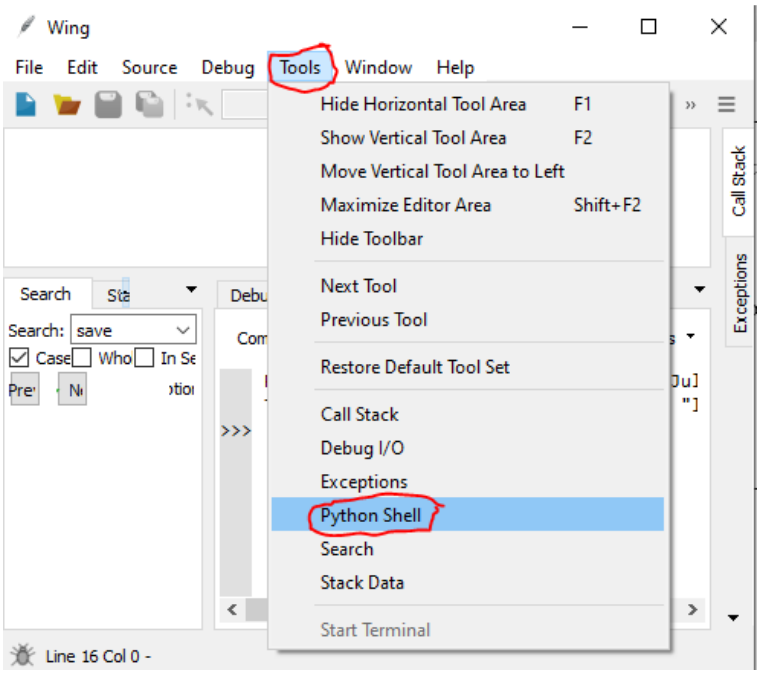
For some exercises, you will be asked to type expressions in the Python shell window, record the results displayed by Python, and then draw conclusions.

For other exercises, you will be asked to devise one or more short experiments. You will record your experiments (i.e., write the Python expressions that you typed and the results displayed by Python), then write one or two sentences that summarize what you learned.

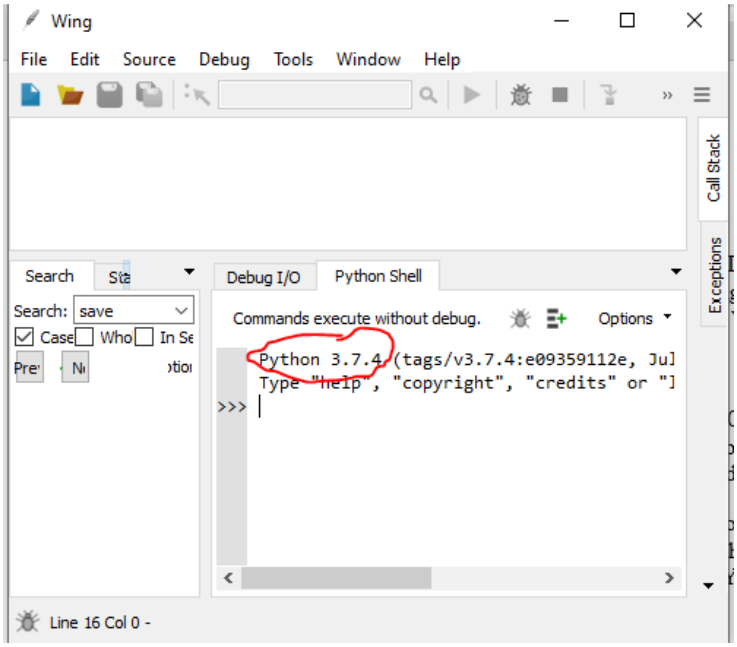
Learning outcomes: 1; Graduate attributes: 1.3, 5.3 (see the course outline)

Getting Started

Launch Wing 101. One of the tabbed windows is titled Python Shell. *(see next page)*



When Python starts, it prints a message in this window. The first line should contain the version number (Example: "3.7.4" indicates that Wing is running Python version 3.7). If your version is running less than 3.7, ask the TA for help to reconfigure Wing.



Download **`lab1.txt`** from CULearn and open it in Notepad (or any text editor on MACs). The file is a template in which you will type your solutions to the exercises. Don't change the formatting; for example, don't add boldface or italicized text. You will be creating a solution as simple plain text.

Follow along the exercises listed in `lab1.txt`, typing your solutions where indicated. Just in case you are confused as to what to do, the first exercise is described in detail below.

Exercise 1: The shell displays a **prompt** (`>>>`) when it is ready for you to type a command. After the prompt, type this *expression* (don't type any spaces between the numbers and the plus sign):

```
>>> 1+2
```

The integers 1 and 2 are the expression's *operands* and the `+` is the *addition operator*.

Now press the `Enter` key. This "tells" Python to *read* this expression, verify that it is syntactically correct, then *evaluate* the expression (perform the addition operation on the two operands) and *print* (display) the result in the shell window.

Write the value that is displayed as the result in **`lab1.txt`**.

Continue on with the remaining exercises in **`lab1.txt`** in the same fashion.

Wrap Up

Submit file lab1.txt.

You are required to keep a backup copy of (all) your work for the duration of the term.

Edited: April 23, 2020