

Activity 1.1 – Get Started with Python

1. Install Python

Visit the class web site <http://softdes.olin.build>. (Bookmark this while you're there.)

Find the “Set Up” page.

Follow the instructions under “Step 1: Install Python”.

2. Open a Terminal Window

In this course you will make use of the **Terminal** program in Linux or macOS, or **Command Prompt** in Windows:

Linux: Press `cmd+alt+T`, or launch the Terminal from your Programs menu.

macOS: Open the Terminal application, in the Applications folder.

Windows: Open the Anaconda Command Prompt. If this is unfamiliar to you, ask a classmate or NINJA, or search the web for “windows 10 command prompt” – but open “Anaconda Command Prompt” instead of “Command Prompt”.

Launching Terminal or (Anaconda) Command Prompt is called “creating a terminal session”.

Typing into a terminal session is called “in a terminal session”, “in a terminal”, or “in the shell”

Typing some text – such as `ls` (Linux or macOS) or `dir` (Windows) – and then pressing the Enter or Return key, is called “entering *command*” or “running *command*”, where *command* is the entered text.

3. Explore Python

Enter `python`. This starts the **python interpreter**.

You should see something like this:

```
Python 3.6.2 (default, Jul 17 2017, 16:44:45)
[GCC 4.2.1 Compatible Apple LLVM 8.1.0 (clang-802.0.42)] on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

Details such as the date, and the material inside brackets [...] will differ. The first line should say `Python 3.5.x` or `3.6.x`, where `x` is some digit. If it says `Python 2.x.y` check in with a NINJA.

The chevron's `>>>` are Python's **prompt**. Python is waiting for you to type something. Type `42` and press Enter. You should see something like:

```
>>> 42
42
```

Now type `40 + 2`:

```
>>> 40 + 2
42
```

Try out using Python as a calculator:

- How many minutes are in a day?
- How many seconds are in a day?
- How many seconds are in a year?

- About how many minutes is 1000 seconds?
- How many minutes old are you?

3. Investigation

Do this in groups of two.

- Do parentheses () and brackets [] work the same way as in math notation?
- Does an expression need to be on one line? Does it matter whether it includes parentheses?
- Are spaces (“whitespace”) significant? Is there difference between `40+2`, `40 + 2`, and `40 +2` (where the long space is a tab)?
- What happens if you type something non-sensical, such as `40 + + 2`?
- Skim this page on **PEMDAS**. Use the interpreter to investigate whether Python follows PEMDAS. (Python uses `**` for exponentiation, e.g. 5^2 is written `5 ** 2`.)

4. Quitting Python

To quit Python, enter `quit()` or press control+d (hold the control key; press the d key; and then release them in either order).

Going Beyond

We will get to these topics later in the course. You can try these now if you finish early.

Here’s some other things you can try:

- **Strings** begin and end with ' or ": `'hello'`, or `"hello"`. Try entering a string at the Python prompt.
- What operations can you do with strings? Can you add, subtract, or multiply them? With strings and numbers?
- Use the web to find out whether you can enter complex numbers into Python.
- How many numbers can you make with the digits 0 through 9 (at most once each), and the arithmetic operators?