

# Problem Set 0

This problem set will introduce you to the programming environment Spyder from the Anaconda Distribution of Python, and to programming in Python, as well as to our general problem set structure. In this problem set, you will confirm your installation of Python, write a simple Python program, and hand it in. ***Be sure to read this problem set thoroughly, especially the Collaboration and Hand-in Procedure sections.***

## Collaboration

You may work with other students. However, each student should write up and hand in his or her assignment separately. *Be sure to indicate with whom you have worked in the comments of your submission.*

## Installing Python and Spyder

Follow the steps in the *Getting Started* handout for installing the Anaconda distribution of Python and Spyder onto the machine you plan to be using this term. The numpy and matplotlib packages, which will be used primarily in 6.0002, should come with the installation.

Familiarize yourself with Python and Spyder using the exercises given in the handout.

Once you are ready, proceed to the programming part of this assignment.

Note, when you first start using your system, make sure that the version number displayed is 3.0 or higher. This version of Python is not backwards compatible with versions starting with 2.x.

**This class uses Python version 3.0 or higher.**

## A Very Simple Program: Raising a number to a power and taking a logarithm

The goal of this programming exercise is to make sure your python and numpy installations are correct, to get you more comfortable with using Spyder, and to begin using simple elements of Python. Standard elements of a program include the ability to print out results (using the `print` operation), the ability to read input from a user at the console (for example using the `input` function), and the ability to store values in a variable, so that the program can access that value as needed.

# Assignment:

Write a program that does the following in order:

1. At the top of your file and type `import numpy`
2. Now write a line that sets a variable named `x` to 5.
3. Now write a line that sets a variable named `y` to 8.
4. Add variables `x` and `y`, and save the result to a variable named `z`.
5. Now save the result of this command, `numpy.log2(z)`, to a variable named `a`.

Use Spyder to create your program, and save your code in a file named 'ps0.py'.

## Hints:

- Remember that if you want to hold onto a value, you need to store it in a *variable* (i.e., give it a name to which you can refer when you want that value). You may find it convenient to look at the [variables and strings](#) section of the Python Wikibook.

## Hand-In Procedure

### 1. Save

Save your code in `ps0.py`. *Do not ignore this step or save your file(s) with different names.*

### 2. Submission Info

At the start of each file, in a comment, write down the number of hours (roughly) you spent on the problems in that part, and the names of the people you collaborated with.

For example, the beginning of your file should look like this:

```
# Problem Set 0
# Name: Jane Lee
# Collaborators: John Doe
# Time Spent: 3:30
... your code goes here ...
```

### 3. Submit

To submit a file, upload it on the Problem Set link on our website. If there is some error uploading, post on Piazza.