Getting Started: Python and IDLE

Introduction

This recitation will cover how to set up Python and introduce you to IDLE, the Python development environment we will be using throughout this course.

Setting up Python On Athena / Linux

Python should be set up correctly on the Linux athena machines. Type 'idle' at the command prompt to ensure that everything is working correctly. This should start up the Python development environment IDLE.

On your own machine

If you are working on your own machine, you will probably need to install Python. We will be using the standard Python software, available here. You should download and install version 2.7.11.

Windows:

Download and install: Windows Installer

Mac OS X:

Download and install: Mac OS X Installer.

Using IDLE

IDLE is the standard Python development environment Its name is an acronym of "**I**ntegrated **D**eve**L**opment **E**nvironment". It works well on both Unix and Windows platforms.

It has a Python shell window, which gives you access to the Python interactive mode. It also has a file editor that lets you create and edit existing Python source files.

During the following discussion of IDLE's features, instead of passively reading along, you should start IDLE and try to replicate the screenshots.

Interactive Python shell

When you start up IDLE, a window with an interactive Python shell will pop up:

You can type Python code directly into this shell, at the '>>>' prompt. Whenever you enter a complete code fragment, it will be executed. For instance, typing:

```
>>> print "hello world"
```

and pressing ENTER, will cause the following to be displayed:

```
hello world
```

IDLE can also be used as a calculator:

```
>>> 4+4
8
```

Addition, subtraction, multiplication operators are built into the Python language. This means you can use them right away. If you want to use a square root in your calculation you need to *import* the *math* module. Do not worry about what it means right now, we will cover this later during the course. Below is an example of square root calculation:

```
>>> import math
>>> math.sqrt(16)
4.0
```

Math module allows you to do a number of useful operations:

```
>>> import math
>>> math.pow(3, 2)
9.0
>>> math.cos( 0 )
1.0
```

Note that you only need to execute the import command once after you start IDLE.

Exercise

(this is just for practice, solutions will not be graded or collected in class)

Use IDLE to calculate:

1. 23.0 to the 5th power
2. Positive root of the following equation:

   34*x^2 + 68*x − 510

   Recall:

   a*x^2 + b*x + c

   x1 = (- b + sqrt (b*b - 4*a*c)) / (2*a)

The tutorial for IDLE is based on the official IDLE tutorial by Daryl Harms