Basic Data Types in Python

A piece of data is a value. Every value in python has a type (or a class). You can use the type() command to show the type of a value in python.

- **int** (i.e. integer)
    - a number without any decimal point
    - enter: type (1)

- **float** (i.e. a floating point number)
    - it has a decimal
    - enter: type (2.3)

- **bool** (i.e. a boolean value, can be either True or False)
    - example: 1==2 (This is saying if 1 equals 2)
    - enter: type(1==2) (You should get 'bool')

- **string** [a sequence of symbols (numbers, letters, punctuation) bracketed by quotation marks]
    - you can use single or double quotes or triple quotes
    - example: "hello"

- **list** - a list contains a series of elements, each of which can be any data type, enclosed in brackets and separated by commas
    - example [1,2.3,"hello"]

-**dir** - directory

-**pos** - position

Variable - a name that refers to a value

- all programming languages have some way to implement variables
- variables are assigned a value using an assignment operator
- in Python, and most programming languages, variable names must begin with a letter, but can also consist of letters and numbers after the first letter

Assignment

- in python the equal sign, = , is the assignment operator
- the equal sign does not mean 'equal', rather it is a command to assign a value to a variable. (use two equal signs ==, to check equality, be careful not to confuse assignment with checking equality)

Operators

An operator is a pre-defined symbol that tells the interpreter to do a specific operation. They are the building blocks of most expressions and statements.
Arithmetic operators, e.g.

- + (addition)
- * (multiplication)
- - (subtraction)
- / (division)
- ** (exponent)

The assignment operators: e.g. '

- = (assignment of a variable)
- += (increment)

Comparison operators: e.g.

- == (if equal to)
- > (if greater than)
- >= (if greater than and equal to)
- < (if less than)
- <= (if less than and equal to)
- != (if not equal to)