Jupyter Notebooks

* notebooks.azure.com or
* "pip install --user jupyter" (to install locally)
* use the custom command prompt we made
* navigate to folder where your files are
* "jupyter notebook" (to run)

Python Basics

* print - basic output command
* input - basic input command

# Variables

* a memory location that is given a name

to hold a particular bit of data - names can't begin with #, @, $, !,

* names can't have spaces
* keep variables names short and concise
* names are in the format: first\_name
* letter case is important
* must give the variable a value before you can use it. (e.g. name = "john")

# String Concatenation

variable + variable : only works if both are strings

variable , variable : only works in "print" and adds an extra space

string.format(variable, variable) :

"string" is specially formatted string that holds "{}" markers

string % variable, variable : old Python 2 method

f"{variable}{variable}" : new Python 3 method

print( "text" \* 3 ) : repeats the "text"

## Comments

* '#' starts a comment
* can consist of any normal text
* 'rule of thumb' - a comment every 3-5 lines - short comments can go either at the end of a line or on its own line
* long comments must go on their own line
* try and keep entire line less than 80 chars

# Math (in Python)

+, -, \* : addition, subtraction, multiplication

* e.g. 1 + 2, 3 \* 5, 2 - 1, 1 \* -5, -3 - 6 /, //, % : division

"/" : decimal division

"//" : integer division (use only with integers)

"%" : remainder (modulo division) \*\* : exponents

* e.g. 3 \*\* 2 = 9

# BEDMAS

B - Brackets

E - Exponents

D - Division

M - Multiplication

A - Addition

S - Subtraction

e.g. 1 + ( 2 - 3 ) \* 4 + 6 / 7 + (5 \* 2) = 7.85? 1 + ( 2 - 3 ) \* 4 + 6 / 7 + (5 \* 2)

1 + (-1) \* 4 + 6 / 7 + (10)

1 + (-1) \* 4 + .857142857 + 10

1 + (-4) + .857142857 + 10

7.857142857

import math b = 3 `

c = 4 a = math.sqrt(b \*\* 2 + c \*\* 2)

# Data Type Conversions

int() - converts from string to integer float() - converts from string to decimal str() - converts from a number to a string

Print / String (revisited)

* printing on multiple lines
* using multiple print statements print("Hello") print("World")
* using a single print statement print("Hello\nWorld")
* using multiple print statements on the same line print("Hello", end='') # end has 2 single quotes print("World")