## Week 1

Intro to Python

### What is Python?

Python is an open-source programming language used in many areas by a number of companies. It is considered to use fewer lines to code to express the same concept than other programming languages and its availability to the public has given rise to various tools like libraries.

# https://www.python.org/downloads/ Or Look up "download python"

#### Chapter 1

Today we will talk about:

Print statements

Special characters

**Programming Errors** 

Basic mathematical operations

#### Syntax Errors

Python follows certain syntax rules which will result in an error when they aren't followed.

Easy to detect because Python tells you in the error statement.

They result from errors in code construction, such as mistyping a statement, incorrect *indentation*, omitting punctuation, or not closing parentheses.

#### Runtime Errors

They cause the program to terminate abnormally. They occur while a program is running if the Python interpreter can't carry out an operation.

Input mistakes typically cause runtime errors.

A common input mistake is when Python expects a number but receives a string.

Ex. "
$$3$$
" +  $2$ 

### Logic Errors

These occur when a program does not perform the way it was intended to. Errors of this kind occur for many different reasons and are usually caused by what Python reads, not what the coder meant to write.

#### Example:

Take the average of three numbers (2, 7, 6). If we simply do:

We will get 11. We meant to take the average of the three, but Python interprets it differently. The correct way would be:

$$(2+7+6)/3$$

Which will output 5.

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