Python

* Python is interpreted high level dynamic programming language.
  + Interpreted
    - Python is executed line by line. It does NOT compile like a language like C or C# or Java
    - Tend to be slower than compiled languages.
    - A compiler could check for errors before you run the program or create optimizations.
      * Python cannot do this.
  + High Level
    - Easy to use as possible.
    - Automatic memory management and garbage collection.
    - Tries to minimize the ability for the developer to access memory directly or manipulate objects via pointers.
    - Any language designed to allow developers to develop as fast possible.
      * That is the top goal.
  + Dynamic
    - The language does NOT require you to declare the data type or class of any variable you use.
      * Double edged sword.
        + It can make your code look very clean and easy to write.
        + It can really hurt you when you do not know what datatypes you are working with.
        + More so when it is code that you have not written.
      * Python does have OPTIONAL type annotations.
        + This can be incredibly helpful.
        + This does not change in anyway how the code executes.
        + This will allow your intellisense in an IDE or text editor to give you great hints.
  + Strongly typed
    - The language does NOT implicitly coerce values into different data types.
* History of Python
  + Created in 1991 by Guido Von Rosssum
  + Wanted to make a fun language.
    - Named it after Monty Python.
  + Very popular in the scientific community.
    - Very easy to read
    - Excellent support for common data types and great operations on them.
  + It also became popular for web development.
    - Flask
      * - Micro Framework
    - Django
      * Larger more complete framework for Python web applications