Intro To Python

CACI Intern Class 2025

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What is Python?

- Python is a **high-level**, **general-purpose** programming language.
- Python was created by Guido Van Rossum and released in 1991.
- Python is an **interpreted** language.
- Python is **strongly typed** and **dynamically typed**.
- Python uses **whitespace indentation** to group statements.
- Python is one of the most popular programming languages in the world!

Features of Python

- Readable syntax
- Easier development with no compiling
- Convenient data handling
  - Lists
  - Tuples
  - Dictionaries
  - File I/O
- Operating system interface

- https://docs.python.org/3/tutorial/introduction.html

Python Modules

- When you want to create more complicated python programs, it is useful to break your code up into multiple files.

- In python, a **module** is simply a file which contains python statements and definitions. **Modules** may be **imported** into other modules or your main script using python's **import** statement.

- https://docs.python.org/3/tutorial/modules.html

Python Virtual Environments

- There are many packages available for python which provide capabilities outside of what exist in python's standard library. (Examples: numpy, matplotlib, pandas).

- External packages may be installed using a program called **pip**.

- **Virtual environments** are a way to organize and manage your installed python packages.

- https://docs.python.org/3/tutorial/venv.html

Python Unit Testing

- Unit testing your code as you develop it can help you to write higher quality software and ensures that your software is performing as intended.

- The **unittest** package comes built-in with python, but there are many different unit testing frameworks out there.

- **Test Driven Development** is the process of writing tests **before** you develop your code. This helps the software developer to fully define the intended functionality of the code before writing it.