# Chapter 2: Modules, Comment & Pip

Made By:

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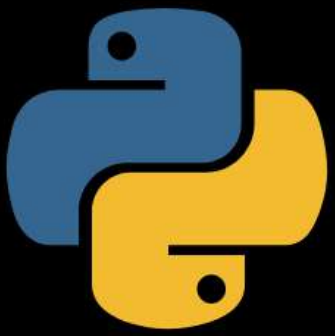

## 2.1 Modules in Python:

- Modules provide a way to organize your code logically. Instead of having all your code in a single file, you can split it into multiple modules based on their purpose

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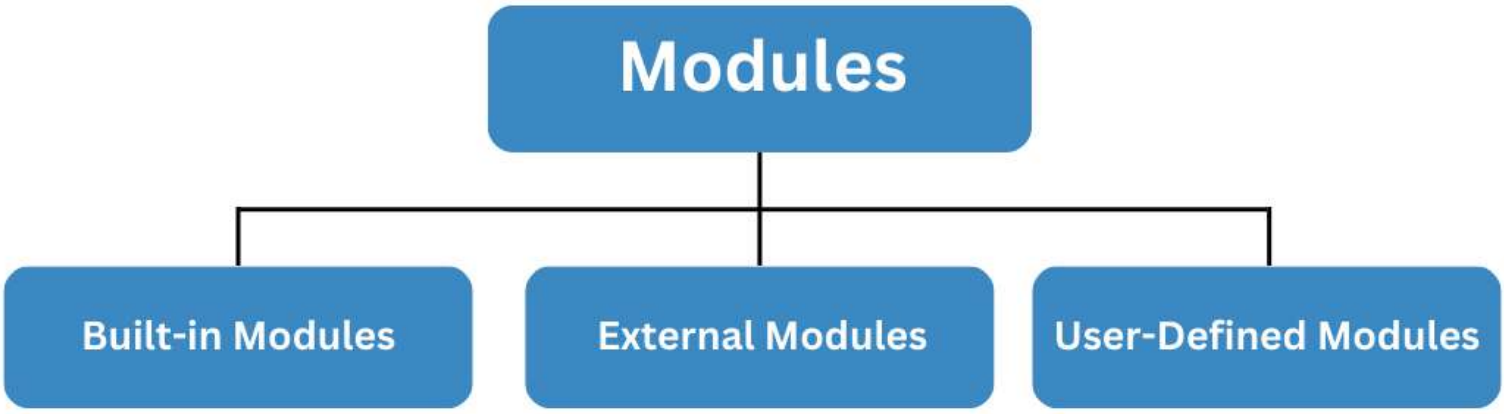
- For example, you might have one module for handling input/output operations, another for mathematical calculations, and another for data manipulation.

- When you want to use the functionality from a module, you can import it into your current program or another module.

- This allows you to access and use the functions, classes, and variables defined within that module. By importing a module, you can avoid writing the same code repeatedly and instead reuse the code defined in the module.

# Three Main Types of Modules




## Built-in Modules:

- These are modules that come pre-installed with Python. They are part of the standard library and provide a wide range of functionalities.

- Examples include modules like math for mathematical operations, random for generating random numbers, DateTime for working with dates and times, and os for interacting with the operating system.

- Built-in modules are readily available for use without the need for additional installations.

## External Modules:

- These are modules that are created by third-party developers and are not part of the standard library.

- They extend Python's capabilities by providing additional functionalities for specific purposes. External modules can be downloaded and installed using package managers like pip (Python Package Index).

- Popular external modules include numpy for numerical computations, pandas for data manipulation and analysis, matplotlib for data visualization, and requests for making HTTP requests.

## User-Defined Modules:

- These are modules created by the Python programmers themselves. They allow users to organize their code into separate files and reuse functionality across multiple programs.

- User-defined modules can contain functions, classes, variables, and other code that can be imported and used in other Python scripts or modules.

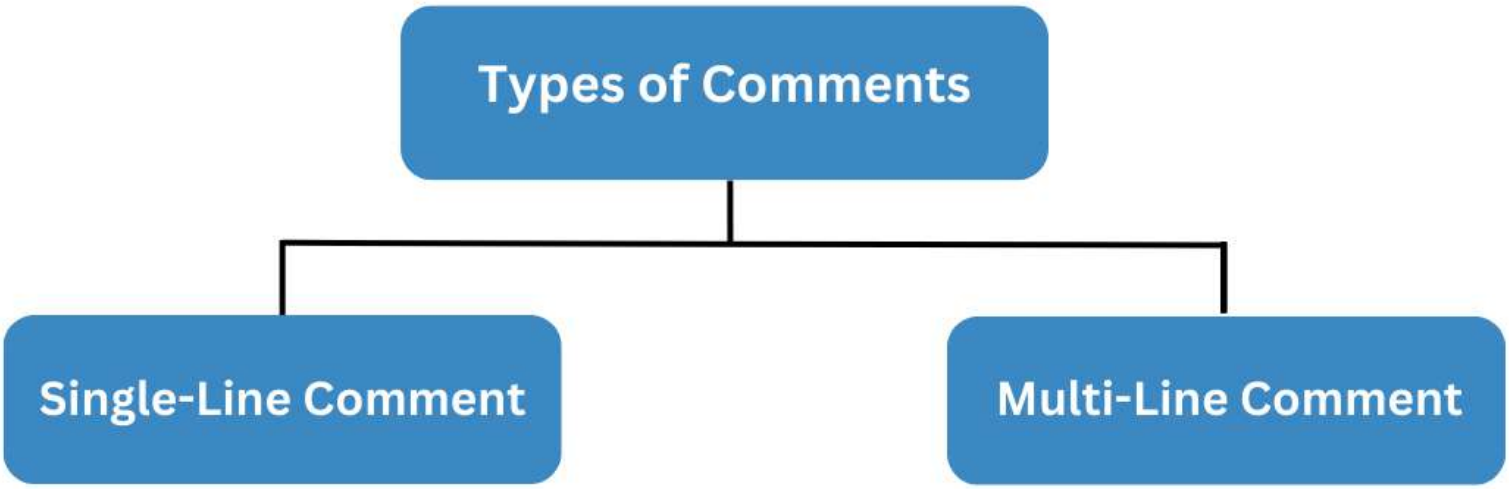
## 2.2 Comments in Python

- Comments in Python are used to provide explanatory notes within the code that are not executed or interpreted by the computer.

- They are helpful for improving code readability and for leaving reminders or explanations for other developers who might work with the code in the future.

- In Python, comments are denoted by the hash symbol **(#)** followed by the comment text.

- It's important to note that comments are meant for human readers and are not executed by the Python interpreter. Therefore, they have no impact on the program's functionality or performance.



## 1. Single-line comments:

- Single-line comments are used to add explanatory notes or comments on a single line of code.

- They start with a hash symbol (#) and continue until the end of the line.

- Anything written after the hash symbol is considered a comment and is ignored by the Python interpreter.
  **Here's an example:**

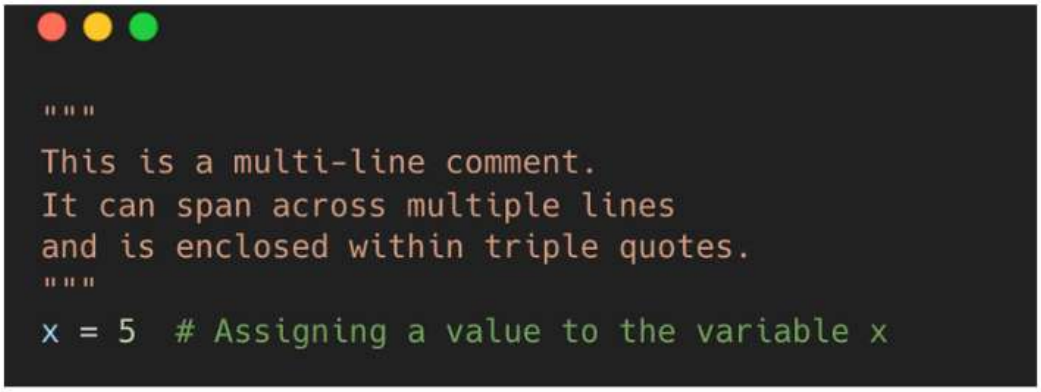
```
# This is a single-line comment
x = 5  # Assigning a value to the variable x
```

## 2. Multi-line comments:

- Multi-line comments, also known as block comments, allow you to add comments that span multiple lines.

- Python does not have a built-in syntax specifically for multi-line comments, but you can achieve this by using triple quotes (either single or double quotes) to create a string that is not assigned to any variable. Since it is not used elsewhere in the code, it acts as a comment.

**Here's an example:**



```
"""
This is a multi-line comment.
It can span across multiple lines
and is enclosed within triple quotes.
"""
x = 5  # Assigning a value to the variable x
```

## 2.3 What is a pip?

- In simple terms, pip is a package manager for Python. It stands for "Pip Installs Packages" or "Pip Installs Python."

- When working with Python, you may need to use external libraries or modules that provide additional functionalities beyond what the standard library offers. These libraries are often developed by the Python community and are available for anyone to use.

- Pip makes it easy to install, manage, and uninstall these external libraries. It helps you find and download the libraries you need from the Python Package Index (PyPI), which is a repository of Python packages maintained by the community.

- With pip, you can install a package by running a simple command in your terminal or command prompt.

# 3. Variables, Data Types Keywords & Operators

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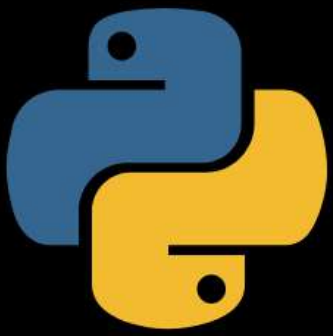

# Chapter 3 will Be Uploaded Tomorrow

## Follow for More Notes

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