

Chapter 1 – Modules, Pip & Comments.

Writing Your First Python Program

Let's write our very first Python program. Create a file called `hello.py` and paste the below code in it:

```
python

print("Hello, world!") # print is a function (more on this later)
```

Execute this file by typing `python hello.py` in your terminal, and you will see "Hello, world!" printed on the screen.

Modules

A module is a file containing Python code that can be imported and used in other programs. Modules are usually written by someone else and provide functionality that you can reuse.

Types of Modules

1. **Built-in Modules:** Preinstalled with Python. Examples include `os`, `random`, etc.
2. **External Modules:** Need to be installed using pip. Examples include `tensorflow`, `flask`, etc.

Example of Using a Module

```
python

import random

number = random.randint(1, 10)
print(number) # This will print a random number between 1 and 10
```

Pip

Pip is the package manager for Python. You can use pip to install external modules on your system.

Example of Installing a Module

```
sh  
  
pip install flask # Installs the Flask module
```

Using Python as a Calculator

You can use Python as a calculator by typing `python` and pressing Enter in the terminal. This opens the REPL (Read-Evaluate-Print Loop), where you can type Python expressions and see the results immediately.

Example of Using REPL

```
python  
  
>>> 2 + 3  
5  
>>> 7 * 8  
56  
>>> 10 / 2  
5.0
```

Comments

Comments are used to write notes or explanations in the code that the Python interpreter ignores. They can be used to mark the author name, date, or explain parts of the code.

Types of Comments

1. **Single-Line Comments:** To write a single-line comment, just add a `#` at the start of the line.

```
python  
  
# This is a single-line comment  
print("This will run")
```

2. **Multi-Line Comments:** To write multi-line comments, you can use `#` at the start of each line or use a multi-line string with triple quotes (`"""`).

```
python

"""
This is an amazing
example of a multi-line
comment!
"""

print("This will also run")
```

Summary

- **First Program:** Learned how to write and execute a simple Python program.
- **Modules:** Understood what modules are and the difference between built-in and external modules.
- **Pip:** Learned how to use pip to install external modules.
- **Python as a Calculator:** Used Python's REPL to perform basic arithmetic.
- **Comments:** Learned how to write single-line and multi-line comments in Python.