Module

A **module** in Python is a file that has Python code inside it.

The code can have **functions**, **classes**, and **variables**.

We use modules so we can **reuse code** instead of writing it again and again.

Example:

- Python has a built-in module called math.
- If we want to use the square root function, we can write:

```
import math

print(math.sqrt(9))  # Output: 3.0
```

So, **module = a toolbox** where tools (functions) are stored, and we can use them anytime.

There are two main types of modules in Python:

1. **Built-in modules**
    - These come with Python.
    - You don't need to create or download them.
    - Example:
        - math (math functions)
        - random (random numbers)
        - datetime (date and time)
2. **User-defined modules**
    - These are made by you.
    - You can write some functions in a .py file and use them in another program.
    - Example:

Create a file my_tools.py:

def say_hello():

print("Hello!")

Then use it:

import my_tools

my_tools.say_hello()

Tip to remember:

Think of modules like **books in a library**:

- Built-in modules = books already in the library.

User-defined modules = books you write yourself.

PIP

Pip is a tool that comes with Python.

It helps you install Python packages (modules) from the internet.

- Pip = “Python’s package manager”
- Without pip, you have to manually download and set up modules, which is harder.

What do I need to run pip install pyjoke?

pip install … is just telling Python to **bring** that module from the internet and put it on your computer.