

# Python Modules & Packages Cheatsheet

## 1. What is a Module?

A module is a single Python file (.py) containing Python code that can be imported and reused.

## 2. Importing Modules

```
import module_name # Import entire module from module_name
import func_name # Import specific function/class
import module_name as alias # Import with alias from module_name
import * # Import all (not recommended)
```

## 3. Built-in Modules Examples

```
math, os, sys, datetime, random, re, json, csv, time, calendar
```

## 4. Installing Modules

```
pip install package_name
pip install package_name==version
pip install --upgrade package_name
```

## 5. Checking Installed Modules

```
pip list
python -m pip list
pip show package_name
help('modules') # Inside Python
```

## 6. Searching / Filtering Modules

```
pip list | find "name" # Windows CMD
pip list | grep name # Mac/Linux
```

## 7. Exporting Installed Modules

```
pip freeze > requirements.txt
pip install -r requirements.txt
```

## 8. sys.path

List of directories Python searches for modules.

## 9. `__name__ == '__main__'`

Checks if the file is being run directly, not imported.

## 10. Commonly Used Built-in Modules

math → Mathematical functions os → OS-level operations sys → Python runtime  
environment datetime → Dates & times random → Random number generation re → Regular  
expressions json → Working with JSON data csv → CSV file reading/writing