

Python Essentials — Cheat Sheet

FREE CHEAT SHEET

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Core Types

TYPE	EXAMPLE
<code>int</code>	<code>age = 32</code>
<code>float</code>	<code>price = 19.99</code>
<code>str</code>	<code>name = "Ada"</code>
<code>bool</code>	<code>is_active = True</code>
<code>None</code>	<code>result = None</code>

Data Structures

TYPE	SYNTAX	ORDERED	CHANGEABLE
List	<code>[1, 2, 3]</code>	Yes	Yes
Tuple	<code>(1, 2, 3)</code>	Yes	No
Dictionary	<code>{"key": "value"}</code>	Yes (3.7+)	Yes
Set	<code>{1, 2, 3}</code>	No	Yes

Control Flow

TASK	SYNTAX
Conditional	<code>if x: ... elif y: ... else: ...</code>
Loop over items	<code>for item in items:</code>
Loop with index	<code>for i, item in enumerate(items):</code>
Loop while true	<code>while condition:</code>
Exit a loop	<code>break</code>
Skip an iteration	<code>continue</code>

Functions

```
def name(param, default="value", *args, **kwargs):  
    return result
```

Common Exceptions

EXCEPTION	MEANING
<code>ValueError</code>	Right type, wrong value
<code>TypeError</code>	Wrong type for the operation
<code>KeyError</code>	Dictionary key missing
<code>IndexError</code>	List index out of range
<code>NameError</code>	Variable not defined
<code>ModuleNotFoundError</code>	Package not installed or env not activated

Virtual Environments

TASK	COMMAND
Create	<code>python -m venv .venv</code>
Activate (Windows)	<code>.venv\Scripts\activate</code>
Activate (macOS/Linux)	<code>source .venv/bin/activate</code>
Install a package	<code>pip install name</code>
Freeze dependencies	<code>pip freeze > requirements.txt</code>
Install from file	<code>pip install -r requirements.txt</code>

Classes

```
class Dog:  
    def __init__(self, name):  
        self.name = name  
  
    def bark(self):  
        return f"{self.name} says woof!"
```

Error Handling

```
try:  
    risky_operation()  
except ValueError as e:  
    handle_error(e)  
else:  
    handle_success()  
finally:  
    cleanup()
```

Golden Rules

RULE

Indentation is syntax, not style. Use 4 spaces, everywhere.

RULE

Never use a mutable object as a default argument value.

RULE

Catch specific exceptions. Never use a bare `except: .`

RULE

Create a virtual environment for every project, without exception.

RULE

Read the traceback before you search the error.