

# Stage 2 - Python, Web & Networking Cheat Sheet

## 1. Python Basics

- Define Function: `def function_name()`
- Conditional Statements: `if`, `else`, `elif`
- Loops: `for` (fixed iterations), `while` (condition-based)
- Break Loop: `break`
- Continue Loop: `continue`
- Exception Handling: `try`, `except`
- Comments: `# This is a comment`

## 2. Python Data Types & Methods

- `int` / `float`: Numbers
- `str`: Text
- `bool`: `True` / `False`
- `list`: Ordered, mutable collection -> `append()`, `remove()`, `len()`
- `tuple`: Ordered, immutable collection
- `dict`: Key-value pairs -> `dict[key] = value`
- `stack`: LIFO data structure (can use `list`)
- `lower()`: Convert string to lowercase
- `upper()`: Convert string to uppercase

## 3. Python Operators

- `+`, `-`, `*`, `/` : Arithmetic
- `**` : Exponentiation
- `//` : Floor division
- `%` : Modulus
- `==`, `!=`, `<`, `>` : Comparison

## 4. Web Basics

- `HTML`: Structure of web pages

- CSS: Styling web pages
- JavaScript: Interactivity on web pages
- URL: Web page address
- Search Engine: Google, Bing

## 5. Networking Basics

- Router: Directs traffic between networks
- Switch: Connects multiple devices in LAN
- Hub: Connects devices in LAN (broadcasts traffic)
- Repeater: Amplifies network signals
- LAN: Local Area Network (home/office)
- WLAN: Wireless LAN
- Wi-Fi adapter: Connects device to wireless network

## 6. Key Python Notes

- Access list element by index: `list[0]`
- Iterate over sequence: `for item in list:`
- Dictionary access: `dict[key]`
- String methods: `lower()`, `upper()`, `strip()`, `split()`