**Topics**

1. **Installing Python**:
   * Download Python from the official site [python.org](https://www.python.org/).
   * Install Python (ensure "Add Python to PATH" is checked during installation).
   * Verify the installation by running python --version or python3 --version in the terminal.
2. **Installing an IDE**:
   * Use IDEs like **VS Code** or **PyCharm**.
   * Install extensions like Python in VS Code for linting and syntax highlighting.
3. **Basic Python Syntax**:
   * Variables: Store data (name = "server1", ip = "192.168.1.1").
   * Comments: Use # for single-line comments.
   * print() function: To display outputs.
4. **Data Types**:
   * **Strings**: Text ("hello", 'server1').
   * **Integers/Floats**: Numbers (123, 45.67).
   * **Lists**: Ordered collections (["server1", "server2"]).
   * **Dictionaries**: Key-value pairs ({"name": "server1", "ip": "192.168.1.1"}).

**Practical Exercises**

**1. Install Python and Verify Setup**

* Open a terminal and type python or python3.
* You should see a Python interactive shell (>>>).
* Exit with exit() or Ctrl+D.

**2. Write Your First Python Script**

* Open a text editor or IDE.
* Write the following script:

python

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print("Welcome to Python for DevOps!")

* Save the file as welcome.py.
* Run it using the terminal:

bash

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python welcome.py

**3. Working with Variables**

* Write a script to store server information:

python

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server\_name = "web\_server"

ip\_address = "192.168.1.10"

print(f"The server {server\_name} is at {ip\_address}.")

* Output:

csharp

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The server web\_server is at 192.168.1.10.

**4. Create and Manipulate a List**

* Script:

python

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servers = ["server1", "server2", "server3"]

servers.append("server4") # Add a server

print("Updated Server List:", servers)

* Output:

arduino

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Updated Server List: ['server1', 'server2', 'server3', 'server4']

**5. Store Server Credentials in a Dictionary**

* Script:

python

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server\_credentials = {

"server1": {"username": "admin", "password": "pass123"},

"server2": {"username": "root", "password": "rootpass"},

}

print("Server Credentials:", server\_credentials)

* Access a specific credential:

python

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print("Server1 Username:", server\_credentials["server1"]["username"])

* Output:

arduino

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Server Credentials: {'server1': {'username': 'admin', 'password': 'pass123'}, 'server2': {'username': 'root', 'password': 'rootpass'}}

Server1 Username: admin

**6. Challenge: Create a Script to Manage Servers**

* Objective: Store and retrieve information about servers.
* Script:

python

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servers = {

"web\_server": "192.168.1.10",

"db\_server": "192.168.1.20",

"cache\_server": "192.168.1.30"

}

# List all servers

print("Available Servers:")

for server, ip in servers.items():

print(f"{server}: {ip}")

# Get IP address for a specific server

selected\_server = input("Enter server name to get IP: ")

if selected\_server in servers:

print(f"The IP for {selected\_server} is {servers[selected\_server]}.")

else:

print("Server not found.")

* Run the script, and test with different inputs.