**Task 1: Research & Short Answers**

1. **What is an API?**

Provide a definition and give two real-world examples.

**->API (Application Programming Interface)** is a way for two programs to talk to each other.

**Examples:**

* Google Maps API: shows maps in apps/websites.
* Weather API: shows weather info in apps.

1. **What is a REST API?**

Explain the key principles (HTTP methods, statelessness, resources).

**->**A **REST API** is a type of API that follows rules and uses the internet to get or send data.

**Key Points:**

* **HTTP methods:** like GET, POST, PUT, DELETE
* **Stateless:** each request is independent
* **Resources:** data like posts, users, etc.

1. **List the common HTTP methods used in REST APIs and their purposes.**

(GET, POST, PUT, DELETE, PATCH)

|  |  |
| --- | --- |
| **Method** | **Use** |
| GET | Get data |
| POST | Send new data |
| PUT | Update all data |
| DELETE | Remove data |
| PATCH | Update some part of data |

**->**

**4.What is JSON? Why is it commonly used in APIs?**

**->JSON (JavaScript Object Notation)** is a simple way to store and share data.

**Why used in APIs?**

* Easy to read
* Easy for Python and other languages to use

**Part 2: Making API Requests with Python**

**Task 3: GET Request (Fetching Data)**

Use the **JSONPlaceholder API** (a free fake API for testing):

* Endpoint: <https://jsonplaceholder.typicode.com/posts>
* import requests
* url = "https://jsonplaceholder.typicode.com/posts"
* response = requests.get(url)
* print("Status Code:", response.status\_code)
* posts = response.json()
* print("First Post:", posts[0])

**Task 4: POST Request (Sending Data)**

**Instructions:**

1. Use the same API to create a new post.
2. Send a JSON payload with:

{

"title": "New Post",

"body": "This is a test post.",

"userId": 1

}

1. Print the response (should include the new post with an ID).

**->**

import requests

url = "https://jsonplaceholder.typicode.com/posts"

data = {

    "title": "New Post",

    "body": "This is a test post.",

    "userId": 1

}

response = requests.post(url, json=data)

print("New Post:", response.json())