
 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Practical based on Interacting with Web APIs	
<b>Experiment No: 21</b>	<b>Date:08-11-2025</b>	<b>Enrollment No:92400133131</b>

**Aim:** Practical based on Interacting with Web APIs

**IDE:**

To interact with web APIs using Python and libraries like requests. The practical will involve making GET and POST requests, handling responses, and parsing JSON data.

Library Installation

pip install requests

**Select an API:** Choose a public API for testing. For this tutorial, we'll use the JSONPlaceholder API, a free fake online REST API for testing and prototyping.

Making a GET Request

Fetch a list of posts.

```
import requests
```

```
# Define the API endpoint
```

```
url = 'https://jsonplaceholder.typicode.com/posts'
```

```
# Make a GET request
```


```
response = requests.get(url)
```

```
# Check the status code
```

```
if response.status_code == 200:
```

```
    # Parse JSON response
```

```
    posts = response.json()
```

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```
print("Fetched Posts:")

for post in posts[:5]: # Print the first 5 posts

    print(f"Title: {post['title']}")

else:

    print(f"Failed to retrieve posts. Status code: {response.status_code}")
```

output:-

```
SyntaxError: invalid syntax
PS D:\paython\vs code> & C:/Users/ACER/AppData/Local/Programs/Python/Python314/python.
Fetched Posts:
Title: sunt aut facere repellat provident occaecati excepturi optio reprehenderit
Title: qui est esse
Title: ea molestias quasi exercitationem repellat qui ipsa sit aut
Title: eum et est occaecati
Title: nesciunt quas odio
PS D:\paython\vs code>
```

Making a POST Request

Create a new post.

```
import requests
```

```
# Define the API endpoint
```



```
url = 'https://jsonplaceholder.typicode.com/posts'
```

```
# Define the data to send
```

```
new_post = {
```

```
    "title": "My New Post",
```

```
    "body": "This is the content of my new post.",
```

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```

"userId": 1
}

# Make a POST request
response = requests.post(url, json=new_post)

# Check the status code
if response.status_code == 201:
    # Parse JSON response
    created_post = response.json()
    print("Created Post:")
    print(f"Title: {created_post['title']}")
    print(f"Body: {created_post['body']}")
else:
    print(f"Failed to create post. Status code: {response.status_code}")

```

output:-

```


Created Post:
Title: My New Post
Body: This is the content of my new post.
PS: Do further code

```

### Error Handling

Handle potential errors in API requests.

```
import requests
```

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```
url = 'https://jsonplaceholder.typicode.com/posts/1000' # Non-existent post
```

```
response = requests.get(url)
```

```
if response.status_code == 200:
```

```
    post = response.json()
```

```
    print("Fetched Post:", post)
```

```
else:
```

```
    print(f"Error: {response.status_code} - {response.reason}")
```

output:-

```
Error: 404 - Not Found
```

### Post Lab:

Building a Simple API Client (Write a simple Python class that encapsulates the functionality for making GET and POST requests to the JSONPlaceholder API. Include methods for fetching posts and creating a new post.)



Code:-

```
import requests
```

```
class SimpleAPIClient:
```

```
    def __init__(self):
```

```
        self.base_url = "https://jsonplaceholder.typicode.com"
```

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```
def get_posts(self):

    response = requests.get(f"{self.base_url}/posts")

    return response.json()


def create_post(self, title, body, user_id):

    data = {"title": title, "body": body, "userId": user_id}

    response = requests.post(f"{self.base_url}/posts", json=data)

    return response.json()


client = SimpleAPIClient()

print(client.get_posts()[2])

print(client.create_post("Hello", "This is a test post", 1))
```

Output :-

```
PS D:\python\vs_code> & C:/Users/ACER/AppData/Local/Programs/Python/Python314/python.exe d:/python/vs_code/post_lab21.py
[{'userId': 1, 'id': 1, 'title': 'sunt aut facere repellat provident occaecati excepturi optio reprehenderit', 'body': 'quia et suscipit\nsuscipit recusandae consequuntur expedita et cum\nreprehenderit molestiae ut ut quas totam\nnostrum rerum est autem sunt rem eveniet architecto'}, {'userId': 1, 'id': 2, 'title': 'qui est esse', 'body': 'est rerum tempore vitae\nsequi sint nihil reprehenderit dolor beatae ea dolores neque\nfugiat blanditiis voluptate porro vel nihil molestiae ut reiciendis\nqui aperiam non debitis possimus qui neque nisi nulla'}]
{'title': 'Hello', 'body': 'This is a test post', 'userId': 1, 'id': 101}
```

Github link :-

<https://github.com/farhanweb404/farhankaladiya.git>