Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Engineering & Technology** **Department of Information and Communication Technology**	
Subject: Programming With Python (01CT1309)	**Aim:** Practical based on Interacting with Web APIs	
Experiment No: 21	**Date:**	**Enrollment No: 92400133037**

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.

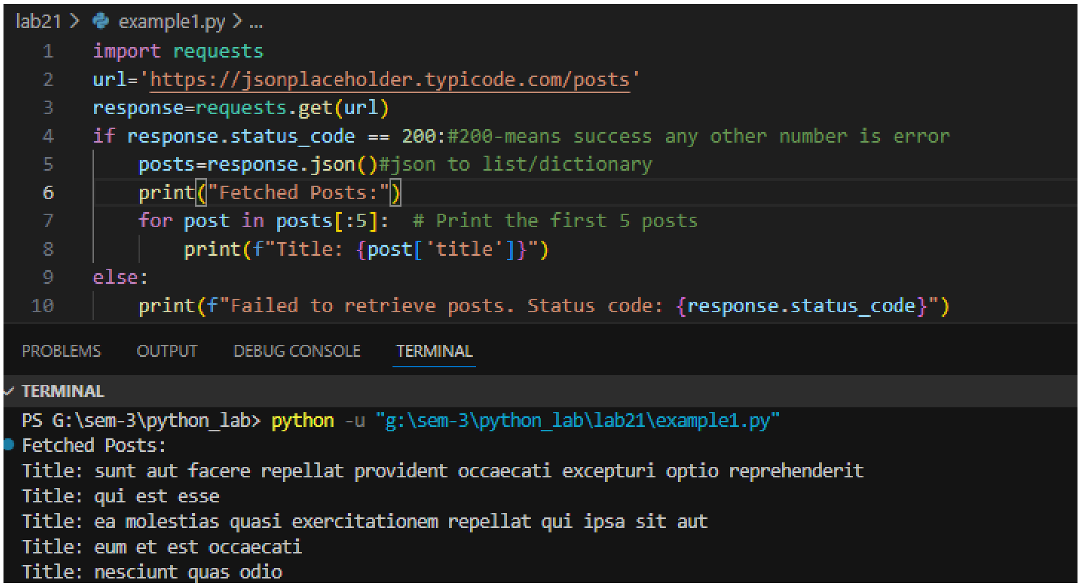
```
import requests


# 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()

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}")



```
import requests
url='https://jsonplaceholder.typicode.com/posts'
response=requests.get(url)
if response.status_code == 200:#200-means success any other number is error
    posts=response.json()#json to list/dictionary
    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}")
```

```
PS G:\sem-3\python_lab> python -u "g:\sem-3\python_lab\lab21\example1.py"
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
```

Making a POST Request

Create a new post.

import requests

# Define the API endpoint

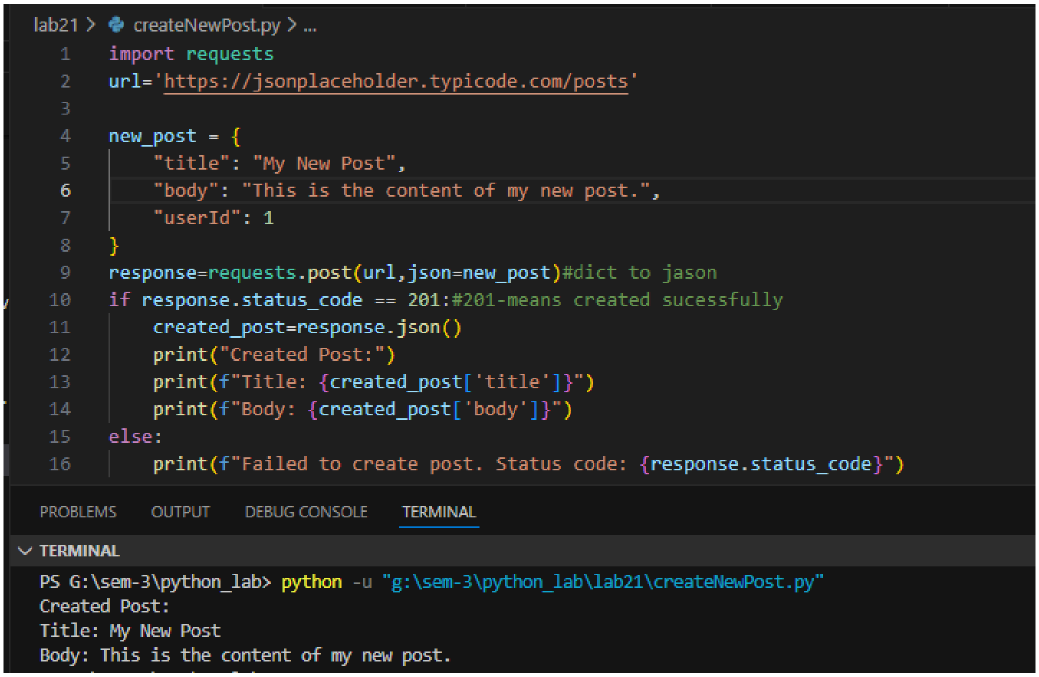
url = 'https://jsonplaceholder.typicode.com/posts'

# Define the data to send

new_post = {

    "title": "My New Post",

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



lab21 > createNewPost.py > ...

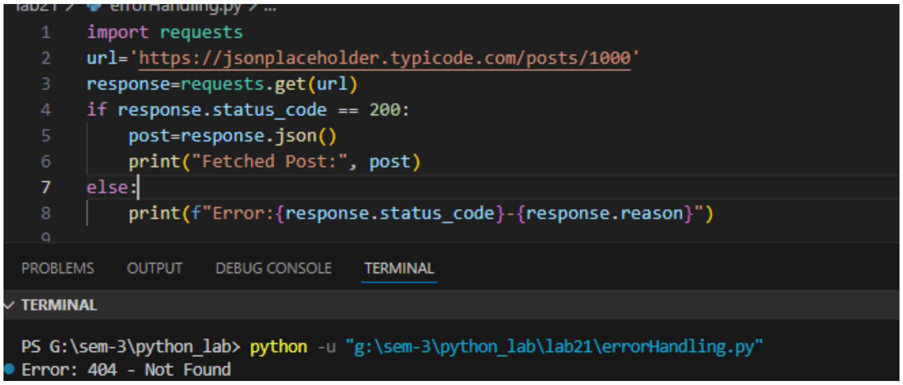
```python
import requests
url='https://jsonplaceholder.typicode.com/posts'

new_post = {
    "title": "My New Post",
    "body": "This is the content of my new post.",
    "userId": 1
}
response=requests.post(url,json=new_post)#dict to jason
if response.status_code == 201:#201-means created sucessfully
    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}")
```

```
PS G:\sem-3\python_lab> python -u "g:\sem-3\python_lab\lab21\createNewPost.py"
Created Post:
Title: My New Post
Body: This is the content of my new post.
```

Error Handling

Handle potential errors in API requests.

```python
import requests

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}")
```



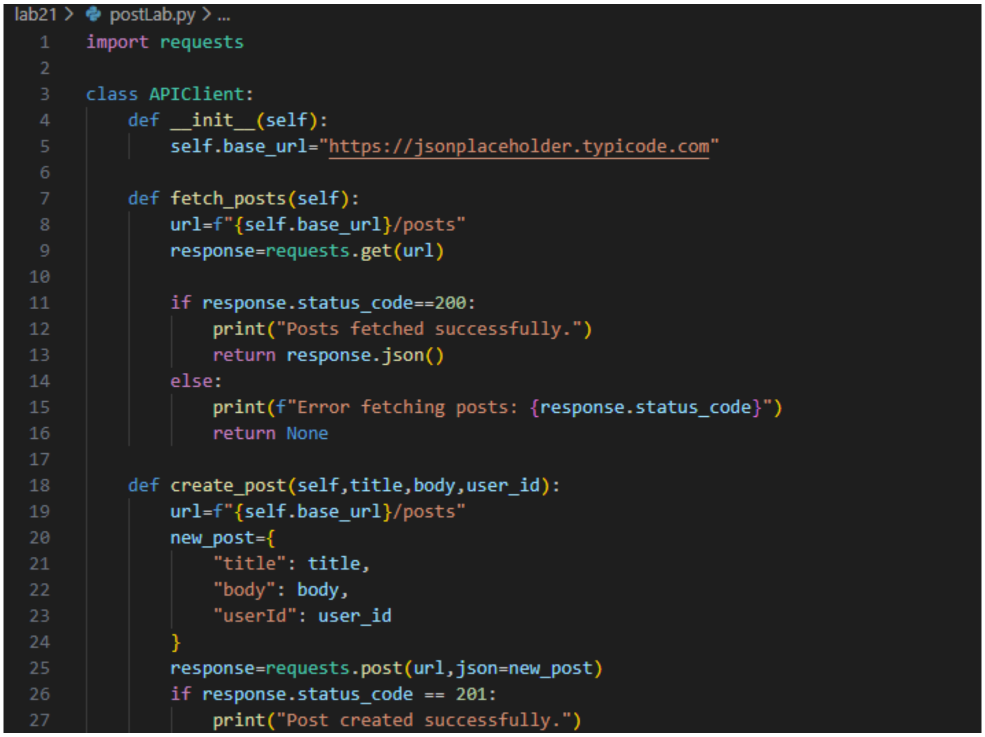
lab21 > errorHandling.py > ...

```python
import requests
url='https://jsonplaceholder.typicode.com/posts/1000'
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}")
```

```
PS G:\sem-3\python_lab> python -u "g:\sem-3\python_lab\lab21\errorHandling.py"
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.)



lab21 > postLab.py > ...

```python
import requests

class APIClient:
    def __init__(self):
        self.base_url="https://jsonplaceholder.typicode.com"

    def fetch_posts(self):
        url=f"{self.base_url}/posts"
        response=requests.get(url)

        if response.status_code==200:
            print("Posts fetched successfully.")
            return response.json()
        else:
            print(f"Error fetching posts: {response.status_code}")
            return None

    def create_post(self,title,body,user_id):
        url=f"{self.base_url}/posts"
        new_post={
            "title": title,
            "body": body,
            "userId": user_id
        }
        response=requests.post(url,json=new_post)
        if response.status_code == 201:
            print("Post created successfully.")
```

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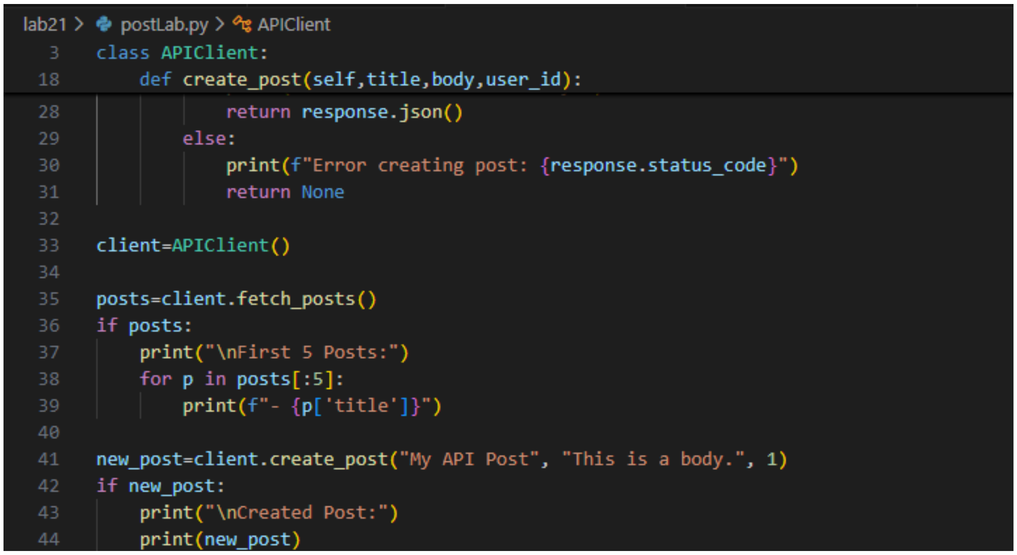
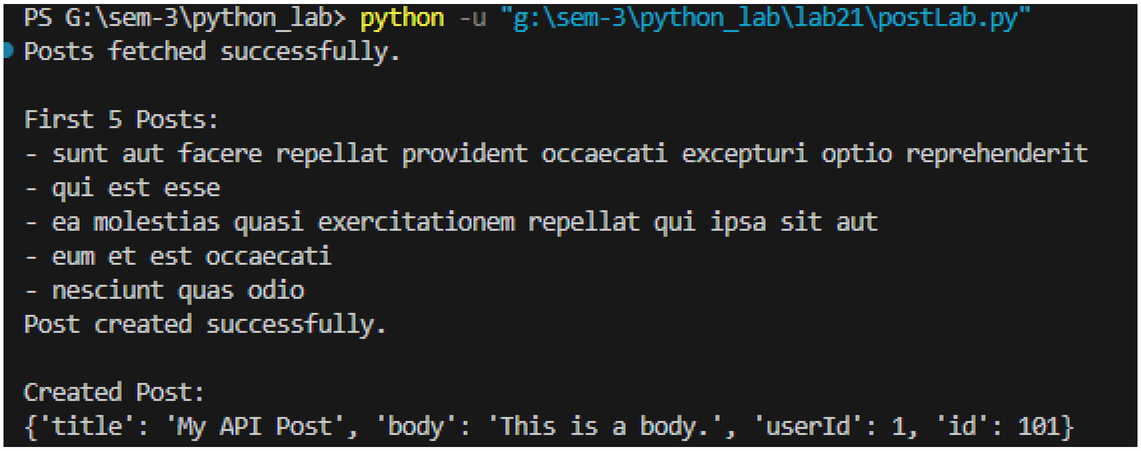


```python
class APIClient:
    def create_post(self,title,body,user_id):
            return response.json()
        else:
            print(f"Error creating post: {response.status_code}")
            return None

client=APIClient()

posts=client.fetch_posts()
if posts:
    print("\nFirst 5 Posts:")
    for p in posts[:5]:
        print(f"- {p['title']}")

new_post=client.create_post("My API Post", "This is a body.", 1)
if new_post:
    print("\nCreated Post:")
    print(new_post)
```



```
PS G:\sem-3\python_lab> python -u "g:\sem-3\python_lab\lab21\postLab.py"
Posts fetched successfully.

First 5 Posts:
- sunt aut facere repellat provident occaecati excepturi optio reprehenderit
- qui est esse
- ea molestias quasi exercitationem repellat qui ipsa sit aut
- eum et est occaecati
- nesciunt quas odio
Post created successfully.

Created Post:
{'title': 'My API Post', 'body': 'This is a body.', 'userId': 1, 'id': 101}
```

GITHUB LINK:
https://github.com/Heer972005/Python_Lab