❖ Python Projects for DevOps

Visit for Whole Project: GitHub

Project 1:

Create a python script (Python 3.13 version and higher)that:

1. Fetches JSON data from the URL
https://whatismyip.callgoose.com/devops/devops.json

2. Takes user inputs (name, language, bio) as arguments.

3. Generates a random ID and version.

4. Appends the user input data to the JSON list.

5. Sends the modified JSON data to a given POST endpoint.
https://httpbin.org/post

When I run with the input value mentioned below, Example output I will get is the below

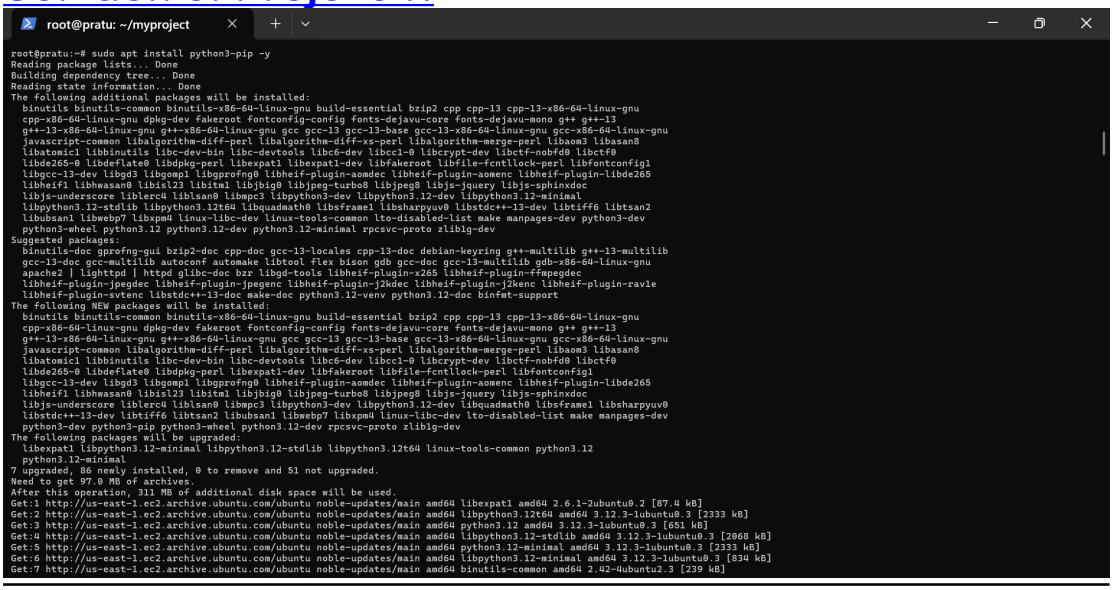
user1@mylap:~/Documents$ python3.13 python_reprocess_data.py "John Mathew" English "My name is John Mathew. I'm an IT professional"

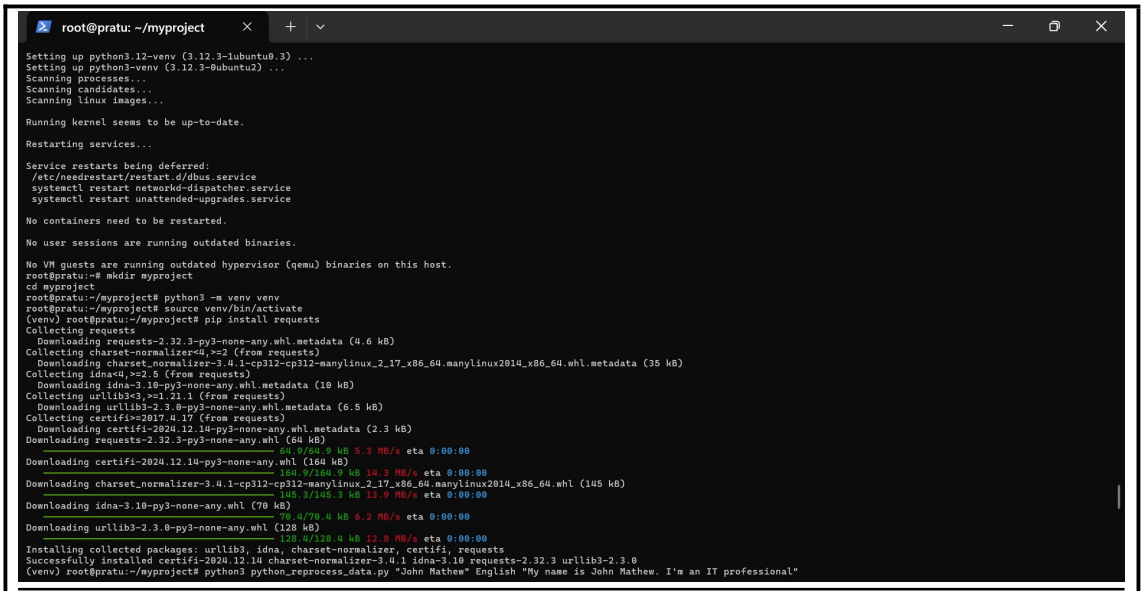

```
{
   "args": {},
   "data": "{\"dummy_data\": [{\"name\": \"Adeel Solangi\", \"language\": \"Sindhi\", \"id\": \"V59OF92YF627HFY0\", \"bio\": \"Donec lobortis eleifend condimentum. Cras dictum dolor lacinia lectus vehicula rutrum. Maecenas quis nisi nunc. Nam tristique feugiat est vitae mollis. Maecenas quis nisi nunc.\", \"version\": 6.1}, {\"name\": \"Afzal Ghaffar\", \"language\": \"Sindhi\", \"id\": \"ENTOCR13RSCLZ6KU\", \"bio\": \"Aliquam sollicitudin ante ligula, eget malesuada nibh efficitur et. Pellentesque massa sem, scelerisque sit amet odio id, cursus tempor urna. Etiam congue dignissim volutpat. Vestibulum pharetra libero et velit gravida euismod.\", \"version\": 1.88}, {\"name\": \"Aamir Solangi\", \"language\": \"Sindhi\", \"id\": \"IAKPO3R4761JDRVG\", \"bio\": \"Vestibulum pharetra libero et velit gravida euismod. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Fusce eu ultrices elit, vel posuere neque.\", \"version\": 7.27}, {\"name\": \"Abla Dilmurat\", \"language\": \"Uyghur\", \"id\": \"5ZVOEPMJUI4MB4EN\",
```

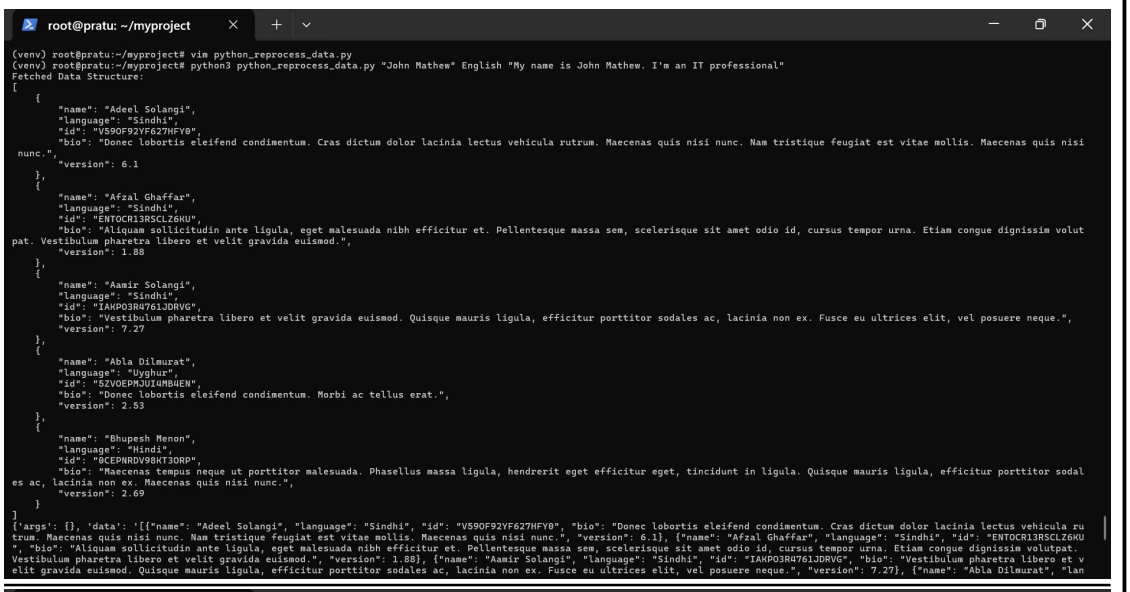
\"bio\": \"Donec lobortis eleifend condimentum. Morbi ac tellus erat.\", \"version\": 2.53}, {\"name\": \"Bhupesh Menon\", \"language\": \"Hindi\", \"id\": \"0CEPNRDV98KT3ORP\", \"bio\": \"Maecenas tempus neque ut porttitor malesuada. Phasellus massa ligula, hendrerit eget efficitur eget, tincidunt in ligula. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Maecenas quis nisi nunc.\", \"version\": 2.69}, {\"name\": \"John Mathew\", \"language\": \"English\", \"id\": \"1ce4d5cf-5a18-4fbd-b479-7c86c7cf66b1\", \"bio\": \"My name is John Mathew. I'm an IT professional\", \"version\": 3.75}]}",
  "files": {},
  "form": {},
  "headers": {
    "Accept": "*/*",
    "Accept-Encoding": "gzip, deflate, br",
    "Content-Length": "1541",
    "Content-Type": "application/json",
    "Host": "httpbin.org",
    "User-Agent": "python-requests/2.32.3",
    "X-Amzn-Trace-Id": "Root=1-67616d58-5c8680e5150c339014ffc7b4"
  },
  "json": {
    "dummy_data": [
      {
        "bio": "Donec lobortis eleifend condimentum. Cras dictum dolor lacinia lectus vehicula rutrum. Maecenas quis nisi nunc. Nam tristique feugiat est vitae mollis. Maecenas quis nisi nunc.",
        "id": "V59OF92YF627HFY0",
        "language": "Sindhi",
        "name": "Adeel Solangi",
        "version": 6.1
      },
      {
        "bio": "Aliquam sollicitudin ante ligula, eget malesuada nibh efficitur et. Pellentesque massa sem, scelerisque sit amet odio id, cursus tempor urna. Etiam congue dignissim volutpat. Vestibulum pharetra libero et velit gravida euismod.",
        "id": "ENTOCR13RSCLZ6KU",
        "language": "Sindhi",
        "name": "Afzal Ghaffar",
        "version": 1.88
      },
      {
        "bio": "Vestibulum pharetra libero et velit gravida euismod. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Fusce eu ultrices elit, vel posuere neque.",
        "id": "IAKPO3R4761JDRVG",
        "language": "Sindhi",
        "name": "Aamir Solangi",
        "version": 7.27

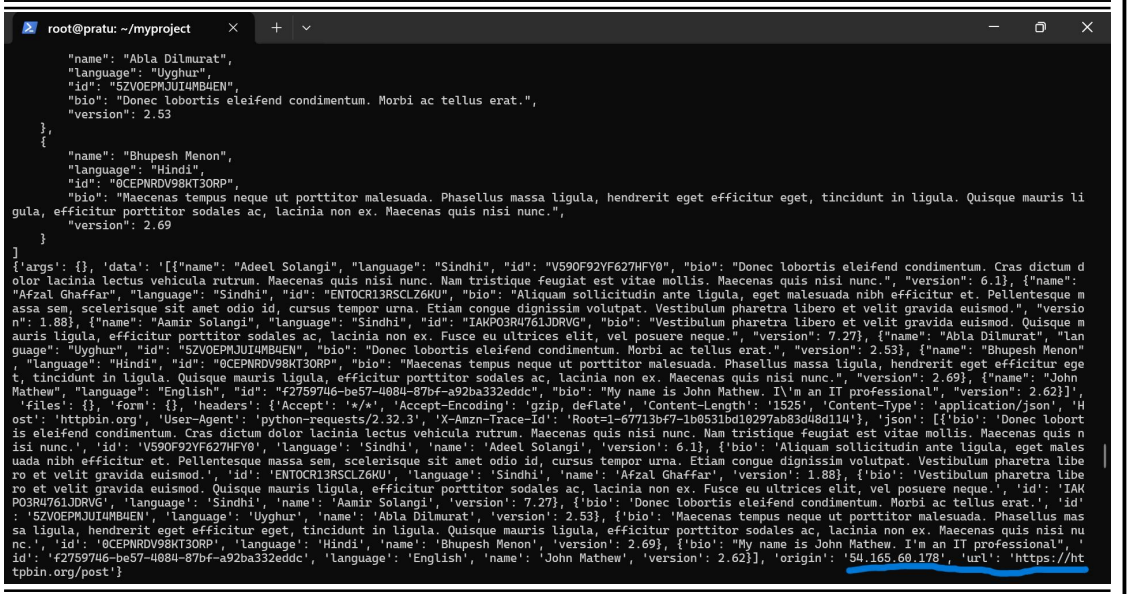
```
        },
        {
          "bio": "Donec lobortis eleifend condimentum. Morbi ac tellus erat.",
          "id": "5ZVOEPMJUI4MB4EN",
          "language": "Uyghur",
          "name": "Abla Dilmurat",
          "version": 2.53
        },
        {
          "bio": "Maecenas tempus neque ut porttitor malesuada. Phasellus massa ligula, hendrerit eget efficitur eget, tincidunt in ligula. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Maecenas quis nisi nunc.",
          "id": "0CEPNRDV98KT3ORP",
          "language": "Hindi",
          "name": "Bhupesh Menon",
          "version": 2.69
        },
        {
          "bio": "My name is John Mathew. I'm an IT professional",
          "id": "1ce4d5cf-5a18-4fbd-b479-7c86c7cf66b1",
          "language": "English",
          "name": "John Mathew",
          "version": 3.75
        }
      ]
    },
    "origin": "<This will show your Public IP>",
    "url": "https://httpbin.org/post"
}
user1@mylap:~/Documents$
```


Solution of Project 1:




root@pratu: ~/myproject
Setting up python3.12-venv (3.12.3-1ubuntu0.3) ...
Setting up python3-venv (3.12.3-0ubuntu2) ...
Scanning processes...
Scanning candidates...
Scanning linux images...
Running kernel seems to be up-to-date.
Restarting services...
Service restarts being deferred:
/etc/needrestart/restart.d/dbus.service
systemctl restart networkd-dispatcher.service
systemctl restart unattended-upgrades.service
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@pratu:~# mkdir myproject
cd myproject
root@pratu:~/myproject# python3 -m venv venv
root@pratu:~/myproject# source venv/bin/activate
(venv) root@pratu:~/myproject# pip install requests
Collecting requests
Downloading requests-2.32.3-py3-none-any.whl.metadata (4.6 kB)
Collecting charset-normalizer<4,>=2 (from requests)
Downloading charset_normalizer-3.4.1-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl.metadata (35 kB)
Collecting idna<4,>=2.5 (from requests)
Downloading idna-3.10-py3-none-any.whl.metadata (10 kB)
Collecting urllib3<3,>=1.21.1 (from requests)
Downloading urllib3-2.3.0-py3-none-any.whl.metadata (6.5 kB)
Collecting certifi>=2017.4.17 (from requests)
Downloading certifi-2024.12.14-py3-none-any.whl.metadata (2.3 kB)
Downloading requests-2.32.3-py3-none-any.whl (64 kB)
64.9/64.9 kB 5.3 MB/s eta 0:00:00
Downloading certifi-2024.12.14-py3-none-any.whl (164 kB)
164.9/164.9 kB 14.3 MB/s eta 0:00:00
Downloading charset_normalizer-3.4.1-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (145 kB)
145.3/145.3 kB 13.9 MB/s eta 0:00:00
Downloading idna-3.10-py3-none-any.whl (70 kB)
70.4/70.4 kB 6.2 MB/s eta 0:00:00
Downloading urllib3-2.3.0-py3-none-any.whl (128 kB)
128.4/128.4 kB 12.8 MB/s eta 0:00:00
Installing collected packages: urllib3, idna, charset-normalizer, certifi, requests
Successfully installed certifi-2024.12.14 charset-normalizer-3.4.1 idna-3.10 requests-2.32.3 urllib3-2.3.0
(venv) root@pratu:~/myproject# python3 python_reprocess_data.py "John Mathew" English "My name is John Mathew. I'm an IT professional"


root@pratu: ~/myproject
(venv) root@pratu:~/myproject# vim python_reprocess_data.py
(venv) root@pratu:~/myproject# python3 python_reprocess_data.py "John Mathew" English "My name is John Mathew. I'm an IT professional"
Fetched Data Structure:
[
{
"name": "Adeel Solangi",
"language": "Sindhi",
"id": "V59OF92YF627HFY0",
"bio": "Donec lobortis eleifend condimentum. Cras dictum dolor lacinia lectus vehicula rutrum. Maecenas quis nisi nunc. Nam tristique feugiat est vitae mollis. Maecenas quis nisi nunc.",
"version": 6.1
},
{
"name": "Afzal Ghaffar",
"language": "Sindhi",
"id": "ENTOCR13RSCLZ6KU",
"bio": "Aliquam sollicitudin ante ligula, eget malesuada nibh efficitur et. Pellentesque massa sem, scelerisque sit amet odio id, cursus tempor urna. Etiam congue dignissim volutpat. Vestibulum pharetra libero et velit gravida euismod.",
"version": 1.88
},
{
"name": "Aamir Solangi",
"language": "Sindhi",
"id": "IAKPO3R4761JDRVG",
"bio": "Vestibulum pharetra libero et velit gravida euismod. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Fusce eu ultrices elit, vel posuere neque.",
"version": 7.27
},
{
"name": "Abla Dilmurat",
"language": "Uyghur",
"id": "5ZVOEPMJUI4MB4EN",
"bio": "Donec lobortis eleifend condimentum. Morbi ac tellus erat.",
"version": 2.53
},
{
"name": "Bhupesh Menon",
"language": "Hindi",
"id": "0CEPNRDV98KT3ORP",
"bio": "Maecenas tempus neque ut porttitor malesuada. Phasellus massa ligula, hendrerit eget efficitur eget, tincidunt in ligula. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Maecenas quis nisi nunc.",
"version": 2.69
}
]
{'args': {}, 'data': '[{"name": "Adeel Solangi", "language": "Sindhi", "id": "V59OF92YF627HFY0", "bio": "Donec lobortis eleifend condimentum. Cras dictum dolor lacinia lectus vehicula rutrum. Maecenas quis nisi nunc. Nam tristique feugiat est vitae mollis. Maecenas quis nisi nunc.", "version": 6.1}, {"name": "Afzal Ghaffar", "language": "Sindhi", "id": "ENTOCR13RSCLZ6KU", "bio": "Aliquam sollicitudin ante ligula, eget malesuada nibh efficitur et. Pellentesque massa sem, scelerisque sit amet odio id, cursus tempor urna. Etiam congue dignissim volutpat. Vestibulum pharetra libero et velit gravida euismod.", "version": 1.88}, {"name": "Aamir Solangi", "language": "Sindhi", "id": "IAKPO3R4761JDRVG", "bio": "Vestibulum pharetra libero et velit gravida euismod. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Fusce eu ultrices elit, vel posuere neque.", "version": 7.27}, {"name": "Abla Dilmurat", "language": "Uyghur", "id": "5ZVOEPMJUI4MB4EN", "bio": "Donec lobortis eleifend condimentum. Morbi ac tellus erat.", "version": 2.53}, {"name": "Bhupesh Menon", "language": "Hindi", "id": "0CEPNRDV98KT3ORP", "bio": "Maecenas tempus neque ut porttitor malesuada. Phasellus massa ligula, hendrerit eget efficitur eget, tincidunt in ligula. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Maecenas quis nisi nunc.", "version": 2.69}]',

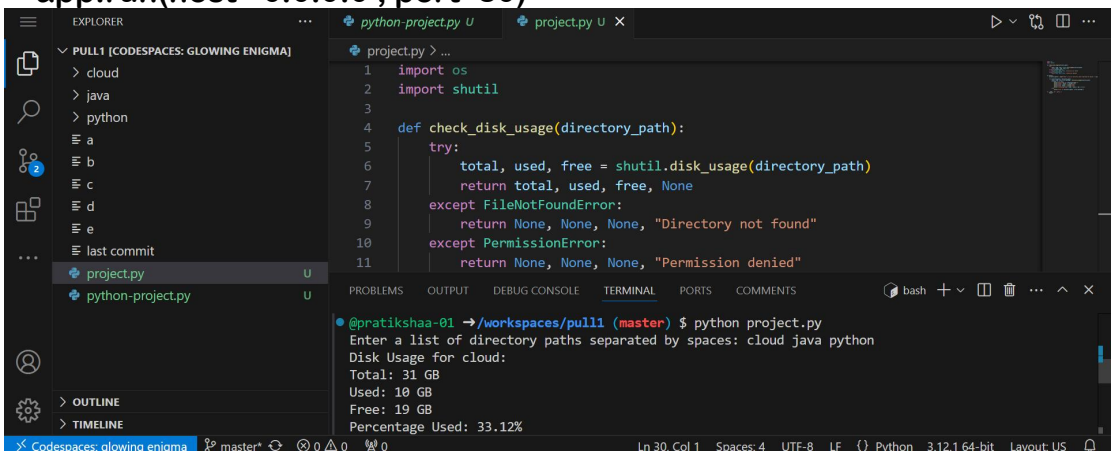

root@pratu: ~/myproject
"name": "Abla Dilmurat",
"language": "Uyghur",
"id": "5ZVOEPMJUI4MB4EN",
"bio": "Donec lobortis eleifend condimentum. Morbi ac tellus erat.",
"version": 2.53
},
{
"name": "Bhupesh Menon",
"language": "Hindi",
"id": "0CEPNRDV98KT3ORP",
"bio": "Maecenas tempus neque ut porttitor malesuada. Phasellus massa ligula, hendrerit eget efficitur eget, tincidunt in ligula. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Maecenas quis nisi nunc.",
"version": 2.69
}
]
{'args': {}, 'data': '[{"name": "Adeel Solangi", "language": "Sindhi", "id": "V59OF92YF627HFY0", "bio": "Donec lobortis eleifend condimentum. Cras dictum dolor lacinia lectus vehicula rutrum. Maecenas quis nisi nunc. Nam tristique feugiat est vitae mollis. Maecenas quis nisi nunc.", "version": 6.1}, {"name": "Afzal Ghaffar", "language": "Sindhi", "id": "ENTOCR13RSCLZ6KU", "bio": "Aliquam sollicitudin ante ligula, eget malesuada nibh efficitur et. Pellentesque massa sem, scelerisque sit amet odio id, cursus tempor urna. Etiam congue dignissim volutpat. Vestibulum pharetra libero et velit gravida euismod.", "version": 1.88}, {"name": "Aamir Solangi", "language": "Sindhi", "id": "IAKPO3R4761JDRVG", "bio": "Vestibulum pharetra libero et velit gravida euismod. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Fusce eu ultrices elit, vel posuere neque.", "version": 7.27}, {"name": "Abla Dilmurat", "language": "Uyghur", "id": "5ZVOEPMJUI4MB4EN", "bio": "Donec lobortis eleifend condimentum. Morbi ac tellus erat.", "version": 2.53}, {"name": "Bhupesh Menon", "language": "Hindi", "id": "0CEPNRDV98KT3ORP", "bio": "Maecenas tempus neque ut porttitor malesuada. Phasellus massa ligula, hendrerit eget efficitur eget, tincidunt in ligula. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Maecenas quis nisi nunc.", "version": 2.69}, {"name": "John Mathew", "language": "English", "id": "f2759746-be57-4084-87bf-a92ba332eddc", "bio": "My name is John Mathew. I\'m an IT professional", "version": 2.62}]', 'files': {}, 'form': {}, 'headers': {'Accept': '*/*', 'Accept-Encoding': 'gzip, deflate', 'Content-Length': '1525', 'Content-Type': 'application/json', 'Host': 'httpbin.org', 'User-Agent': 'python-requests/2.32.3', 'X-Amzn-Trace-Id': 'Root=1-67713bf7-1b0531bd10297ab83d48d114'}, 'json': [{'bio': 'Donec lobortis eleifend condimentum. Cras dictum dolor lacinia lectus vehicula rutrum. Maecenas quis nisi nunc. Nam tristique feugiat est vitae mollis. Maecenas quis nisi nunc.', 'id': 'V59OF92YF627HFY0', 'language': 'Sindhi', 'name': 'Adeel Solangi', 'version': 6.1}, {'bio': 'Aliquam sollicitudin ante ligula, eget malesuada nibh efficitur et. Pellentesque massa sem, scelerisque sit amet odio id, cursus tempor urna. Etiam congue dignissim volutpat. Vestibulum pharetra libero et velit gravida euismod.', 'id': 'ENTOCR13RSCLZ6KU', 'language': 'Sindhi', 'name': 'Afzal Ghaffar', 'version': 1.88}, {'bio': 'Vestibulum pharetra libero et velit gravida euismod. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Fusce eu ultrices elit, vel posuere neque.', 'id': 'IAKPO3R4761JDRVG', 'language': 'Sindhi', 'name': 'Aamir Solangi', 'version': 7.27}, {'bio': 'Donec lobortis eleifend condimentum. Morbi ac tellus erat.', 'id': '5ZVOEPMJUI4MB4EN', 'language': 'Uyghur', 'name': 'Abla Dilmurat', 'version': 2.53}, {'bio': 'Maecenas tempus neque ut porttitor malesuada. Phasellus massa ligula, hendrerit eget efficitur eget, tincidunt in ligula. Quisque mauris ligula, efficitur porttitor sodales ac, lacinia non ex. Maecenas quis nisi nunc.', 'id': '0CEPNRDV98KT3ORP', 'language': 'Hindi', 'name': 'Bhupesh Menon', 'version': 2.69}, {'bio': "My name is John Mathew. I'm an IT professional", 'id': 'f2759746-be57-4084-87bf-a92ba332eddc', 'language': 'English', 'name': 'John Mathew', 'version': 2.62}], 'origin': '54.165.60.178', 'url': 'https://httpbin.org/post'}

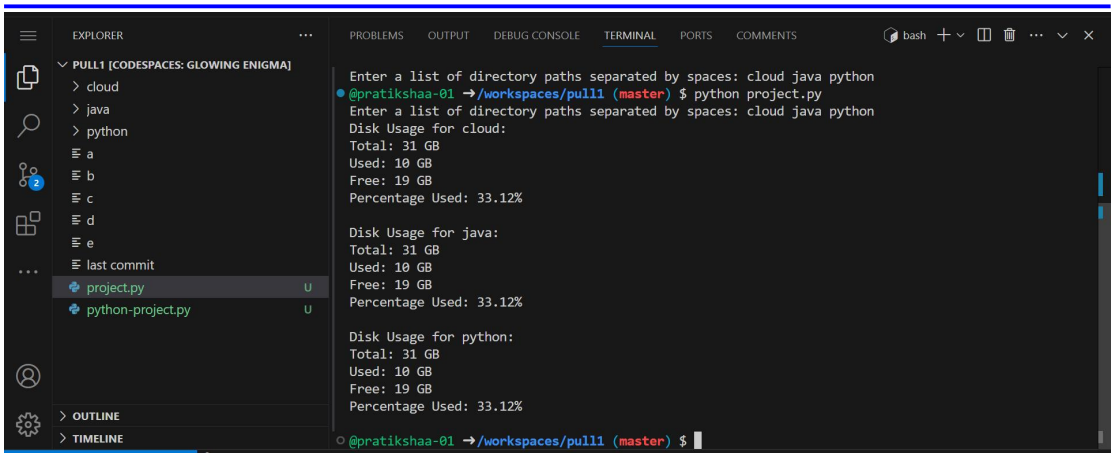
Project 2:

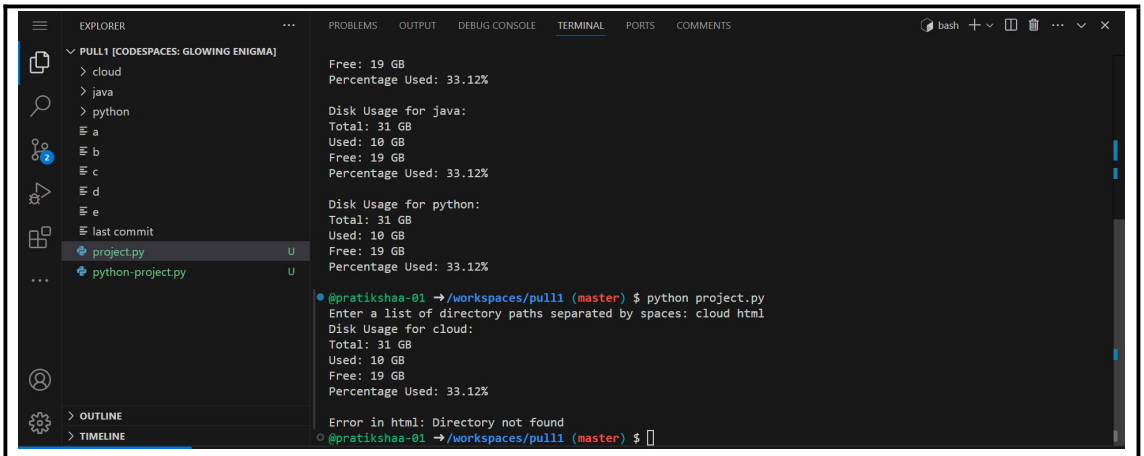
Code for Project 2:

```
from flask import Flask, request, jsonify
import random
import uuid
import requests
import sys

# Create a Flask application
app = Flask(__name__)

# Step 1: Fetch JSON data from the given URL
url = "https://whatismyip.callgoose.com/devops/devops.json"
response = requests.get(url)

# Check if the GET request was successful
if response.status_code != 200:
    print(f"Failed to fetch data from {url}, status code:
{response.status_code}")
    sys.exit(1)

# Parse the response JSON data
data = response.json()

# Step 2: Create a route to accept user inputs (name, language, bio)
# Example: /add_user?name=John&language=English&bio=Developer
@app.route('/add_user', methods=['GET'])
def add_user():
    name = request.args.get('name', default="John Mathew", type=str)
    language = request.args.get('language', default="English", type=str)
    bio = request.args.get('bio', default="My name is John Mathew. I'm an
IT professional", type=str)

    # Step 3: Generate a random ID (UUID) and version (random float)
    user_id = str(uuid.uuid4())  # Random UUID
    version = round(random.uniform(1.0, 10.0), 2)  # Random version
between 1.0 and 10.0

    # Step 4: Append the new user data to the "dummy_data" list
    new_user = {
        "name": name,
        "language": language,
        "id": user_id,
        "bio": bio,
        "version": version
    }

    # Append the new user to the existing data
```

```
    data['dummy_data'].append(new_user)

    # Step 5: Send the modified JSON data to the POST endpoint
    post_url = "https://httpbin.org/post"
    headers = {'Content-Type': 'application/json'}
    post_response = requests.post(post_url, json=data,
headers=headers)

    # Check if the POST request was successful
    if post_response.status_code != 200:
        return f"Failed to send data to {post_url}, status code:
{post_response.status_code}", 500

    # Return the JSON response
    return jsonify(post_response.json())

# Step 6: Run the Flask app
if __name__ == '__main__':
    app.run(host='0.0.0.0', port=80)
```






EXPLORER
PULL1 [CODESPACES: GLOWING ENIGMA]
cloud
java
python
a
b
c
d
e
last commit
project.py U
python-project.py U
OUTLINE
TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS
bash
Free: 19 GB
Percentage Used: 33.12%
Disk Usage for java:
Total: 31 GB
Used: 10 GB
Free: 19 GB
Percentage Used: 33.12%
Disk Usage for python:
Total: 31 GB
Used: 10 GB
Free: 19 GB
Percentage Used: 33.12%
@pratikshaa-01 ➜ /workspaces/pull1 (master) $ python project.py
Enter a list of directory paths separated by spaces: cloud html
Disk Usage for cloud:
Total: 31 GB
Used: 10 GB
Free: 19 GB
Percentage Used: 33.12%
Error in html: Directory not found
@pratikshaa-01 ➜ /workspaces/pull1 (master) $

Thank you !