

GOVERNMENT POLYTECHNIC, PUNE

**(AN AUTONOMOUS INSTITUTE OF GOVERNMENT OF
MAHARASHTRA)**



DEPARTMENT OF COMPUTER ENGINEERING

ACADEMIC YEAR 2021-22

MICROPROJECT REPORT ON

“Social Media API”

SUBMITTED BY

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UNDER THE

GUIDENCE

OF

PROF. S. A. ADE Ma'am

(COMPUTER ENGINEERING DEPARTMENT)

GOVERNMENT POLYTECHNIC, PUNE

(An Autonomous Institute of Government of Maharashtra)



CERTIFICATE

This is to certify that,

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of class Third Year (2020-21) have successfully completed
Microproject on “**SOCIAL MEDIA API**” under the guidance of
“**PROF. S.A.ADE Ma’am**” in parallel fulfillment of requirement
for the award of Diploma in Computer Engineering from
Government Polytechnic, Pune.

PROF.S.A.ADE
(Project Guide)

Dr.S.B.Nikam
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Dr.V.S.Bandal
(Principal)

ACKNOWLEDGMENT

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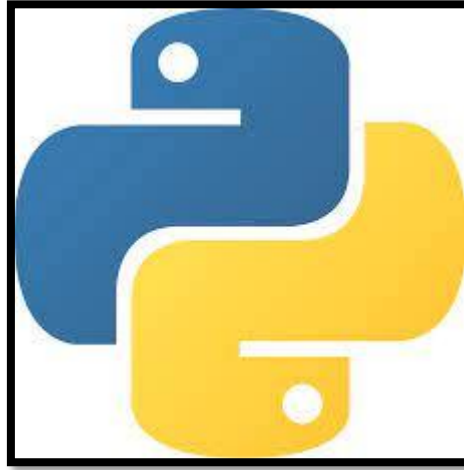
We wish to thank our parents for financing our studies and helping us throughout our life for achieving perfection and excellence. Their personal help in making this report and project worth presentation is gratefully acknowledged. Last but not the least we thank the Almighty for continuous strength we were bestowed for completion of this project.

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1) INTRODUCTION

1.1 OVERVIEW



Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built-in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's simple, easy-to-learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.

1.2 GUI APPLICATIONS IN PYTHON

What is a GUI?

A GUI or a graphical user interface is an interactive environment to take responses from users on various situations such as forms, documents, tests, etc. It provides the user with a good interactive screen than a traditional Command Line Interface (CLI).

Best Python GUI Frameworks for Developers

Focussing on perfecting the user interface is a good thing but as much important it is to offer the best possible user experience, delivering it without spending an absurdly high amount of resources on it is equally important. Python has loads of frameworks for developing GUIs, and we have gathered some of the most popular Python GUI frameworks in our list that are listed below.

1. Fastapi

FastAPI is a Web framework for developing RESTful APIs in Python. FastAPI is based on Pydantic and type hints to validate, serialize, and deserialize data, and automatically auto-generate OpenAPI documents.

1. Alembic

Alembic is a lightweight database migration **tool** for usage with the SQLAlchemy Database Toolkit for Python.

2. SQLAlchemy

SQLAlchemy is an open-source SQL toolkit and object-relational mapper for the Python programming language released under the MIT License.

3. pytest

Pytest is a software testing framework based on the Python programming language. It can be used to write various types of software tests, including unit tests, integration tests, end-to-end tests, and functional tests. Its features include parametrized testing, fixtures, and assert re-writing.

4. Libavg

5. PySimpleGui

6. PyForms

7. Wax

8. PySide2

10. PyGUI

2) FASTAPI

2.1 INTRODUCTION

FastAPI is a Web framework for developing RESTful APIs in Python. FastAPI is based on Pydantic and type hints to validate, serialize, and deserialize data, and automatically auto-generate OpenAPI documents. It fully supports asynchronous programming and can run with Uvicorn and Gunicorn.[4] To improve developer-friendliness, editor support was considered from the earliest days of the project.



2.2 ADVANTAGES AND DISADVANTAGES

Advantage:

- It embraces Python-scripting.
- Less code is needed to create amazing web-apps.
- No callbacks are needed since widgets are treated as variables.
- Data caching simplifies and speeds up computation pipelines.

Disadvantages :

- Doesn't have mapbox management portal And not having all the functionalities provided by mapbox.
- Streamlit data caching cannot keep track of changes to the data happening outside the function body. To Avoid this We need to recreate those component.
- Call Back Actions For a Map/Chart If Need perform Or to modify the other components.

3) INSTALLATION AND SETUP

Prerequisites

Before you get started, you're going to need a few things:

Your favorite IDE or text editor
Python 3.7 - Python 3.10
PIP

Streamlit requires python ≥ 3.7 version in your machine.

To install streamlit, you need to run the command below in the terminal.

```
pip install fastapi
```

You can also check the version installed on your machine with the following command.

```
pip -version  
streamlit, version 1.1.0
```


After successfully installing fastapi, you can test the library by running the command below in the terminal.

```
Uvicorn app.main --reload
```











Message hello world brother displays when request is hit on the root (/) endpoint.

```
{"message": "Hello World Brother!"}
```




FastAPI 0.1.0 OAS3
/openapi.json

Authorize 


Posts

- GET /posts/ Get Posts  
- POST /posts/ Create Posts  
- GET /posts/{id} Get Post  
- PUT /posts/{id} Update Post  
- DELETE /posts/{id} Delete Post  



Users

- POST /users/ Create User 
- GET /users/{id} Get User 


Authentication

- POST /login Login 


Vote

- POST /vote/ Vote  











default


- GET / Root 

FastAPI 0.1.0 OAS3
/openapi.json

Authorize 

Posts

- GET /posts/ Get Posts  
- POST /posts/ Create Posts  
- GET /posts/{id} Get Post  
- PUT /posts/{id} Update Post  
- DELETE /posts/{id} Delete Post  

Parameters 

4) HARDWARE AND SOFTWARE REQUIREMENTS

❖ Hardware Requirements

Processor – Core i3

Hard disk – 160 GB

Memory – 1 GB

Monitor

❖ Software Requirements

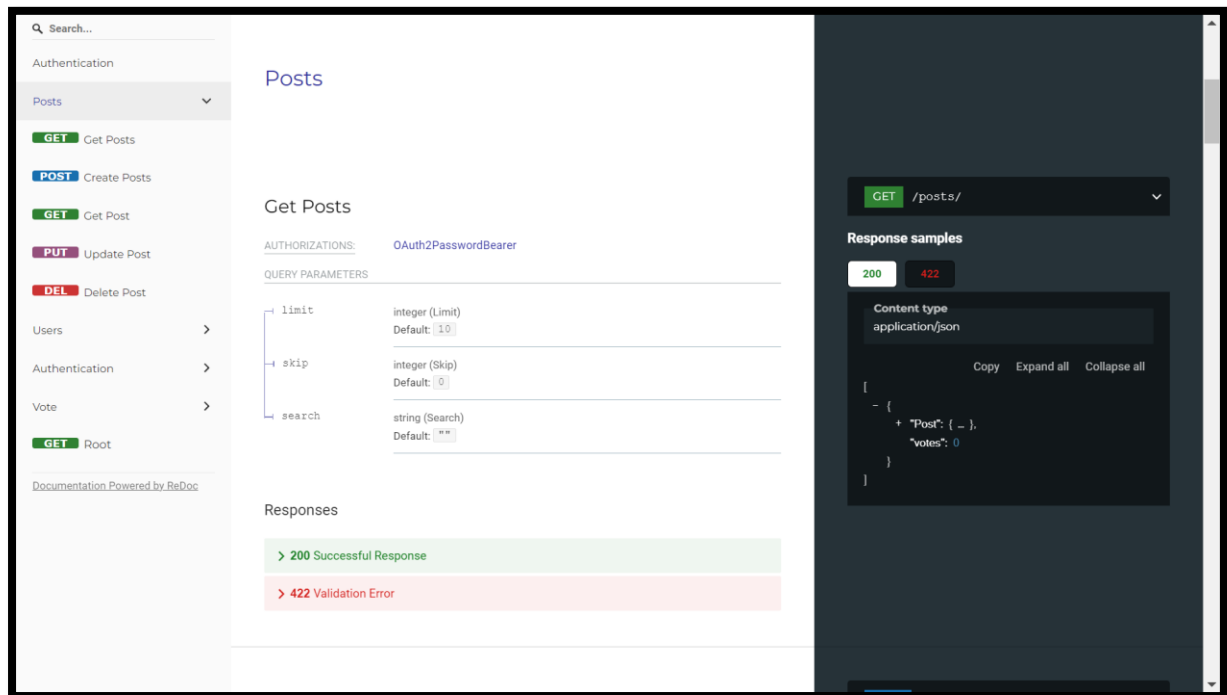
Your favourite IDE or text editor

Python 3.7 - Python 3.10

PIP

5) DESIGN AND DEVELOPMENT OF PROJECT

We will build a web app that is API of social media at the backend.



```
from fastapi import FastAPI

from fastapi.middleware.cors import CORSMiddleware

from . import models

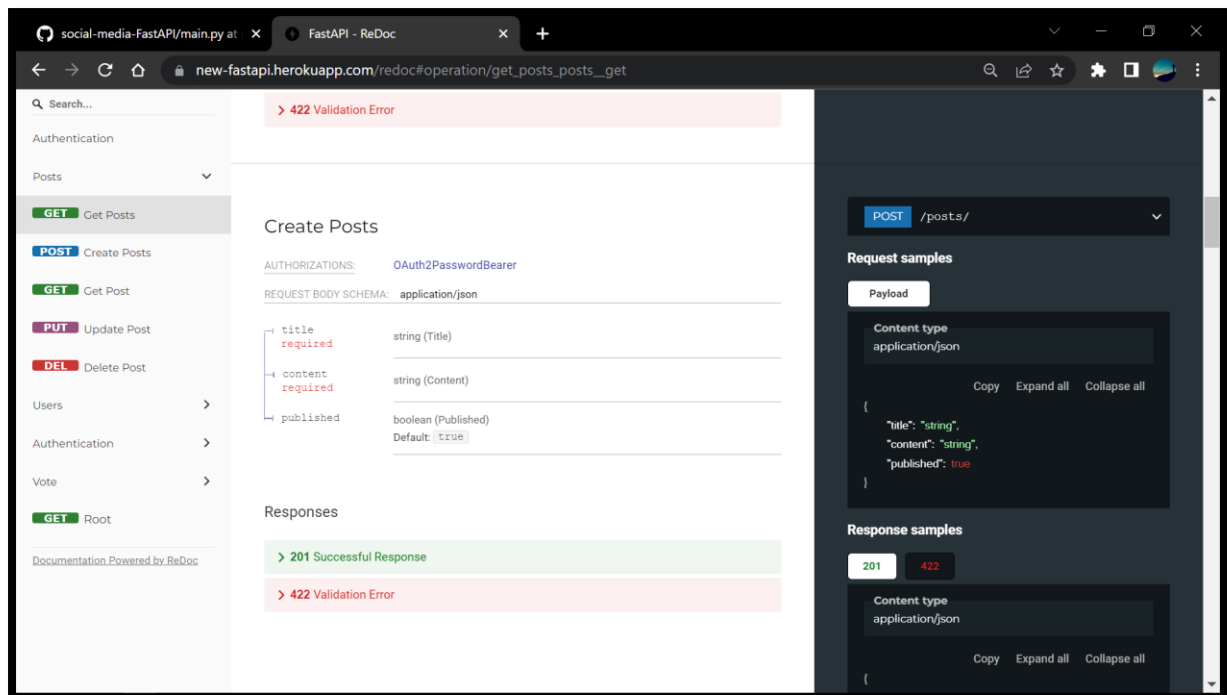
from .database import engine

from .routers import post, user, auth, vote

from .config import settings
```

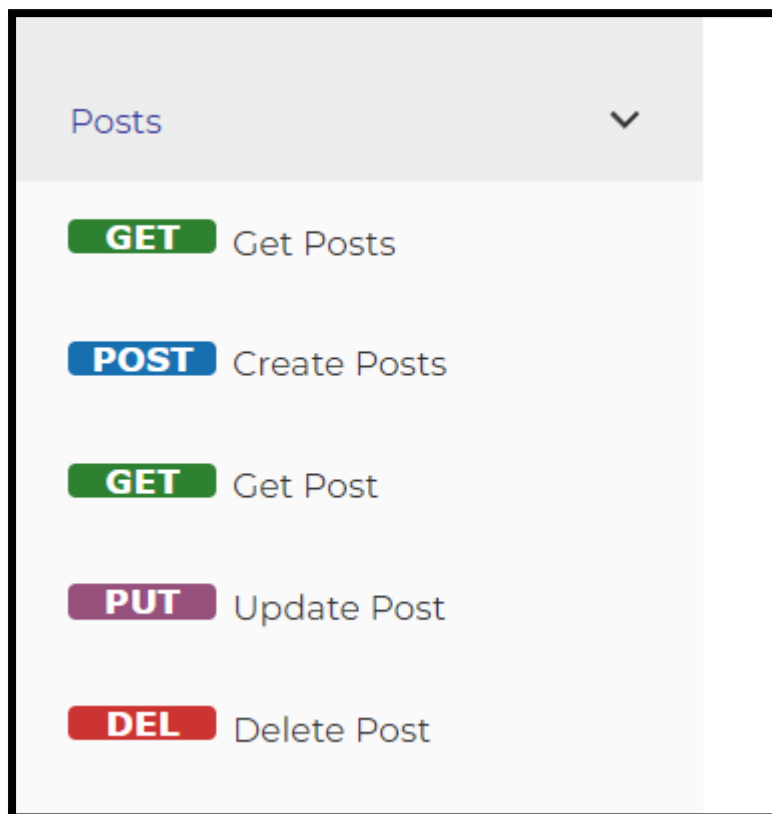
Import packages.

Define the title and the about expander.



```
#-----## Page layout (continued)## Divide page
to 3 columns (col1 = sidebar, col2 and col3 = page contents)col1 =
st.sidebarcol2, col3 = st.columns((2,1))#-----
```

Add 1 sidebar col1 , and 2-column layout(col2,col3) to the body.



Scrape data from CMC.

More option into the side bar:

Get Posts

AUTHORIZATIONS: OAuth2PasswordBearer

QUERY PARAMETERS

limit	integer (Limit) Default: <input type="text" value="10"/>
skip	integer (Skip) Default: <input type="text" value="0"/>
search	string (Search) Default: <input type="text" value=""/>

Responses

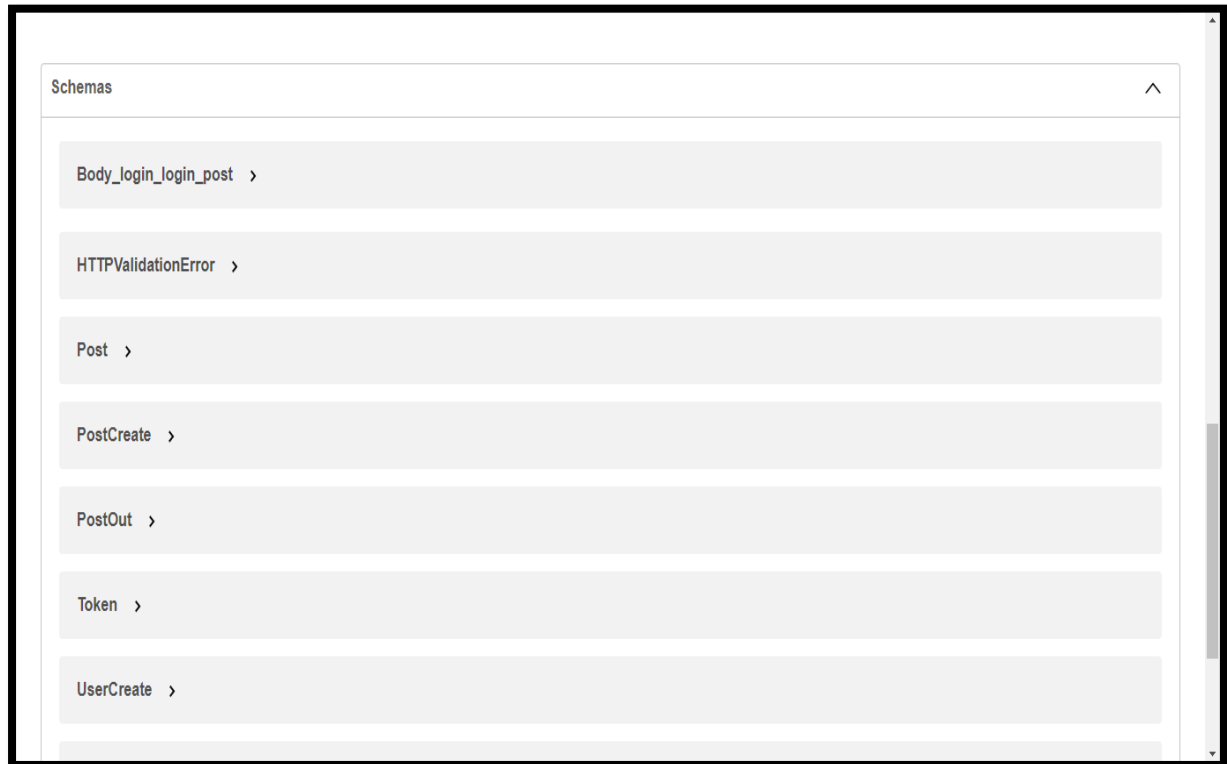
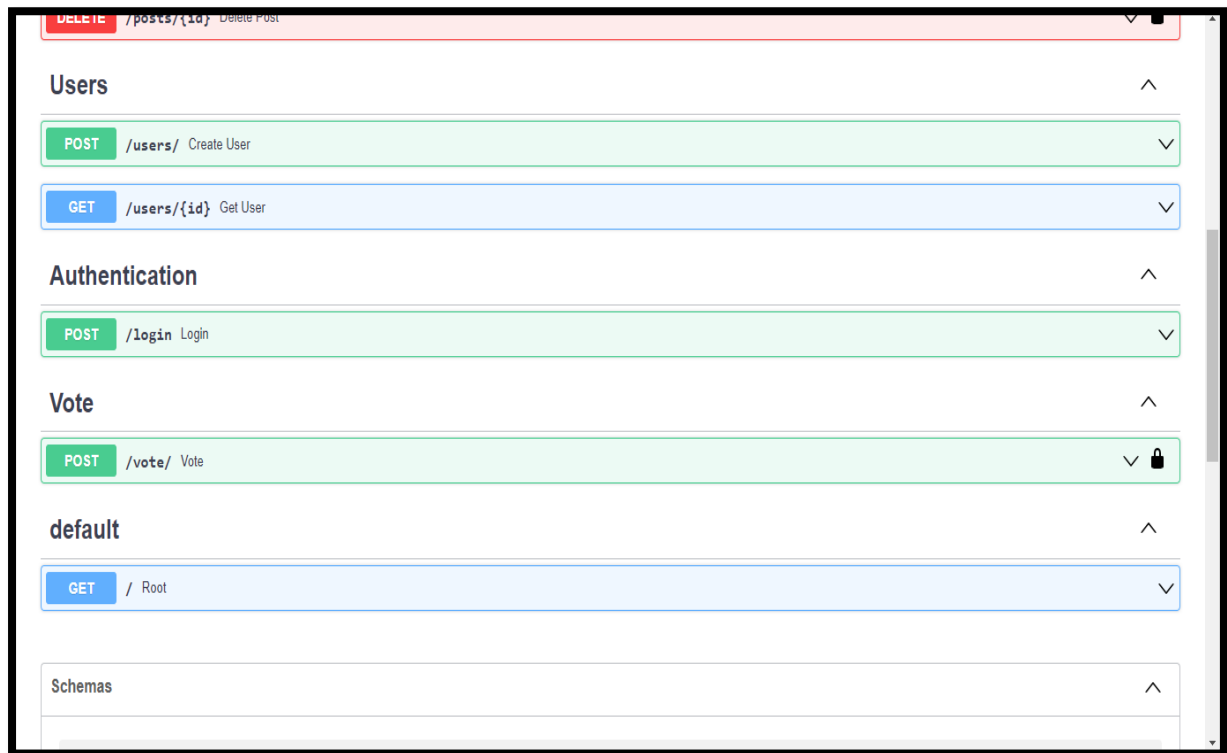
> 200 Successful Response

> 422 Validation Error

Schemas:

Schemas
Body_login_login_post >
HTTPValidationError >
Post >
PostCreate >
PostOut >
Token >
UserCreate >
UserOut >

Some Snnipets of the Project:



DELETE

/posts/{id} Delete Post

⌵ 🔒

Users

POST

/users/ Create User

⌵

Parameters

No parameters

Request body required

application/json

```
{
  "email": "shetevinay8314@gmail.com",
  "password": "vinayak123"
}
```

Execute

Clear

Parameters

Cancel

Name	Description
id * <small>required</small>	
integer	
(path)	

3

Execute

Clear

Responses

Curl

```
curl -X 'GET' \
  'https://new-fastapi.herokuapp.com/posts/3' \
  -H 'accept: application/json' \
  -H 'Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1c2VyX2lkIjo2LjEhHAi0jeE2NTUxNTU4NTZ9.Uj0b36A1Q6xCKv1WNr7qKmXNghiD7EauRxEIcPq0RH4'
```

Request URL

https://new-fastapi.herokuapp.com/posts/3

Server response

Code	Details
404	

Request URL
`https://new-fastapi.herokuapp.com/posts/3`

Server response

Code	Details
404	Error: Not Found

Response body

```
{
  "detail": "post with id: 3 was not found"
}
```

Response headers

```
connection: keep-alive
content-length: 42
content-type: application/json
date: Mon, 13 Jun 2022 09:32:21 GMT
server: uvicorn
via: 1.1 vegur
```

Responses

Code	Description	Links
200	Successful Response	No links

Media type
application/json

Controls Accept header.

Posts

GET /posts/ Get Posts

POST /posts/ Create Posts

Parameters

No parameters

Request body required

application/json

```
{
  "title": "Microproject Submission",
  "content": "We have to submit it by today",
  "published": true
}
```

Execute Clear

6) FUTURE SCOPE

Python programming language, to be the most promising career in technologies, industry. Opportunities in the career of python are increasing tremendously in the world. Since Python has simple codes, faster readability capacity, significant companies are in demand in python language. Python to be an excellent tool in designing progressive ideas. Candidates interested in python increases every day.

Today, companies both in India, our lookout for a skilled python developer for their companies. Knowing python language gives a competitive advantage when compared to other words. Indian IT companies established around 2 lakh jobs in 2018, still expecting more developers in python for their company. Python language becomes more trending since it is implemented in upcoming technologies such as artificial intelligence, machine learning.

Application Programming Interfaces, known colloquially as APIs, are simply mechanisms that enable communication between two or more pieces of software. More specifically, they are a collection of rules that govern who may access the information it holds, as well as what information that person may access.

Up until recently, the only way that software developers interacted with APIs was via commands issued to the API. However, as with everything else in the technology field, APIs are evolving, and not only will we see developers interacting with APIs differently, we'll see different uses for APIs as well.

7) CONCLUSION

FastAPI is a modern, fast (high-performance), web framework for building APIs with Python 3.6+ based on standard. In just a few minutes you can build and deploy powerful data apps. fastapi library includes our Get started guide, API reference, and more advanced features of the core library including caching, theming, and fastapi Components.

Fastapi Cloud empowers your data team to directly serve the needs of the rest of the company. Quickly go from data to app, from prototype to production. Share apps in one click and collaborate instantly with live code updates.

8) REFERENCES

<https://www.python.org/>

<https://fastapi.tiangolo.com/>

THANK YOU!!