

CS550 - Machine Learning and Business Intelligence



OpenAI

OpenAI -Project

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Introduction

The **OpenAI API** can be applied to virtually any task that involves understanding or generating natural language, code, or images. We offer a spectrum of models with different levels of power suitable for different tasks, as well as the ability to fine-tune your own custom models. These models can be used for everything from content generation to semantic search and classification.



Theory

OpenAI has trained cutting-edge language models that are very good at understanding and generating text. Our API provides access to these models and can be used to solve virtually any task that involves processing language.

In this quickstart tutorial, you'll build a simple sample application. Along the way, you'll learn key concepts and techniques that are fundamental to using the API for any task, including:

- Content generation

- Summarization

- Classification, categorization, and sentiment analysis

- Data extraction

- Translation

- Many more!

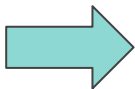


Implementation

Environment : Ubuntu

Programming Language: Python

Libraries

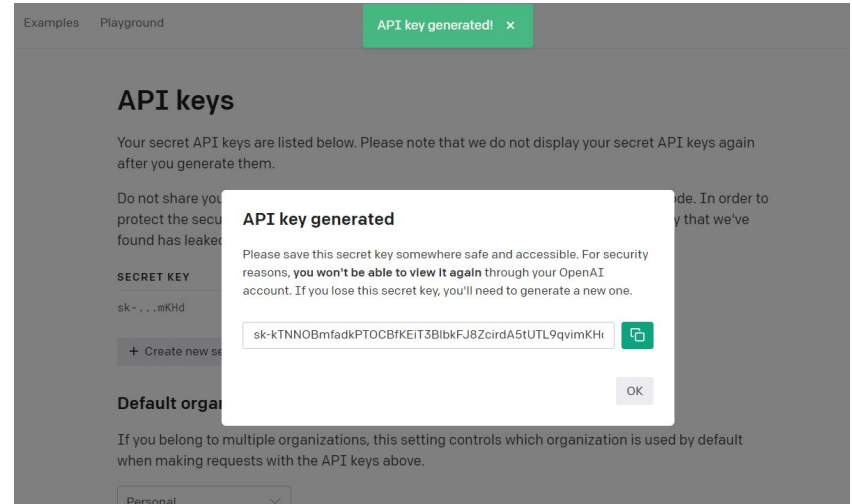


```
import os
import openai
from flask import Flask, redirect,
render_template, request, url_for
```

Implementation

Project 1: This project is a website like Chat GPT that assist the user by answering questions that are related to Book Recommendation.



Step1: Generate secret key, which would be used later in our code





Implementation

Step2: Writing our scenario or what our website wants to do

 Help M Personal 



Playground Save View code Share ...






You are an AI assistant that is an expert in Book Recommendation.
You know about types of books, authors, multiple genres, and New Releases.
You can Customized Recommendations and Compare books.
If you cannot answer a question, please respond with the phrase, "I'm just a simple Book Recommendation Assistant; I can't help with that."
Do not use any external URLs in your answers. Do not refer to any blogs in your answers.
Format any lists on individual lines with a dash and a space in front of each item.

Q: What are some good books for teens?

A: Here are some good books for teens:

- The Hunger Games by Suzanne Collins
- The Fault in Our Stars by John Green
- To Kill a Mockingbird by Harper Lee
- The Outsiders by S.E. Hinton
- The Perks of Being a Wallflower by Stephen Chbosky
- Harry Potter and the Sorcerer's Stone by J.K. Rowling

 Looking for ChatGPT? [Try it now](#) 

Submit      270

Implementation

Step3: After we have submitted the scenario, we can view the code.

View code

You can use the following code to start integrating your current prompt and settings into your application.

POST /v1/completions

python  Copy

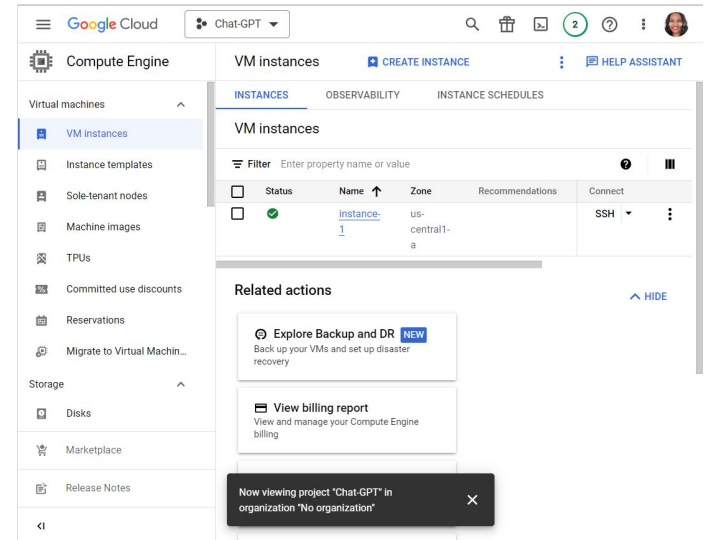
```
1 import os
2 import openai
3
4 openai.api_key = os.getenv("OPENAI_API_KEY")
5
6 response = openai.Completion.create(
7     model="text-davinci-003",
8     prompt="You are an AI assistant that is an expert in Book Recommendations",
9     temperature=0.7,
10    max_tokens=256,
11    top_p=1,
12    frequency_penalty=0,
13    presence_penalty=0
14 )
```

Your API Key can be found [here](#). You should use environment variables or a secret management tool to expose your key to your applications.

Close

Implementation

Step4: Now we can run our code in our Linux virtual environment.

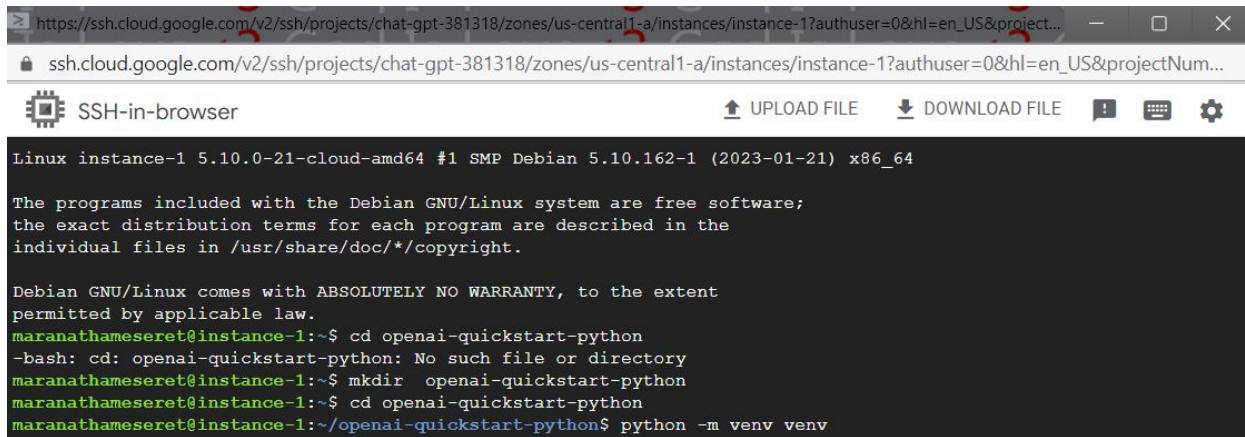


The screenshot displays the Google Cloud Platform console interface. The top navigation bar includes the Google Cloud logo, a project selector set to 'Chat-GPT', and various utility icons. The left-hand navigation menu is expanded, showing the 'Compute Engine' section with 'VM instances' selected. The main content area is titled 'VM instances' and includes tabs for 'INSTANCES', 'OBSERVABILITY', and 'INSTANCE SCHEDULES'. A table lists the VM instances, with one instance named 'instance-1' visible. Below the table, there are 'Related actions' such as 'Explore Backup and DR' and 'View billing report'. A dark notification banner at the bottom states: 'Now viewing project "Chat-GPT" in organization "No organization"'.

Status	Name	Zone	Recommendations	Connect
	instance-1	us-central1-a		SSH

Implementation

Step5: Now we run our code in SSH.



The screenshot shows a web browser window with the address bar displaying a Google Cloud SSH URL. The browser tab is titled "SSH-in-browser". The main content area is a terminal window with a black background and white text. The terminal output shows the Linux version and architecture, followed by the Debian GNU/Linux system's free software notice. The user, maranathameseret, attempts to run 'cd openai-quickstart-python' but receives an error because the directory does not exist. They then create the directory with 'mkdir openai-quickstart-python' and attempt to run 'cd openai-quickstart-python' again. Finally, they run 'python -m venv venv' to create a virtual environment.

```
Linux instance-1 5.10.0-21-cloud-amd64 #1 SMP Debian 5.10.162-1 (2023-01-21) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
maranathameseret@instance-1:~$ cd openai-quickstart-python
-bash: cd: openai-quickstart-python: No such file or directory
maranathameseret@instance-1:~$ mkdir openai-quickstart-python
maranathameseret@instance-1:~$ cd openai-quickstart-python
maranathameseret@instance-1:~/openai-quickstart-python$ python -m venv venv
```



Implementation

Step6: Create project directory

```
cd openai-quickstart-python
```

Step7: Create a new virtual environment.

```
python -m venv venv  
. venv/bin/activate
```

Step8: Install the requirements

```
pip install -r requirements.txt
```



Implementation

Step9: Make a copy of the example environment variables file

```
cp .env.example .env
```

Step 10: Add your API key to the newly created .env file



SSH-in-browser

```
OPENAI_API_KEY=sk-Wmjdz7xwiEzAFZSKcGpJT3B1bkFJK10VzbmpoIqlh9avNK69
```

```
~  
~  
~  
~  
~  
~  
~  
~  
~
```



Implementation

Step11: Run the code

```
...
How can I help you?: Recommend me a Book
Here your answer: Sure, what type of book are you in the mood for? Fiction, non-fiction, mystery, romance, sci-fi, fantasy, biography, or something else?
How can I help you?: Fantasy
Here your answer: Great! Here are three fantasy books that you might enjoy:

1. "The Name of the Wind" by Patrick Rothfuss - A fantasy novel about a young man named Kvothe who grows up to be a legendary wizard.

2. "The Way of Kings" by Brandon Sanderson - The first book in the Stormlight Archive series, which is set in a world where storms are frequent and magical powers are granted by certain gemstones.

3. "The Lord of the Rings" by J.R.R. Tolkien - A classic trilogy about hobbits, elves, dwarves, and humans coming together to defeat the evil Sauron and his armies.

Let me know if any of these sound interesting!
How can I help you?: Best selling Books
Here your answer: Here are some best-selling books of all time across different genres:

1. "Don Quixote" by Miguel de Cervantes - A classic novel about a man who sets out to revive chivalry and becomes a knight-errant.

2. "A Tale of Two Cities" by Charles Dickens - A historical novel set in the time of the French Revolution, and explores themes of love, sacrifice, and redemption.

3. "The Little Prince" by Antoine de Saint-Exupéry - A children's novella that tells the story of a young prince who travels the universe and learns important life lessons.

4. "The Lord of the Rings" by J.R.R. Tolkien - A trilogy of fantasy books about hobbits, elves, dwarves, and humans coming together to defeat the evil Sauron and his armies.

5. "The Da Vinci Code" by Dan Brown - A thriller novel that follows the story of symbologist Robert Langdon as he tries to solve a murder mystery related to the Holy Grail.

6. "Harry Potter and the Philosopher's Stone" by J.K. Rowling - The first book in the Harry Potter series, which tells the story of a young orphan who discovers he is a wizard and is sent
```



Implementation

Project 2: This project is a website that generates animals' names based on their breed. The implementation is as follows:

Step1: Create the working directory

```
mkdir quickstart_python; cd quickstart_python
```

Step2: Create the working directory

```
git clone https://github.com/openai/openai-quickstart-python.git
```



Implementation

Step3: Add your API key

```
cd openai-quickstart-python
```

```
cp .env.example .env
```

```
vi .env
```

Step4: vi Run

```
python3 -m venv venv
```

```
. venv/bin/activate
```

```
pip install -r requirements.txt
```

```
flask run
```



Implementation

Step5:chmod 755 run

Step6: run

```
.....
Successfully built openai

Installing collected packages: six, urllib3, pytz, python-dateutil,
numpy, MarkupSafe, idna, et-xmlfile, charset-normalizer, certifi,
Werkzeug, tqdm, toml, requests, pycodestyle, pandas-stubs, pandas,
openpyxl, Jinja2, itsdangerous, click, python-dotenv, openai, Flask, autopep8
Successfully installed Flask-2.0.2 Jinja2-3.0.2 MarkupSafe-2.0.1
Werkzeug-2.0.2 autopep8-1.6.0 certifi-2021.10.8 charset-normalizer-2.0.7
click-8.0.3 et-xmlfile-1.1.0 idna-3.3 itsdangerous-2.0.1 numpy-1.21.3
openai-0.19.0 openpyxl-3.0.9 pandas-1.3.4 pandas-stubs-1.2.0.35
pycodestyle-2.8.0 python-dateutil-2.8.2 python-dotenv-0.19.2
pytz-2021.3 requests-2.26.0 six-1.16.0 toml-0.10.2 tqdm-4.62.3 urllib3-1.26.7

WARNING: You are using pip version 21.1.1; however, version 23.0.1 is available.
You should consider upgrading via the '/mnt/d/src/train/java/java/course/
machine_learning/chatgpt/quickstart_python/openai-quickstart-python/
venv/bin/python3 -m pip install --upgrade pip' command.
* Serving Flask app 'app' (lazy loading)
* Environment: development
* Debug mode: on
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 132-712-446
127.0.0.1 - - [25/Feb/2023 09:19:23] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [25/Feb/2023 09:19:24] "GET /static/dog.png HTTP/1.1" 200 -
127.0.0.1 - - [25/Feb/2023 09:19:24] "GET /static/main.css HTTP/1.1" 200 -
127.0.0.1 - - [25/Feb/2023 09:19:25] "GET /static/dog.png HTTP/1.1" 304 -
```




Implementation

Step7: Running it from the browser



Name my pet

Generate names



Conclusion

Overall, OpenAI is an innovative and forward-thinking organization that is making significant contributions to the development of AI. Their work has the potential to improve many aspects of our lives, and they are dedicated to doing so in a responsible and beneficial way.

This project aims also to develop a website or an application that uses openai API that can improve customer support service regarding book recommendation. Further development can be implemented by developing a user interface design and modifying the code as needed.



References

- `openai-quickstart-python/app.py` at master · openai/openai-quickstart-python. (n.d.). GitHub. Retrieved March 21, 2023, from <https://github.com/openai/openai-quickstart-python/blob/master/app.py>
- Introduction - OpenAI API. (n.d.). Beta.OpenAI.Com. Retrieved March 21, 2023, from <https://platform.openai.com/docs/introduction>