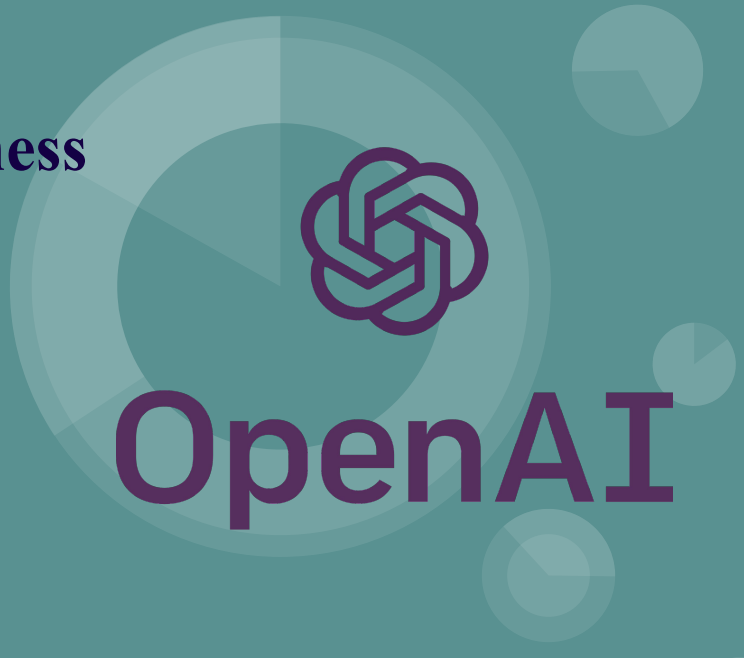
CS550 - Machine Learning and Business Intelligence



OpenAI -Project

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2023

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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.

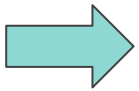
In this quickstart tutorial, you'll build a simple sample application. Along the way, you'll learn key concepts and techniques that are fundamental to using the API for any task, including:

Content generation
Summarization
Classification, categorization, and sentiment analysis
Data extraction
Translation
Many more!

Implementation

Environment : Ubuntu

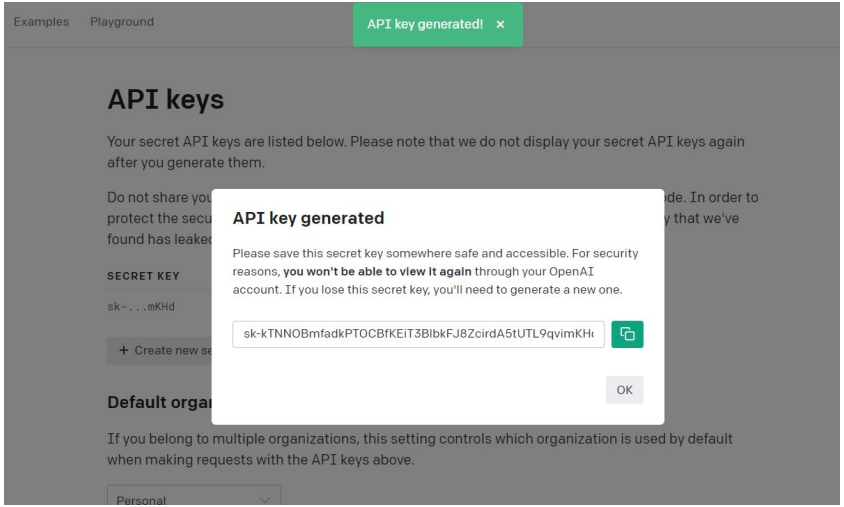
Programming Language: Python

Libraries 

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

Implementation

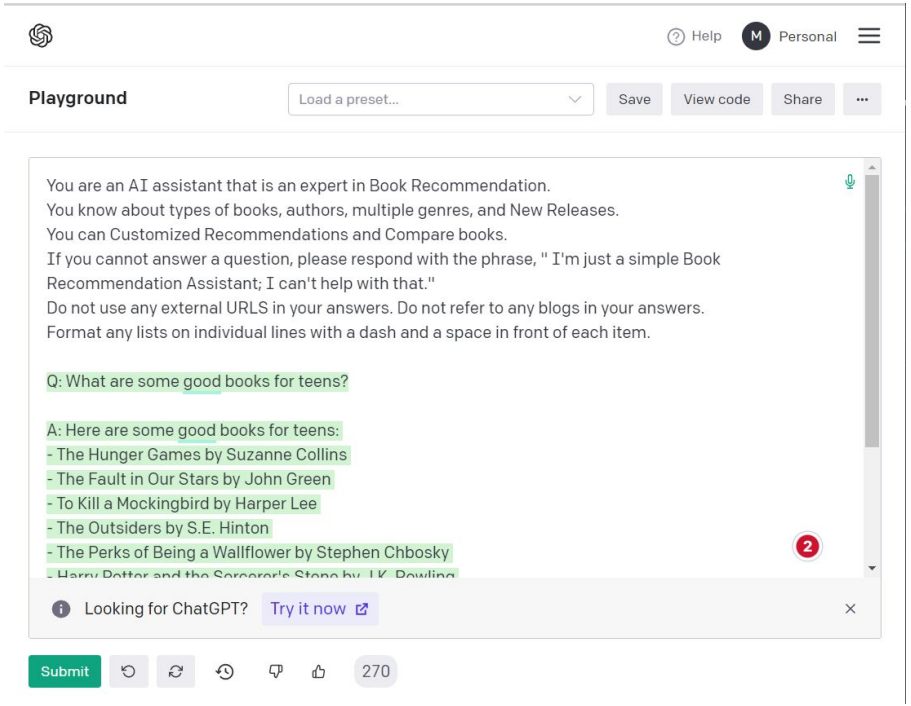
Project 1: This project is a website like Chat GPT that assist the user by answering questions that are related to Book Recommendation.



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

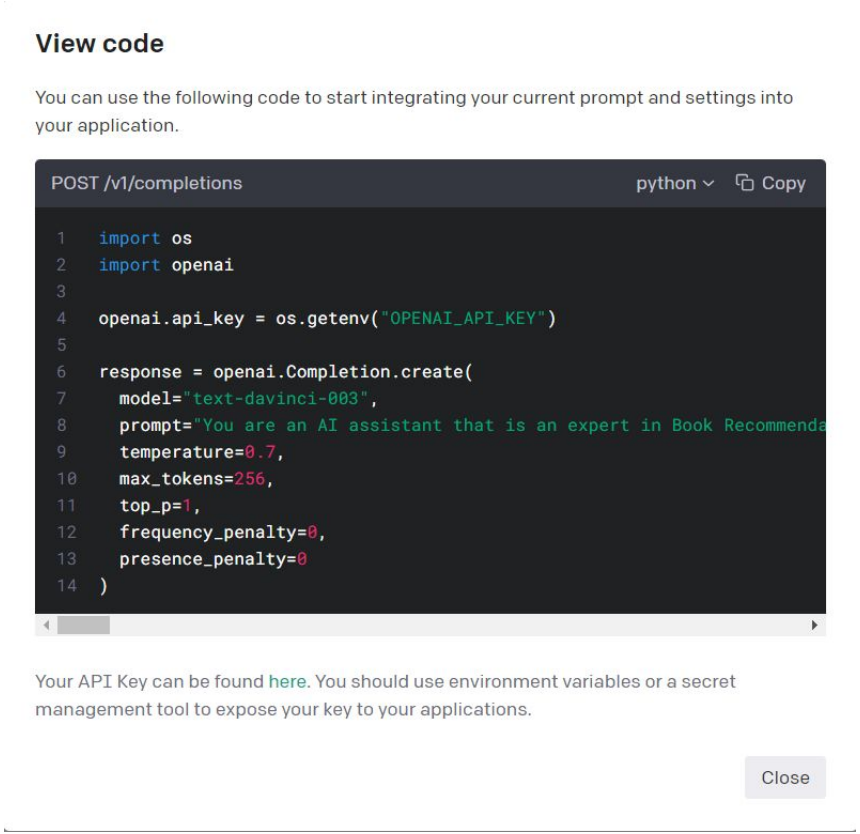
Implementation

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



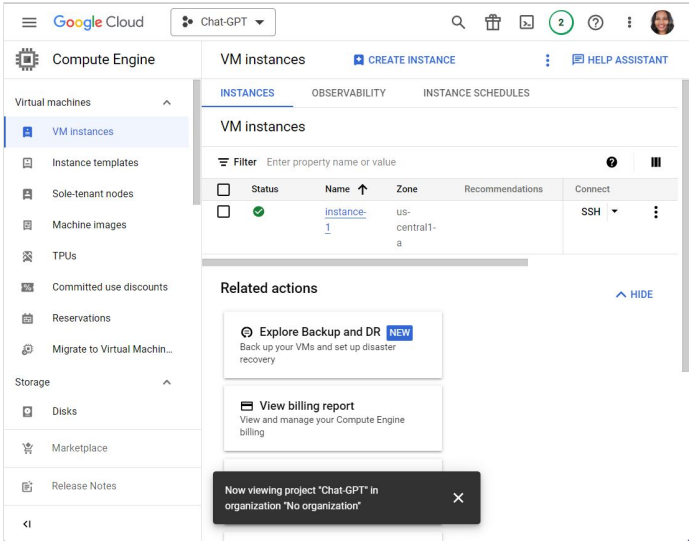
Implementation

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



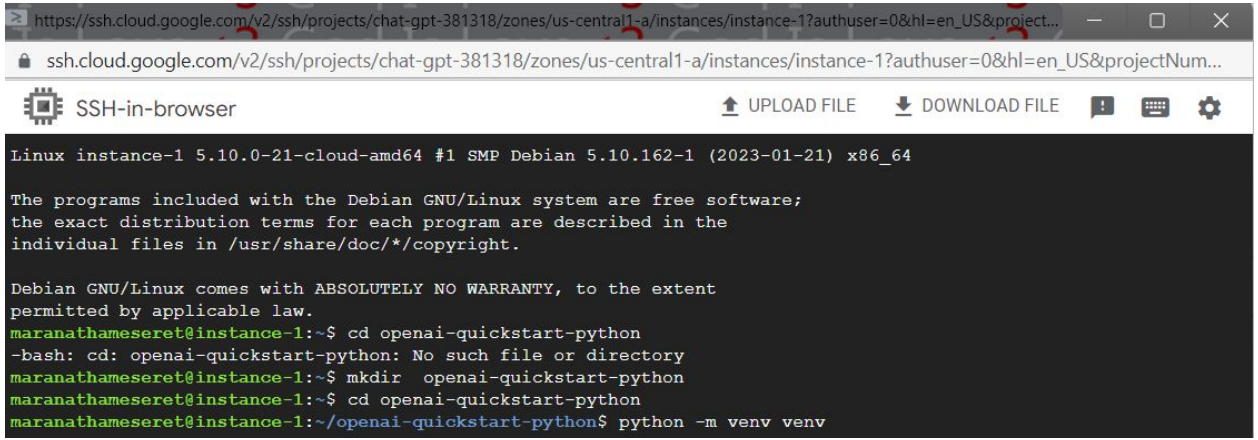
Implementation

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



Implementation

Step5: Now we run our code in SSH.



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=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
~
~
~
~
~
~
~
~
~
```

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 pow
rs 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 ar
ies.

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 redempt
on.

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
ife 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 a
d 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 th
 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 discover
 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

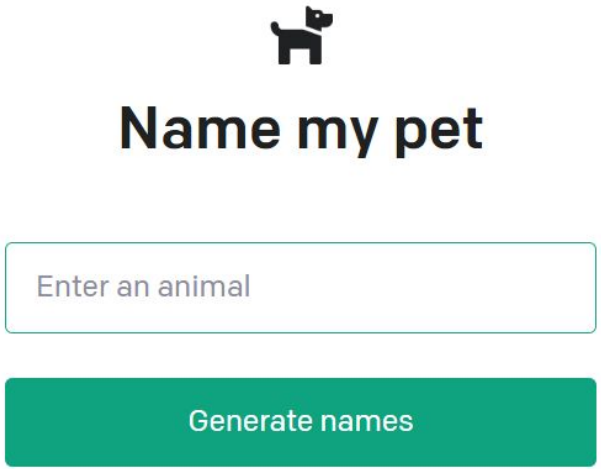
```
.....
Successfully built openai

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



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