

ChatGPT project : Customer Support System

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Step 1.1: Command Line Solution

- Please follow this [OpenAI document - Website Q&A with Embeddings](#) to build an AI that can answer questions about a website.
 - Step 1.1.1 : Make it work on **Jupyter Notebook**
 - After this step, asking ChatGPT questions about the website will be **hardcoded** in Python programs running on **Jupyter Notebook**.
 - Step 1.1.2 : Make it work on **your local machine**.
 - Export the Python code from **Jupyter Notebook** and prove that it also works on your local machine, which is the final "Command Line Solution".

Step 1.1.2 : Make it work on your local machine.

First, read the instructions on [Web Q&A - OpenAI API](#) and download [web-qa.ipynb](#) from the GitHub files of the project.

A good way to avoid any issues is to set up a new virtual environment and install the required packages by running the following commands:

```
1 python -m venv env
2
3 source env/bin/activate
4
5 pip install -r requirements.txt
```

```
PS D:\VS CODE\Python\CS589\web-crawl-q-and-a-example-main> .\env\Scripts\Activate
(env) PS D:\VS CODE\Python\CS589\web-crawl-q-and-a-example-main> |
```

Step 1.1.2 (cont)

Some problems may happen when we try to set up virtual environments, if that arises, download the python3.10-venv module with this command:

```
koiisme@DESKTOP-LVBMC2V:~/web-crawl-q-and-a-example$ python3 -m venv env
The virtual environment was not created successfully because ensurepip is not
available. On Debian/Ubuntu systems, you need to install the python3-venv
package using the following command.

    apt install python3.10-venv




You may need to use sudo with that command. After installing the python3-venv
package, recreate your virtual environment.

Failing command: /home/koiisme/web-crawl-q-and-a-example/env/bin/python3

koiisme@DESKTOP-LVBMC2V:~/web-crawl-q-and-a-example$ sudo apt install python3.10-venv
[sudo] password for koiisme:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  python3.10-venv
0 upgraded, 1 newly installed, 0 to remove and 23 not upgraded.
Need to get 5716 B of archives.
After this operation, 28.7 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 python3.10-venv amd64 3.10.12-1~22.04.3 [5716 B]
Fetched 5716 B in 1s (8788 B/s)
Selecting previously unselected package python3.10-venv.
Reading database ...
```

Step 1.1.2

Then, we can continue the step

```
koiisme@DESKTOP-LVBMC2V:~/web-crawl-q-and-a-example$ python3 -m venv env
koiisme@DESKTOP-LVBMC2V:~/web-crawl-q-and-a-example$ source env/bin/activate
(env) koiisme@DESKTOP-LVBMC2V:~/web-crawl-q-and-a-example$ pip install -r requirements.txt
Collecting aiohttp==3.8.5
  Downloading aiohttp-3.8.5-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.0 MB)
     1.0/1.0 MB 2.8 MB/s eta 0:00:00
Collecting aiosignal==1.3.1
  Downloading aiosignal-1.3.1-py3-none-any.whl (7.6 kB)
Collecting appnope==0.1.3
  Downloading appnope-0.1.3-py2.py3-none-any.whl (4.4 kB)
Collecting asttokens==2.2.1
  Downloading asttokens-2.2.1-py2.py3-none-any.whl (26 kB)
Collecting async-timeout==4.0.2
  Downloading async_timeout-4.0.2-py3-none-any.whl (5.8 kB)
Collecting attrs==22.2.0
  Downloading attrs-22.2.0-py3-none-any.whl (60 kB)
     60.0/60.0 KB 2.8 MB/s eta 0:00:00
Collecting backcall==0.2.0
  Downloading backcall-0.2.0-py2.py3-none-any.whl (11 kB)
Collecting beautifulsoup4==4.11.1
  Downloading beautifulsoup4-4.11.1-py3-none-any.whl (128 kB)
     128.2/128.2 KB 2.9 MB/s eta 0:00:00
Collecting blobfile==2.0.1
```

Step 1.1.2 (cont)

Clone the code from GitHub

```
koiisme@DESKTOP-LVBM2V:~$ git clone https://github.com/openai/web-crawl-q-and-a-example.git
Cloning into 'web-crawl-q-and-a-example'...
remote: Enumerating objects: 78, done.
remote: Counting objects: 100% (17/17), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 78 (delta 14), reused 12 (delta 12), pack-reused 61
Receiving objects: 100% (78/78), 43.08 KiB | 801.00 KiB/s, done.
Resolving deltas: 100% (41/41), done.
```

Step 1.1.2 (cont)

Run `web_qa.py`, we probably get the error below:

```
File "/home/koiisme/web-crawl-q-and-a-example/env/lib/python3.10/site-packages/openai/api_requestor.py", line 131, in __init__
    self.api_key = key or util.default_api_key()
```

```
File "/home/koiisme/web-crawl-q-and-a-example/env/lib/python3.10/site-packages/openai/util.py", line 186, in default_api_key
    raise openai.error.AuthenticationError(
```

```
openai.error.AuthenticationError: No API key provided. You can set your API key in code using 'openai.api_key = <API-KEY>', or you can set the environment variable OPENAI_API_KEY=<API-KEY>. If your API key is stored in a file, you can point the openai module at it with 'openai.api_key_path = <PATH>'. You can generate API keys in the OpenAI web interface. See https://onboard.openai.com for details, or email support@openai.com if you have any questions.
```

The error exists because we didn't put in our OpenAI API key yet for the authentication step.

Step 1.1.2 (cont)

For that issue, we just have to uncomment the line and add our OpenAI API key:

```
# Regex pattern to match a URL
HTTP_URL_PATTERN = r'^http[s]{0,1}://.+$'

# Define OpenAI api_key
# openai.api_key = '<Your API Key>'
```


Step 1.1.2 (cont)

Run again and we get the issue:

```
File "/home/koiisme/web-crawl-q-and-a-example/env/lib/python3.10/site-packages/openai/api_requestor.py", line 227, in request
    resp, got_stream = self._interpret_response(result, stream)
File "/home/koiisme/web-crawl-q-and-a-example/env/lib/python3.10/site-packages/openai/api_requestor.py", line 620, in _interpret_response
    self._interpret_response_line(
File "/home/koiisme/web-crawl-q-and-a-example/env/lib/python3.10/site-packages/openai/api_requestor.py", line 680, in _interpret_response_line
    raise self.handle_error_response(
openai.error.RateLimitError: You exceeded your current quota, please check your plan and billing details. For more information on this error, read the docs: https://platform.openai.com/docs/guides/error-codes/api-errors.
(env) koiisme@DESKTOP-LV BMC2V:~/web-crawl-q-and-a-example$
```

This happens because we are using the free version of OpenAI, we need to add the payment method.

Step 1.1.2 (cont)


We have a new issue:

```
File "D:\VS CODE\Python\CS589\web-crawl-q-and-a-example-main\env\lib\site-packages\pandas\core\series.py", line 4771, in apply
    return SeriesApply(self, func, convert_dtype, args, kwargs).apply()
"error": {
  "message": "The server had an error while processing your request. Sorry about that! You can retry your request, or contact us through our help center at help.openai.com if the error persists. (Please include the request ID 2e721d8252c8730f97e8d84ea3122023 in your message.)",
  "type": "server_error",
  "param": null,
  "code": null
}
}
500 {'error': {'message': 'The server had an error while processing your request. Sorry about that! You can retry your request, or contact us through our help center at help.openai.com if the error persists. (Please include the request ID 2e721d8252c8730f97e8d84ea3122023 in your message.)', 'type': 'server_error', 'param': None, 'code': None}} {'Date': 'Sat, 03 Feb 2024 21:10:36 GMT', 'Content-Type': 'application/json', 'Content-Length': '366', 'Connection': 'keep-alive', 'access-control-allow-origin': '*', 'openai-model': 'text-embedding-3-small', 'openai-organization': 'user-61ecbjtdzhzreaeu1crncyby', 'openai-processing-ms': '90013', 'openai-version': '2020-10-01', 'strict-transport-security': 'max-age=15724800; includeSubDomains', 'x-ratelimit-limit-requests': '3000', 'x-ratelimit-limit-tokens': '1000000', 'x-ratelimit-remaining-requests': '2999', 'x-ratelimit-remaining-tokens': '999590', 'x-ratelimit-reset-requests': '20ms', 'x-ratelimit-reset-tokens': '24ms', 'x-request-id': '2e721d8252c8730f97e8d84ea3122023', 'CF-Cache-Status': 'DYNAMIC', 'Server': 'cloudflare', 'CF-RAY': '84fda72ad88267ff-SJC', 'alt-svc': 'h3=":443"; ma=86400'}
(env) PS D:\VS CODE\Python\CS589\web-crawl-q-and-a-example-main> python .\web-qa.py
```

This happens because the server error (error code: 500), thus it is not our faults. All we can do is to wait and restart the Python program later.

Step 1.1.2 (cont)

We have the result:

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```
1 answer_question(df, question="What day is it?", debug=False)
```


[33]

Python

... "I don't know."

+ Code

+ Markdown

 Click here to ask Blackbox to help you code faster

```
1 answer_question(df, question="What is our newest embeddings model?")
```

[34]

Python

... 'The newest embeddings model is text-embedding-ada-002.'

Step 1.2: Web-based Solution (Python Flask webserver)

- Step 1.2.1: Study how to use [Python](#) to create a web-based interface to ChatGPT
- Step 1.2.2: Integrate the Python code created in [Step 1.1](#) and [Step 1.2.1](#) to create a web-based interface to let the users ask ChatGPT questions about the website using a browser.

Step 1.2.1: Study how to use [Python](#) to create a web-based interface to ChatGPT

Create a directory named 'quickstart_python' and clone OpenAI project from GitHub

Download the ChatGPT sample code by cloning this repository.

```
(env) koiisme@DESKTOP-LVBMC2V:~$ mkdir quickstart_python; cd quickstart_python
(env) koiisme@DESKTOP-LVBMC2V:~/quickstart_python$ git clone https://github.com/openai/openai-quickstart-python.git
Cloning into 'openai-quickstart-python'...
remote: Enumerating objects: 49, done.
remote: Total 49 (delta 0), reused 0 (delta 0), pack-reused 49
Receiving objects: 100% (49/49), 15.66 KiB | 843.00 KiB/s, done.
Resolving deltas: 100% (14/14), done.
(env) koiisme@DESKTOP-LVBMC2V:~/quickstart_python$ cd openai-quickstart-python/
(env) koiisme@DESKTOP-LVBMC2V:~/quickstart_python/openai-quickstart-python$
```

Step 1.2.1 (cont)

Add your API key

```
(env) koiisme@DESKTOP-LVBMC2V:~/quickstart_python/openai-quickstart-python$ cp .env.example .env
(env) koiisme@DESKTOP-LVBMC2V:~/quickstart_python/openai-quickstart-python$ vi .env
(env) koiisme@DESKTOP-LVBMC2V:~/quickstart_python/openai-quickstart-python$
```

```
FLASK_APP=app
FLASK_ENV=development
```

```
# Once you add your API key below, make sure to not share it with anyone! The API key should remain private.
OPENAI_API_KEY
```


Step 1.2.1

Create a file 'run'

```
GNU nano 6.2
python3 -m venv venv
. venv/bin/activate
pip install -r requirements.txt
flask run
```

```
(env) koiisme@DESKTOP-LVBMC2V:~/quickstart_python/openai-quickstart-python$ nano run
(env) koiisme@DESKTOP-LVBMC2V:~/quickstart_python/openai-quickstart-python$ chmod 755 run
(env) koiisme@DESKTOP-LVBMC2V:~/quickstart_python/openai-quickstart-python$ run
```


Step 1.2.1

Run the file 'run'

```
Building wheels for collected packages: openai
  Building wheel for openai (pyproject.toml) ... done
  Created wheel for openai: filename=openai-0.19.0-py3-none-any.whl size=53500 sha256=b647cda57a390e87450306f5b5a34a4013c8037eb4d4f5d61b4ed80f2fad6910
  Stored in directory: /home/koiisme/.cache/pip/wheels/ca/5c/0f/2e2eeef583f5b213b178cfbf881921046b259f79fb5527aa6e
Successfully built openai
Installing collected packages: pytz, pandas-stubs, certifi, Werkzeug, urllib3, tqdm, toml, six, python-dotenv, pycodestyle, numpy, MarkupSafe, itsdangerous, idna, et-xmlfile, click, charset-normalizer, requests, python-dateutil, openpyxl, Jinja2, autopep8, pandas, Flask, openai
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
* 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: 529-211-709
```

```
* 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: 529-211-709
127.0.0.1 - - [03/Feb/2024 11:35:09] "POST / HTTP/1.1" 302 -
127.0.0.1 - - [03/Feb/2024 11:35:09] "GET /?result=+Shadowpaw%2C+Meowvelous%2C+Super+Whiskers+ HTTP/1.1" 200 -
127.0.0.1 - - [03/Feb/2024 11:35:10] "GET /static/main.css HTTP/1.1" 304 -
127.0.0.1 - - [03/Feb/2024 11:35:10] "GET /static/dog.png HTTP/1.1" 304 -
127.0.0.1 - - [03/Feb/2024 11:35:10] "GET /static/dog.png HTTP/1.1" 304 -
127.0.0.1 - - [03/Feb/2024 11:35:16] "POST / HTTP/1.1" 302 -
127.0.0.1 - - [03/Feb/2024 11:35:16] "GET /?result=+Gallop+Guardian%2C+Mighty+Mustang%2C+Equine+Avenger HTTP/1.1" 200 -
127.0.0.1 - - [03/Feb/2024 11:35:16] "GET /static/main.css HTTP/1.1" 304 -
127.0.0.1 - - [03/Feb/2024 11:35:16] "GET /static/dog.png HTTP/1.1" 304 -
127.0.0.1 - - [03/Feb/2024 11:35:21] "POST / HTTP/1.1" 302 -
127.0.0.1 - - [03/Feb/2024 11:35:21] "GET /?result=+Mighty+Paws%2C+Super+Sniffer%2C+Canine+Crusader HTTP/1.1" 200 -
127.0.0.1 - - [03/Feb/2024 11:35:21] "GET /static/main.css HTTP/1.1" 304 -
127.0.0.1 - - [03/Feb/2024 11:35:21] "GET /static/dog.png HTTP/1.1" 304 -
127.0.0.1 - - [03/Feb/2024 11:35:35] "POST / HTTP/1.1" 302 -
127.0.0.1 - - [03/Feb/2024 11:35:35] "GET /?result=+Super+Scurry%2C+Mighty+Rodent%2C+Hamtaro+the+Hero HTTP/1.1" 200 -
127.0.0.1 - - [03/Feb/2024 11:35:35] "GET /static/main.css HTTP/1.1" 304 -
```



Name my pet

Generate names

Super Scurry, Mighty Rodent, Hamtaro the Hero



Name my pet

Generate names

Purrfect Avenger, Clawed Crusader, Super Whiskers



Name my pet

Generate names

Super Pup, Canine Crusader, Mighty Mutt



Name my pet

Generate names

Galloping Guardian, Mighty Mustang, Super Stallion

Step 1.2.2: Create a web-based interface to let the users ask ChatGPT questions about the website using a browser.

Step 1.2.2: Integrate the Python code created in [Step 1.1](#) and [Step 1.2.1](#) to create a web-based interface to let the users ask ChatGPT questions about the website using a browser.

◦ Note:

- There are 3 approaches for customers to use your system
 - Customers need to install your software
 - Command-based (i.e., [Step 1.1](#))
 - [GUI-based](#)
 - Customers does not need to install your software
 - Web-based (i.e., [Step 1.2.2](#))
- [Step 1.1](#) represents [command-based python code](#), [Step 1.2.1](#) represents [web-based python code](#). What we want is to move the result of [Step 1.1](#) to [Step 1.2.1](#). There are two ways to do that
 - Move the code slowly
 - You move line by line from one python code (i.e. the one that is [command-based](#)) to the target python code (i.e., the one that is [web-based](#)). If a line works, then move to another line.
 - Move the code faster
 - Comparing one python code (i.e. the one that is [command-based](#)) with the target python code (i.e., the one that is [web-based](#)) and then determine how to improve the target code to have the behavior of the command-based Python code.
 - [Hint](#)

Step 1.2.2 (cont)

Taking reference from [Python example app from the OpenAI API quickstart tutorial](#), and from the examples in [Hint](#), we have the following steps to create a Python Flask program:

- Clone the OpenAI API quickstart tutorial directory, thus we can keep the 'static' directory (which has our .css file)
- Apply the guide from Hint to create index.html and result.html in 'templates' directory
- Separate step 1-6 into crawldata.py & step 7-10 into embeddata.py
- Follow the step in README.md file of the OpenAI API quickstart to run

Step 1.2.2 (cont)

First, we need to create virtual environment (venv) and install everything needed in requirements.txt

```
$ python3 -m venv venv  
$ . venv/bin/activate  
$ pip install -r requirements.txt
```


Step 1.2.2 (cont)

Then, we follow these steps:

Make a copy of the example environment variables file:

```
~~~bash
$ cp .env.example .env
~~~
```

Add your [API key](<https://beta.openai.com/account/api-keys>) to the newly created `.env` file.

Step 1.2.2 (cont)

Crawl Data with
'python crawldata.py'

```
(venv) PS D:\VS CODE\Python\CS589\CusService_Python> python .\crawldata.py  
  
https://openai.com/  
https://openai.com/research/weak-to-strong-generalization  
https://openai.com/research?topics=safety-alignment  
Unable to parse page https://openai.com/research?topics=safety-alignment  
https://openai.com/research?topics=image-generation  
Unable to parse page https://openai.com/research?topics=image-generation  
https://openai.com/research/forecasting-misuse  
https://openai.com/research?contentType=publication  
Unable to parse page https://openai.com/research?contentType=publication  
https://openai.com/research/forecasting-misuse#content  
https://openai.com/research/whisper  
https://openai.com/research/whisper#content  
https://openai.com/research?models=whisper  
Unable to parse page https://openai.com/research?models=whisper  
https://openai.com/research?contentType=release  
Unable to parse page https://openai.com/research?contentType=release  
https://openai.com/research?contentType=milestone  
Unable to parse page https://openai.com/research?contentType=milestone  
https://openai.com/research?topics=language  
Unable to parse page https://openai.com/research?topics=language  
https://openai.com/research/confidence-building-measures-for-artificial-in  
telligence
```

Step 1.2.2 (cont)

Then, run 'python embeddata.py'.

Sometimes, if the server error appears (code: 5xx), we just have to wait and try again.

One possible way to prevent this will be mentioned later in the slides.

```
"error": {  
  "message": "The server had an error while processing your request. Sorry about that!  
  You can retry your request, or contact our help center at help.openai.com if  
  the error persists. (Please include the request ID 3c7808c41303ddeb9579d6fa5e27b247 in  
  your message.)",  
  "type": "server_error",  
  "param": null,  
  "code": null  
}  
}  
500 {'error': {'message': 'The server had an error while processing your request. Sorry  
about that! You can retry your request, or contact us through our help center at help.o  
penai.com if the error persists. (Please include the request ID 3c7808c41303ddeb9579d6fa  
5e27b247 in your message.)', 'type': 'server_error', 'param': None, 'code': None}} {'Dat  
e': 'Sun, 04 Feb 2024 11:16:42 GMT', 'Content-Type': 'application/json', 'Content-Length  
' : '366', 'Connection': 'keep-alive', 'access-control-allow-origin': '*', 'openai-model'  
: 'text-embedding-3-small', 'openai-organization': 'user-61ecbjtdzhzreaeu1crncyby', 'ope  
nai-processing-ms': '90012', 'openai-version': '2020-10-01', 'strict-transport-security'  
: 'max-age=15724800; includeSubDomains', 'x-ratelimit-limit-requests': '3000', 'x-rateli  
mit-limit-tokens': '1000000', 'x-ratelimit-remaining-requests': '2999', 'x-ratelimit-rem  
aining-tokens': '999436', 'x-ratelimit-reset-requests': '20ms', 'x-ratelimit-reset-token  
s': '33ms', 'x-request-id': '3c7808c41303ddeb9579d6fa5e27b247', 'CF-Cache-Status': 'DYNA  
MIC', 'Server': 'cloudflare', 'CF-RAY': '85027e92df8a9e65-SJC', 'alt-svc': 'h3=":443"; m  
a=86400'}  
o (venv) PS D:\VS CODE\Python\CS589\CusService_Python> python .\embeddata.py
```

Step 1.2.2 (cont)

Thus, for now, we create a sample called 'data.csv' that contain a very simple data like this. Then, we train and test on the given data.

```
Python > CS589 > CusService_Python > processed > data.csv > data
```

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```
1 ,title,text
2 0,apple,"Apple is a bit sour. It has red, green, yellow. The score is 3.5."
3 1,peach,"Peach is very delicious. It has a pinkish-yellow color. The score is 5."
4 2,banana,"Banana is quite sweet. It is yellow when ripe. The score is 4.5."
5 3,grape,"Grape can be sweet or sour. It comes in purple, green, and red. The score is 4."
6 4,orange,"Orange is a mix of sweet and tangy. It is bright orange. The score is 4.2."
7 5,cherry,"Cherry is both sweet and tart. It is deep red. The score is 4.8."
```

Step 1.2.2 (cont)

Now, type 'flask run' to run the Flask Python server and check our result at <http://localhost:5000>

Ask a Question

Question:

How does apple taste?

Ask

Step 1.2.2 (cont)

Question Result

Question: How does apple taste?

Answer: Apple is a bit sour.

[Ask Another Question](#)

Step 1.2.2 (cont)

I realize to minimize the probability of server error (e.g. 5xx error), we can lower the number of lines in scraped.csv. In other words, this means lower the amount of training data and lower the accuracy of the program, but it ensures that we don't encounter server error many times (since it costs me 10 minutes to train and suddenly it has the server error)

Step 1.2.2 (cont)

Thus, I make some changes in embeddata.py (line 24 - 25) into:

```
# Read a random sample of 300 lines  
df = pd.read_csv('processed/scraped.csv', index_col=0, nrows=450)  
df.columns = ['title', 'text']
```

The number of lines taken is 450 lines. (½ of the actual data size in scraped.csv)

```
(venv) PS D:\VS CODE\Python\CS589\CusService_Python> python .\embeddata.py
```


Step 1.2.2 (cont)

Now, let's try 'flask run' again to see the result:

```
(venv) PS D:\VS CODE\Python\CS589\CusService_Python> flask run
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: off
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
127.0.0.1 - - [04/Feb/2024 04:18:41] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [04/Feb/2024 04:18:41] "GET /static/main.css HTTP/1.1" 304 -
127.0.0.1 - - [04/Feb/2024 04:18:42] "GET /static/dog.png HTTP/1.1" 200 -
127.0.0.1 - - [04/Feb/2024 04:18:52] "POST /ask HTTP/1.1" 200 -
127.0.0.1 - - [04/Feb/2024 04:18:53] "GET /static/main.css HTTP/1.1" 304 -
127.0.0.1 - - [04/Feb/2024 04:18:55] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [04/Feb/2024 04:18:55] "GET /static/main.css HTTP/1.1" 304 -
127.0.0.1 - - [04/Feb/2024 04:19:01] "POST /ask HTTP/1.1" 200 -
127.0.0.1 - - [04/Feb/2024 04:19:01] "GET /static/main.css HTTP/1.1" 304 -
127.0.0.1 - - [04/Feb/2024 04:20:17] "POST /ask HTTP/1.1" 200 -
127.0.0.1 - - [04/Feb/2024 04:20:17] "GET /static/main.css HTTP/1.1" 304 -
```

Step 1.2.2 (cont)

Ask a Question

Question:

What is the 25th president of the US?

Ask

Ask a Question

Question:

What is the CEO of OpenAI?

Ask

Question Result

Question: What is the 25th president of the US?

Answer: I don't know.

[Ask Another Question](#)

Question Result

Question: What is the CEO of OpenAI?

Answer: The CEO of OpenAI is Sam Altman.

[Ask Another Question](#)

Step 1.2.2 (cont)

Ask a Question

Question:

What is the newest embeddings model?

Ask

Ask a Question

Question:

Tell me a little bit about GPT4 (number of data, price, etc.)

Ask

Question Result

Question: What is the newest embeddings model?

Answer: The newest embeddings model is text-embedding-ada-002.

[Ask Another Question](#)

Question Result

Question: Tell me a little bit about GPT4 (number of data, price, etc.)

Answer: GPT-4 includes an updated and improved model with function calling.

[Ask Another Question](#)

Source code & reference:

[Error codes - OpenAI API](#)

[Production best practices - OpenAI API](#)

[Embeddings - OpenAI API](#)

GitHub: https://github.com/MynameisKoi/CS589/tree/main/CusService_Python