

Name Thao Vy Tran

EE 104

README

Hardware part link <https://youtu.be/dyUuvyeEQLA>

OpenAI link <https://youtu.be/VSxjlLOMQ1I>

Part 1: OpenAI File Q&A

Step 1: Set up OpenAI API Key and Pinecone API key and save it in .env file

Step 2: Run OPEN COLAB to check whether Pinecone API Key working properly

Step 3: Download Nodejs and let npm installed

Use **node -v** and **npm -v** to check whether Nodejs and npm are installed or not

Step 4: Download openai-cookbook-main.zip

Step 5: In Server site, make sure to install all necessary packages

pip install openai

npm install openai

python install virtualenv

python -m venv venv

.\venv\Scripts\activate

pip install -r .\requirements.txt

pip install python-dotenv

python .\app.py

```
Administrator: Windows PowerShell
* Serving Flask app 'app'
* Debug mode: on
INFO:werkzeug:WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8080
INFO:werkzeug:Press CTRL+C to quit
INFO:werkzeug: * Restarting with stat
WARNING:dotenv.main:Python-dotenv could not parse statement starting at line 7
WARNING:werkzeug: * Debugger is active!
INFO:werkzeug: * Debugger PIN: 230-721-611
INFO:werkzeug:127.0.0.1 - - [03/May/2023 18:37:20] "GET / HTTP/1.1" 404 -
INFO:werkzeug:127.0.0.1 - - [03/May/2023 18:37:20] "GET /favicon.ico HTTP/1.1" 404 -
(venv) PS C:\Users\vytha\openai-cookbook-main\apps\file-q-and-a\nextjs-with-flask-server\server> python .\app.py
WARNING:dotenv.main:Python-dotenv could not parse statement starting at line 7
* Serving Flask app 'app'
* Debug mode: on
INFO:werkzeug:WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8080
INFO:werkzeug:Press CTRL+C to quit
INFO:werkzeug: * Restarting with stat
WARNING:dotenv.main:Python-dotenv could not parse statement starting at line 7
WARNING:werkzeug: * Debugger is active!
INFO:werkzeug: * Debugger PIN: 230-721-611
INFO:werkzeug:127.0.0.1 - - [03/May/2023 18:43:35] "POST /process_file HTTP/1.1" 200 -
INFO:werkzeug:127.0.0.1 - - [03/May/2023 18:44:40] "OPTIONS /answer_question HTTP/1.1" 200 -
INFO:werkzeug:127.0.0.1 - - [03/May/2023 18:44:43] "POST /answer_question HTTP/1.1" 200 -
```

Figure 1: Server site

Step 6: In Client site, follow these steps:

pip install openai

npm install openai

npm install

npm run dev

```
Administrator: C:\windows\system32\cmd.exe
kages (from aiohttp->openai) (6.0.4)
Requirement already satisfied: async-timeout<5.0,>=4.0.0a3 in c:\users\vytha\appdata\local\programs\python\python38\lib\
site-packages (from aiohttp->openai) (4.0.2)
Requirement already satisfied: yarl<2.0,>=1.0 in c:\users\vytha\appdata\local\programs\python\python38\lib\site-packages
(from aiohttp->openai) (1.8.2)
Requirement already satisfied: frozenlist>=1.1.1 in c:\users\vytha\appdata\local\programs\python\python38\lib\site-packa
ges (from aiohttp->openai) (1.3.3)
Requirement already satisfied: aiosignal>=1.1.2 in c:\users\vytha\appdata\local\programs\python\python38\lib\site-packag
es (from aiohttp->openai) (1.3.1)
Requirement already satisfied: colorama in c:\users\vytha\appdata\local\programs\python\python38\lib\site-packages (from
tqdm->openai) (0.4.6)
PS C:\Users\vytha\openai-cookbook-main\apps\file-q-and-a\nextjs-with-flask-server\client> npm install openai

up to date, audited 441 packages in 1s

173 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
PS C:\Users\vytha\openai-cookbook-main\apps\file-q-and-a\nextjs-with-flask-server\client> npm install

up to date, audited 441 packages in 1s

173 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
PS C:\Users\vytha\openai-cookbook-main\apps\file-q-and-a\nextjs-with-flask-server\client> npm run dev

> file-q-and-a@0.1.0 dev
> next dev

ready - started server on 0.0.0.0:3000, url: http://localhost:3000
wait - compiled client and server successfully in 4.1s (166 modules)
wait - compiling...
wait - compiled successfully in 279 ms (133 modules)
wait - compiling / (client and server)...
wait - compiled client and server successfully in 1543 ms (757 modules)
```

Figure 2: Client site

Part 2: OpenAI Web Crawl Q&A

Step 1: Set up OpenAI API key

Step 2: install openai by the code `pip install openai`

Step 3: Create .env file to save Openai key

Step 4: follow the step

python -m venv env

ls

ls env

.\env\Scripts\activate

```
Administrator: Windows PowerShell

Directory: C:\Users\vytha\web-crawl-q-and-a1

Mode                LastWriteTime         Length Name
----                -
d-----          4/29/2023   5:39 PM             env
-a-----          4/29/2023   4:45 PM              215 .env
-a-----          4/27/2023   1:39 PM          1342 requirements.txt
-a-----          4/27/2023   1:39 PM         81844 web-qa.ipynb
-a-----          4/27/2023   1:39 PM        13452 web-qa.py

PS C:\Users\vytha\web-crawl-q-and-a1> ls env

Directory: C:\Users\vytha\web-crawl-q-and-a1\env

Mode                LastWriteTime         Length Name
----                -
d-----          4/29/2023   5:39 PM             Include
d-----          4/29/2023   5:39 PM             Lib
d-----          4/29/2023   5:40 PM             Scripts
-a-----          4/29/2023   5:39 PM           322 pyvenv.cfg

PS C:\Users\vytha\web-crawl-q-and-a1> .\env\Scripts\activate
(env) PS C:\Users\vytha\web-crawl-q-and-a1> Get-ExecutionPolicy -List

Scope ExecutionPolicy
-----
MachinePolicy Undefined
UserPolicy    Undefined
Process       Undefined
CurrentUser   Unrestricted
LocalMachine   Undefined

(env) PS C:\Users\vytha\web-crawl-q-and-a1> Set-ExecutionPolicy -ExecutionPolicy Unrestricted -Scope CurrentUser
>>

Execution Policy Change
The execution policy helps protect you from scripts that you do not trust. Changing the execution policy might expose
you to the security risks described in the about_Execution_Policies help topic at
https://go.microsoft.com/fwlink/?LinkID=135170. Do you want to change the execution policy?
[Y] Yes  [A] Yes to All  [N] No  [L] No to All  [S] Suspend  [?] Help (default is "N"): y
(env) PS C:\Users\vytha\web-crawl-q-and-a1> Get-ExecutionPolicy -List

Scope ExecutionPolicy
```

Get-ExecutionPolicy -List

Set-ExecutionPolicy -ExecutionPolicy Unrestricted -Scope CurrentUser

Get-ExecutionPolicy -List

Set-ExecutionPolicy -ExecutionPolicy Unrestricted -Scope LocalMachine

Get-ExecutionPolicy -List

.\env\Scripts\activate

pip install -r requirements.txt

```
Administrator: Windows PowerShell
PS C:\Users\vytha\web-crawl-q-and-a1> .\env\Scripts\activate_
(env) PS C:\Users\vytha\web-crawl-q-and-a1> Get-ExecutionPolicy -List

Scope ExecutionPolicy
-----
MachinePolicy Undefined
UserPolicy Undefined
Process Undefined
CurrentUser Unrestricted
LocalMachine Undefined

(env) PS C:\Users\vytha\web-crawl-q-and-a1> Set-ExecutionPolicy -ExecutionPolicy Unrestricted -Scope CurrentUser
>>

Execution Policy Change
The execution policy helps protect you from scripts that you do not trust. Changing the execution policy might expose
you to the security risks described in the about_Execution_Policies help topic at
https://go.microsoft.com/fwlink/?LinkID=135170. Do you want to change the execution policy?
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "N"): y
(env) PS C:\Users\vytha\web-crawl-q-and-a1> Get-ExecutionPolicy -List

Scope ExecutionPolicy
-----
MachinePolicy Undefined
UserPolicy Undefined
Process Undefined
CurrentUser Unrestricted
LocalMachine Undefined

(env) PS C:\Users\vytha\web-crawl-q-and-a1> Set-ExecutionPolicy -ExecutionPolicy Unrestricted -Scope LocalMachine
>>

Execution Policy Change
The execution policy helps protect you from scripts that you do not trust. Changing the execution policy might expose
you to the security risks described in the about_Execution_Policies help topic at
https://go.microsoft.com/fwlink/?LinkID=135170. Do you want to change the execution policy?
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "N"): y
(env) PS C:\Users\vytha\web-crawl-q-and-a1> Get-ExecutionPolicy -List

Scope ExecutionPolicy
-----
MachinePolicy Undefined
UserPolicy Undefined
Process Undefined
CurrentUser Unrestricted
LocalMachine Unrestricted

(env) PS C:\Users\vytha\web-crawl-q-and-a1>
```

Step 5 Edit the python file to change to sjsu website and other necessary part to run the code

Step 6: Make sure to install all necessary packages

(env) PS C:\web-crawl-q-and-a> pip install tiktoken

```

(env) PS C:\Users\vytha\web-crawl-q-and-a1> ls

Directory: C:\Users\vytha\web-crawl-q-and-a1

Mode                LastWriteTime         Length Name
----                -
d-----         4/29/2023   5:39 PM             env
-a----         4/29/2023   4:45 PM             215 .env
-a----         4/27/2023   1:39 PM          1342 requirements.txt
-a----         4/27/2023   1:39 PM        81844 web-qa.ipynb
-a----         4/27/2023   1:39 PM        13452 web-qa.py

(env) PS C:\Users\vytha\web-crawl-q-and-a1> pip install tiktoken
Collecting tiktoken
  Downloading tiktoken-0.3.3-cp311-cp311-win_amd64.whl (579 kB)
    ----- 579.4/579.4 kB 5.2 MB/s eta 0:00:00
Collecting regex>=2022.1.18
  Downloading regex-2023.3.23-cp311-cp311-win_amd64.whl (267 kB)
    ----- 267.0/267.0 kB 5.5 MB/s eta 0:00:00
Collecting requests>=2.26.0
  Downloading requests-2.29.0-py3-none-any.whl (62 kB)
    ----- 62.5/62.5 kB ? eta 0:00:00
Collecting charset-normalizer<4,>=2
  Downloading charset_normalizer-3.1.0-cp311-cp311-win_amd64.whl (96 kB)
    ----- 96.7/96.7 kB 5.8 MB/s eta 0:00:00
Collecting idna<4,>=2.5
  Using cached idna-3.4-py3-none-any.whl (61 kB)
Collecting urllib3<1.27,>=1.21.1
  Using cached urllib3-1.26.15-py2.py3-none-any.whl (140 kB)
Collecting certifi>=2017.4.17
  Using cached certifi-2022.12.7-py3-none-any.whl (155 kB)
Installing collected packages: urllib3, regex, idna, charset-normalizer, certifi, requests, tiktoken
Successfully installed certifi-2022.12.7 charset-normalizer-3.1.0 idna-3.4 regex-2023.3.23 requests-2.29.0 tiktoken-0.3.3 urllib3-1.26.15

[notice] A new release of pip available: 22.3.1 -> 23.1.2
[notice] To update, run: python.exe -m pip install --upgrade pip
(env) PS C:\Users\vytha\web-crawl-q-and-a1> python.exe -m pip install --upgrade pip
Requirement already satisfied: pip in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (22.3.1)
Collecting pip
  Using cached pip-23.1.2-py3-none-any.whl (2.1 MB)
Installing collected packages: pip
  Attempting uninstall: pip
    Found existing installation: pip 22.3.1
    Uninstalling pip-22.3.1:
      Successfully uninstalled pip-22.3.1
  Successfully installed pip-23.1.2

```

(env) PS C:\web-crawl-q-and-a> pip install pandas openai

(env) PS C:\web-crawl-q-and-a> pip install python-dotenv

(env) PS C:\web-crawl-q-and-a> pip install bs4

(env) PS C:\web-crawl-q-and-a> pip install matplotlib

(env) PS C:\web-crawl-q-and-a> pip install plotly

(env) PS C:\web-crawl-q-and-a> pip install scipy

(env) PS C:\web-crawl-q-and-a> pip install sklearn -use-pep517

(env) PS C:\web-crawl-q-and-a> pip install -U scikit-learn scipy matplotlib

Administrator: Windows PowerShell

```
(env) PS C:\Users\vytha\web-crawl-q-and-a1> ^C
(env) PS C:\Users\vytha\web-crawl-q-and-a1> pip install pandas openai
Collecting pandas
  Downloading pandas-2.0.1-cp311-cp311-win_amd64.whl (10.6 MB)
----- 10.6/10.6 MB 17.2 MB/s eta 0:00:00
Collecting openai
  Downloading openai-0.27.5-py3-none-any.whl (71 kB)
----- 71.6/71.6 kB 4.1 MB/s eta 0:00:00
Collecting python-dateutil>=2.8.2 (from pandas)
  Using cached python_dateutil-2.8.2-py2.py3-none-any.whl (247 kB)
Collecting pytz>=2020.1 (from pandas)
  Downloading pytz-2023.3-py2.py3-none-any.whl (502 kB)
----- 502.3/502.3 kB 2.9 MB/s eta 0:00:00
Collecting tzdata>=2022.1 (from pandas)
  Downloading tzdata-2023.3-py2.py3-none-any.whl (341 kB)
----- 341.8/341.8 kB 2.4 MB/s eta 0:00:00
Collecting numpy>=1.21.0 (from pandas)
  Downloading numpy-1.24.3-cp311-cp311-win_amd64.whl (14.8 MB)
----- 14.8/14.8 MB 14.2 MB/s eta 0:00:00
Requirement already satisfied: requests>=2.20 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from openai) (2.29.0)
Collecting tqdm (from openai)
  Using cached tqdm-4.65.0-py3-none-any.whl (77 kB)
Collecting aiohttp (from openai)
  Downloading aiohttp-3.8.4-cp311-cp311-win_amd64.whl (317 kB)
----- 317.2/317.2 kB 2.8 MB/s eta 0:00:00
Collecting six>=1.5 (from python-dateutil>=2.8.2->pandas)
  Using cached six-1.16.0-py2.py3-none-any.whl (11 kB)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from requests>=2.20->openai) (3.1.0)
Requirement already satisfied: idna<4,>=2.5 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from requests>=2.20->openai) (3.4)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from requests>=2.20->openai) (1.26.15)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from requests>=2.20->openai) (2022.12.7)
Collecting attrs>=17.3.0 (from aiohttp->openai)
  Using cached attrs-23.1.0-py3-none-any.whl (61 kB)
Collecting multidict<7.0,>=4.5 (from aiohttp->openai)
  Using cached multidict-6.0.4-cp311-cp311-win_amd64.whl (28 kB)
Collecting async-timeout<5.0,>=4.0.0a3 (from aiohttp->openai)
  Using cached async_timeout-4.0.2-py3-none-any.whl (5.8 kB)
Collecting yarl<2.0,>=1.0 (from aiohttp->openai)
  Downloading yarl-1.9.2-cp311-cp311-win_amd64.whl (60 kB)
----- 60.2/60.2 kB 640.7 kB/s eta 0:00:00
Collecting frozenlist>=1.1.1 (from aiohttp->openai)
  Using cached frozenlist-1.3.3-cp311-cp311-win_amd64.whl (32 kB)
Collecting aiosignal>=1.1.2 (from aiohttp->openai)
  Using cached aiosignal-1.3.1-py3-none-any.whl (7.6 kB)
Collecting colorama (from tqdm->openai)
```

Administrator: Windows PowerShell

```
(env) PS C:\Users\vytha\web-crawl-q-and-a1>
(env) PS C:\Users\vytha\web-crawl-q-and-a1> pip install python-dotenv
Collecting python-dotenv
  Using cached python_dotenv-1.0.0-py3-none-any.whl (19 kB)
Installing collected packages: python-dotenv
Successfully installed python-dotenv-1.0.0
(env) PS C:\Users\vytha\web-crawl-q-and-a1> pip install bs4
Collecting bs4
  Using cached bs4-0.0.1-py3-none-any.whl
Collecting beautifulsoup4 (from bs4)
  Downloading beautifulsoup4-4.12.2-py3-none-any.whl (142 kB)
----- 141.0/143.0 kB 2.1 MB/s eta 0:00:00
Collecting soupsieve>1.2 (from beautifulsoup4->bs4)
  Downloading soupsieve-2.4.1-py3-none-any.whl (36 kB)
Installing collected packages: soupsieve, beautifulsoup4, bs4
Successfully installed beautifulsoup4-4.12.2 bs4-0.0.1 soupsieve-2.4.1
(env) PS C:\Users\vytha\web-crawl-q-and-a1> pip install matplotlib
Collecting matplotlib
  Using cached matplotlib-3.7.1-cp311-cp311-win_amd64.whl (7.6 MB)
Collecting contourpy>=1.0.1 (from matplotlib)
  Using cached contourpy-1.0.7-cp311-cp311-win_amd64.whl (162 kB)
Collecting cycler>=0.10 (from matplotlib)
  Using cached cycler-0.11.0-py3-none-any.whl (6.4 kB)
Collecting fonttools>=4.22.0 (from matplotlib)
  Using cached fonttools-4.39.3-py3-none-any.whl (1.0 MB)
Collecting kiwisolver>=1.0.1 (from matplotlib)
  Using cached kiwisolver-1.4.4-cp311-cp311-win_amd64.whl (55 kB)
Requirement already satisfied: numpy>=1.20 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from matplotlib) (1.24.3)
Collecting packaging>=20.0 (from matplotlib)
  Downloading packaging-23.1-py3-none-any.whl (48 kB)
----- 48.9/48.9 kB 822.7 kB/s eta 0:00:00
Collecting pillow>=6.2.0 (from matplotlib)
  Downloading Pillow-9.5.0-cp311-cp311-win_amd64.whl (2.5 MB)
----- 2.5/2.5 MB 9.4 MB/s eta 0:00:00
Collecting pyparsing>=2.3.1 (from matplotlib)
  Using cached pyparsing-3.0.9-py3-none-any.whl (98 kB)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from matplotlib) (2.8.2)
Requirement already satisfied: six>=1.5 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from python-dateutil>=2.7->matplotlib) (1.16.0)
Installing collected packages: pyparsing, pillow, packaging, kiwisolver, fonttools, cycler, contourpy, matplotlib
Successfully installed contourpy-1.0.7 cycler-0.11.0 fonttools-4.39.3 kiwisolver-1.4.4 matplotlib-3.7.1 packaging-23.1 pillow-9.5.0 pyparsing-3.0.9
(env) PS C:\Users\vytha\web-crawl-q-and-a1> pip install plotly
Collecting plotly
  Downloading plotly-5.14.1-py2.py3-none-any.whl (15.3 MB)
----- 15.3/15.3 MB 13.6 MB/s eta 0:00:00
Collecting tenacity>=6.2.0 (from plotly)
  Downloading tenacity-8.2.2-py3-none-any.whl (24 kB)
```



```
Administrator: Windows PowerShell
(env) PS C:\Users\vytha\web-crawl-q-and-a1> pip install scipy
Collecting scipy
  Using cached scipy-1.10.1-cp311-cp311-win_amd64.whl (42.2 MB)
Requirement already satisfied: numpy<1.27.0,>=1.19.5 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from sci
ipy) (1.24.3)
Installing collected packages: scipy
Successfully installed scipy-1.10.1
(env) PS C:\Users\vytha\web-crawl-q-and-a1> pip install sklearn -use-pep517

Usage:
  pip install [options] <requirement specifier> [package-index-options] ...
  pip install [options] -r <requirements file> [package-index-options] ...
  pip install [options] [-e] <vcs project url> ...
  pip install [options] [-e] <local project path> ...
  pip install [options] <archive url/path> ...

no such option: -u
(env) PS C:\Users\vytha\web-crawl-q-and-a1> pip install -U scikit-learn scipy matplotlib
Collecting scikit-learn
  Using cached scikit_learn-1.2.2-cp311-cp311-win_amd64.whl (8.3 MB)
Requirement already satisfied: scipy in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (1.10.1)
Requirement already satisfied: matplotlib in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (3.7.1)
Requirement already satisfied: numpy>=1.17.3 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from scikit-lea
rn) (1.24.3)
Collecting joblib>=1.1.1 (from scikit-learn)
  Using cached joblib-1.2.0-py3-none-any.whl (297 kB)
Collecting threadpoolctl>=2.0.0 (from scikit-learn)
  Using cached threadpoolctl-3.1.0-py3-none-any.whl (14 kB)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from matplot
lib) (1.0.7)
Requirement already satisfied: cyclor>=0.10 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from matplotlib)
(0.11.0)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from matplo
tlib) (4.39.3)
Requirement already satisfied: kiwisolver>=1.0.1 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from matplo
tlib) (1.4.4)
Requirement already satisfied: packaging>=20.0 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from matplotl
ib) (23.1)
Requirement already satisfied: pillow>=6.2.0 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from matplotlib)
(9.5.0)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from matplot
lib) (3.0.9)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from mat
plotlib) (2.8.2)
Requirement already satisfied: six>=1.5 in c:\users\vytha\web-crawl-q-and-a1\env\lib\site-packages (from python-dateutil
>=2.7->matplotlib) (1.16.0)
Installing collected packages: threadpoolctl, joblib, scikit-learn
Successfully installed joblib-1.2.0 scikit-learn-1.2.2 threadpoolctl-3.1.0
(env) PS C:\Users\vytha\web-crawl-q-and-a1> python web-qa.py
https://openai.com/
```

Step 6: Run python file

python web-qa.py

Part 3: Simple Traffic Controller, Part 2 Hardware

← → ↻ Not secure | kria:9090/lab/tree/Untitled.ipynb

File Edit View Run Kernel Tabs Settings Help

Filter files by name

Name	Last Modified
common	a month ago
getting_sta...	a month ago
kv260	a month ago
pynq_comp...	a month ago
pynq_perip...	a month ago
pynq-dpu	a month ago
pynq-hello...	a month ago
Untitled Fol...	a month ago
Untitled Fol...	a day ago
Untitled Fol...	a month ago
ps_gpio_kv...	a month ago
Untitled.ipy...	21 minutes ago
Welcome t...	7 months ago

```
[5]: from pynq import GPIO

[6]: led1 = GPIO(GPIO.get_gpio_pin(5), 'out')
    led2 = GPIO(GPIO.get_gpio_pin(0), 'out')
    led3 = GPIO(GPIO.get_gpio_pin(4), 'out')

    led4 = GPIO(GPIO.get_gpio_pin(2), 'out')
    led5 = GPIO(GPIO.get_gpio_pin(7), 'out')
    led6 = GPIO(GPIO.get_gpio_pin(3), 'out')

    CountDown = GPIO(GPIO.get_gpio_pin(6), 'out')

[11]: from time import sleep
    DELAY = 0.5

    for i in range(2):
        led1.write(0)
        led2.write(0)
        led3.write(0)
        led4.write(0)
        led5.write(0)
        led6.write(0)
        sleep(DELAY)

        led1.write(1)
        sleep(DELAY)
        led2.write(1)
        sleep(DELAY)
        led3.write(1)
        sleep(DELAY)
        led4.write(1)
        sleep(DELAY)
        led5.write(1)
        sleep(DELAY)
        led6.write(1)
        sleep(DELAY)

    led1.write(0)
    led2.write(0)
    led3.write(0)
    led4.write(0)
    led5.write(0)
```

Simple 0 2 Python 3 | Idle Mode: Command Ln 1, Col 1 Untitled.ipynb

← → ↻ Not secure | kria:9090/lab/tree/Untitled.ipynb

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Untitled Fol...	a month ago
Untitled Fol...	a day ago
Untitled Fol...	a month ago
ps_gpio_kv...	a month ago
Untitled.ipy...	21 minutes ago
Welcome t...	7 months ago

```
led1.write(0)
led2.write(0)
led3.write(0)
led4.write(0)
led5.write(0)
led6.write(0)

[12]: # Reset all to zero
    led1.write(0)
    led2.write(0)
    led3.write(0)

    led4.write(0)
    led5.write(0)
    led6.write(0)
    CountDown.write(0)

[13]: # State machine

    # 1st state
    led4.write(1)
    led3.write(1)

[14]: # 2nd state to 3rd state - when passenger press the button
    from time import sleep
    DELAY = 1.5

    led4.write(0)
    led3.write(1)
    led5.write(1)
    sleep(DELAY)

    led5.write(0)
    led6.write(1)
    sleep(DELAY)

    led3.write(0)
    led1.write(1)
    CountDown.write(1)

    # 4th state
    sleep(5)
```

Simple 0 2 Python 3 | Idle Mode: Command Ln 1, Col 1 Untitled.ipynb

← → ↻ Not secure | kria9090/lab/tree/Untitled.ipynb

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pyng-dpu	a month ago
pyng-hello...	a month ago
Untitled Fol...	a month ago
Untitled Fol...	a day ago
Untitled Fol...	a month ago
ps_gpio_kv...	a month ago
Untitled.py...	in a few seconds
Welcome t...	7 months ago

```
[14]: # 2nd state to 3rd state - When passenger press the button
from time import sleep
DELAY = 1.5

led3.write(1)

led4.write(0)
led9.write(1)
led5.write(1)
sleep(DELAY)

led5.write(0)
led6.write(1)
sleep(DELAY)

led5.write(0)
led1.write(1)
CountDown.write(1)

# 4th state
sleep(5)
led1.write(0)
led2.write(1)
CountDown.write(0)
sleep(DELAY)

led2.write(0)
led3.write(1)
sleep(DELAY)

led4.write(1)
led3.write(1)
led6.write(0)
```

[]:

[]:

[]:

[]:

Simple 0 2 Python 3 | Idle Saving completed Mode: Command Ln 1, Col 1 Untitled.ipynb

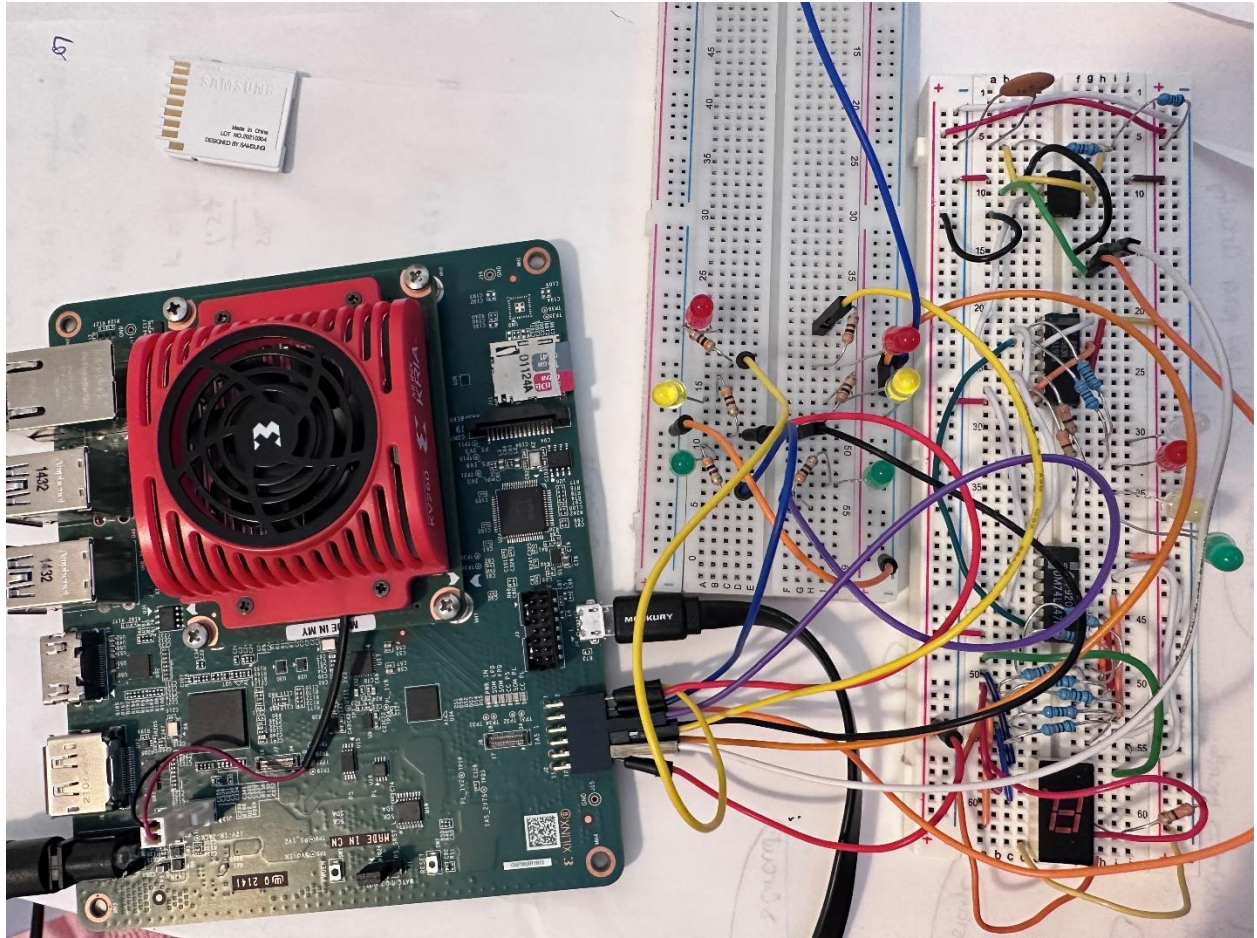


Figure 3: Traffic control using Kria board