IS5006 INTELLIGENT SYSTEM DEPLOYMENT

HOW-TO GUIDE

Prepared by:

Group 7

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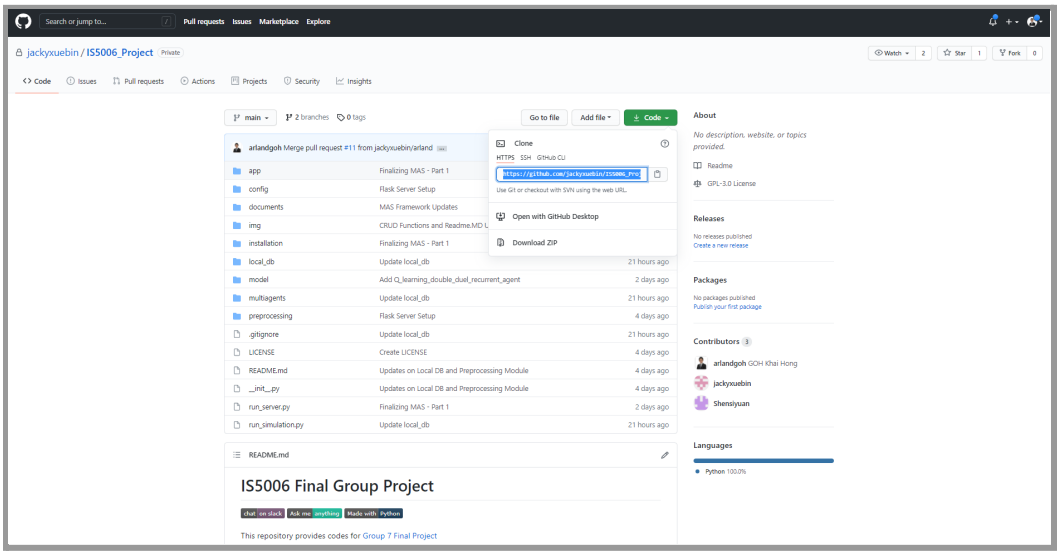
Group 7 Multi-agent System Installation Guide

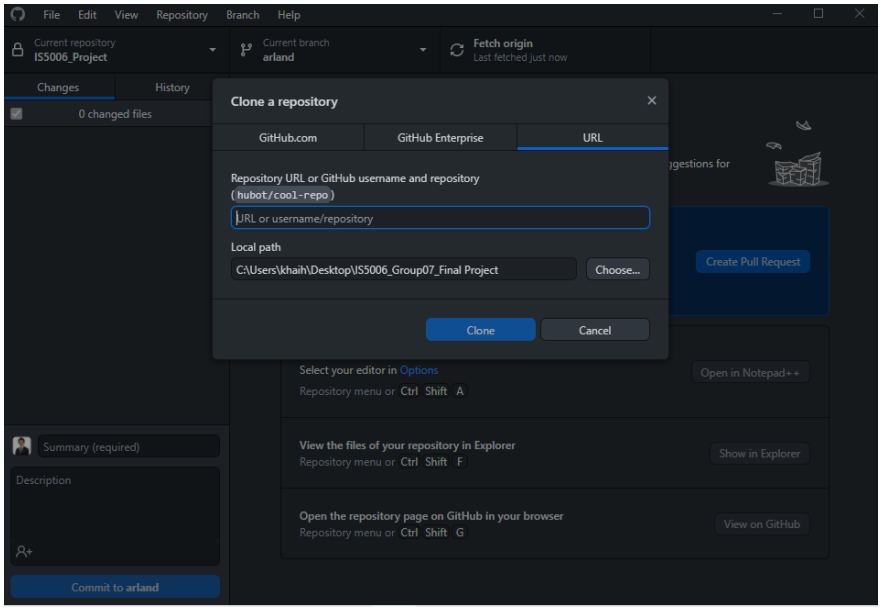
1. Clone the Project Repository to Your Local Machine

To clone the project repository, please go to the Github repository using your browser and run the following command on your command prompt/terminal:

- **git clone https://github.com/jackyxuebin/IS5006_Project.git**



If you prefer Graphical User Interface (GUI), you can download the GitHub Desktop and use it to clone the repository. Go to File > Clone repository and paste the URL.



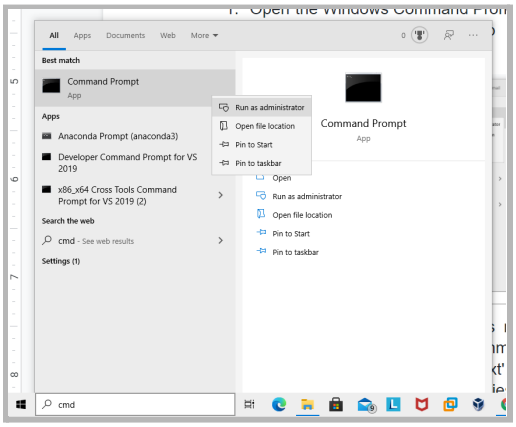
2. Setup the Environment for Group 7 Multi-agent System

You may need to install some Python dependencies on your machine before running our system. We assume that you are running a Windows machine. The system has been tested running under **Python >= 3.7.0** with the following packages installed. The packages/libraries are installed using **pip3** (package manager for Python packages).

2.1 Windows User

To install these dependencies:

1. Open the Windows Command Prompt as an administrator by simply right-clicking on the Command Prompt app in the startup menu and select 'Run As Administrator'.



2. Navigate to the directory of this readme file (which also contains the requirements.txt) in the command prompt.

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.19041.867]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>cd C:\Users\khaih\Desktop\IS5006_Group07_Final Project\IS5006_Project\installation

C:\Users\khaih\Desktop\IS5006_Group07_Final Project\IS5006_Project\installation>dir
 Volume in drive C is Windows-SSD
 Volume Serial Number is 76AC-62D6

 Directory of C:\Users\khaih\Desktop\IS5006_Group07_Final Project\IS5006_Project\installation

06/04/2021  11:40 pm    <DIR>          .
06/04/2021  11:40 pm    <DIR>          ..
06/04/2021  11:42 pm             1,681 README.md
06/04/2021  11:41 pm             2,150 requirements.txt
               2 File(s)          3,831 bytes
               2 Dir(s)  158,488,965,120 bytes free
```

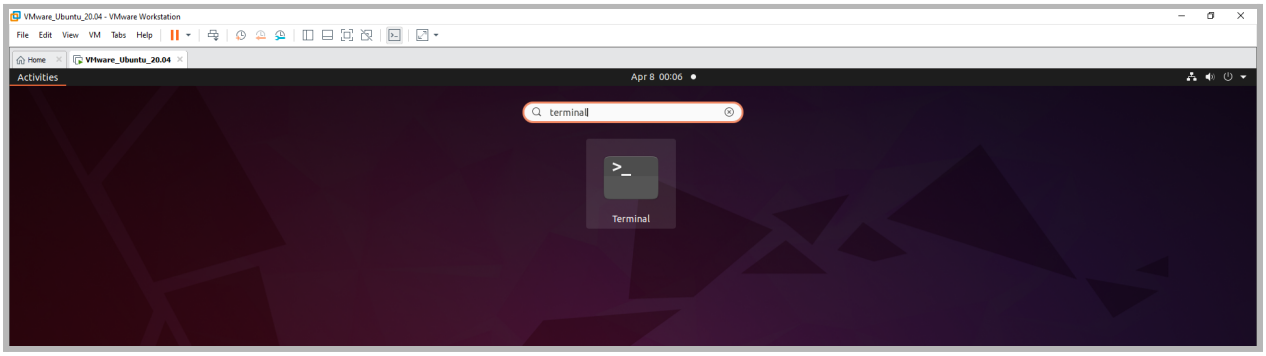
3. Run 'pip3 install -r requirements.txt'

```
C:\Users\khaih\Desktop\IS5006_Group07_Final Project\IS5006_Project\installation>pip3 install -r requirements.txt
```

2.2 Ubuntu User

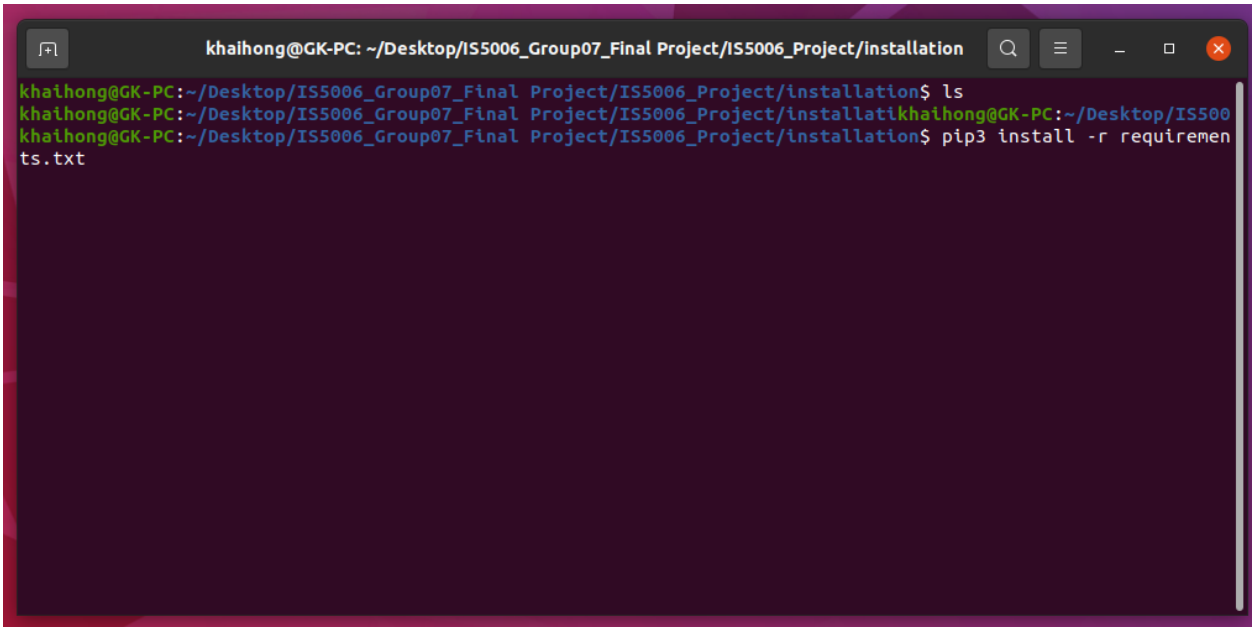
To install these dependencies:

1. Open the Terminal.



2. Navigate to the directory of this readme file (which also contains the requirements.txt) in the Terminal.

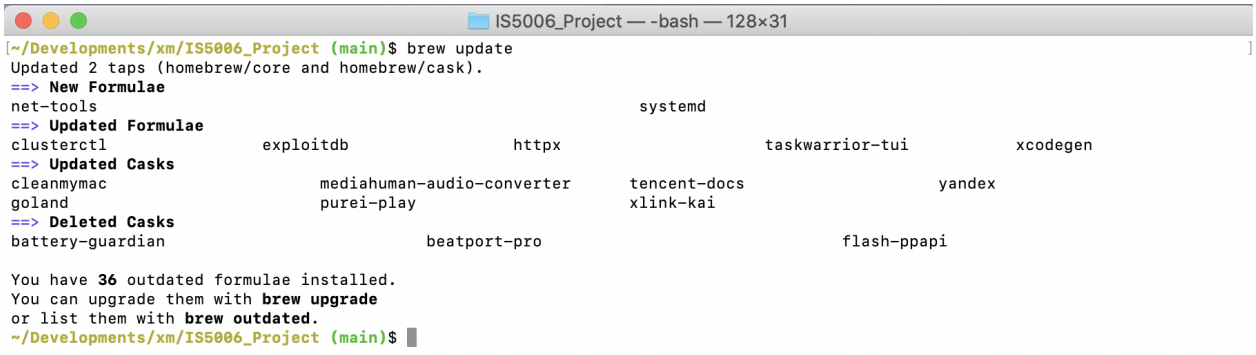
3. Run 'pip3 install -r requirements.txt'



2.3 Mac User

To setup python env:

1. Open the Terminal and update homebrew with `brew update --verbose`



2. Install pyenv with homebrew with `brew install pyenv`

3. Install Python 3.7 with pyenv with `pyenv install 3.7.3`

4. Set global default Python version with `pyenv global 3.7.3`

5. Update .bash_profile with

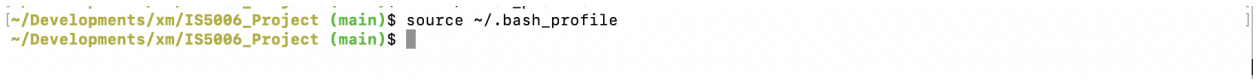
```
if command -v pyenv 1>/dev/null 2>&1; then

  eval "$(pyenv init -)"

fi
```

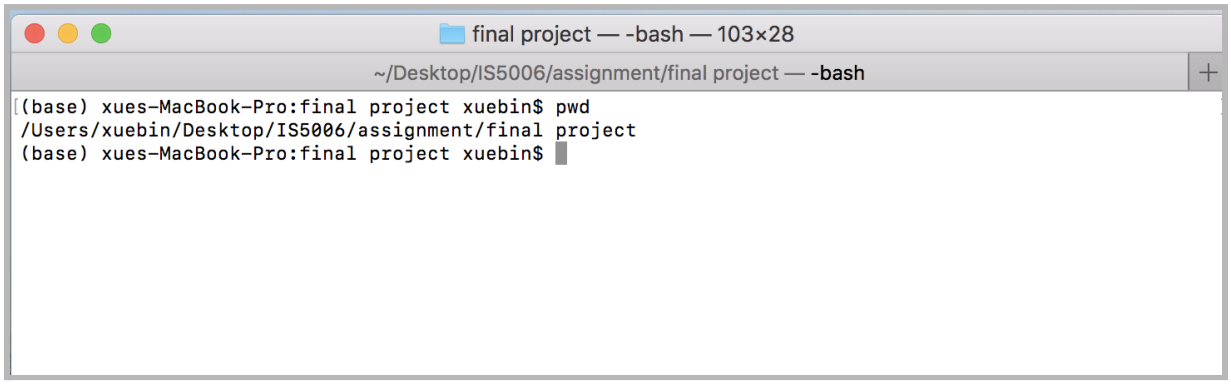
```
if command -v pyenv 1>/dev/null 2>&1; then
  eval "$(pyenv init -)"
fi
```

6. Source .bash_profile with `source ~/.bash_profile`



To install these dependencies:

1. Open the Terminal.



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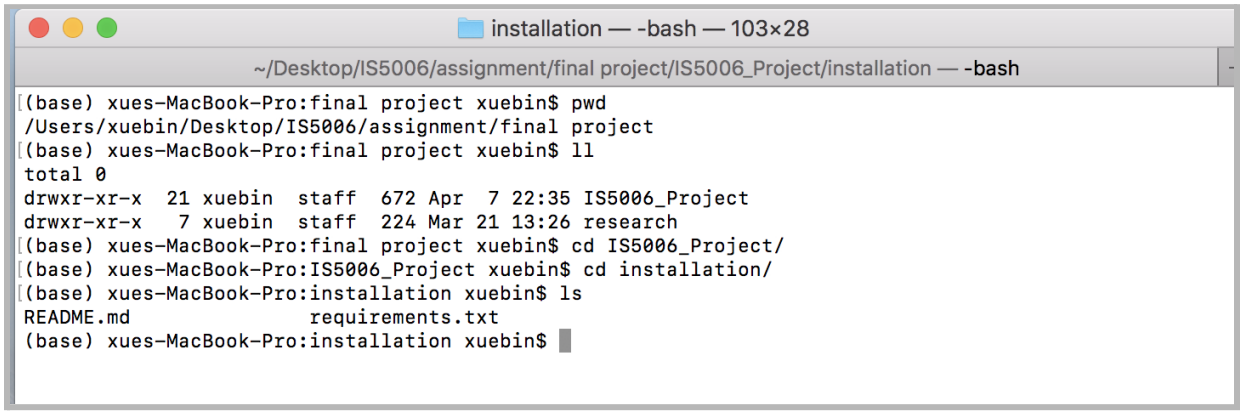
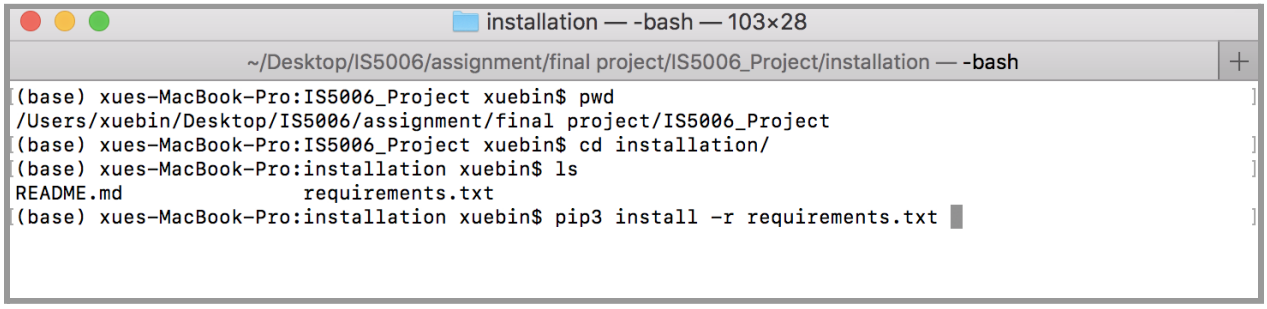


3. Run 'pip3 install -r requirements.txt'



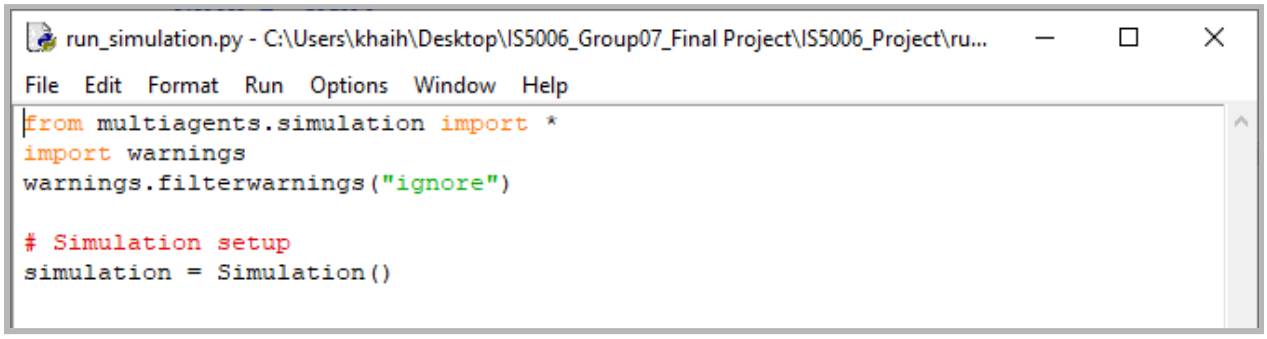
3. Quick Start [Without Running Flask Server]

For Ubuntu, Mac OS X and Windows 10:

To quick start the system, please navigate to the project folder and use the following command in your command prompt/Terminal:

- python3 run_simulation.py

or open the ‘run_simulation.py in Python IDE or any other IDE and run it.



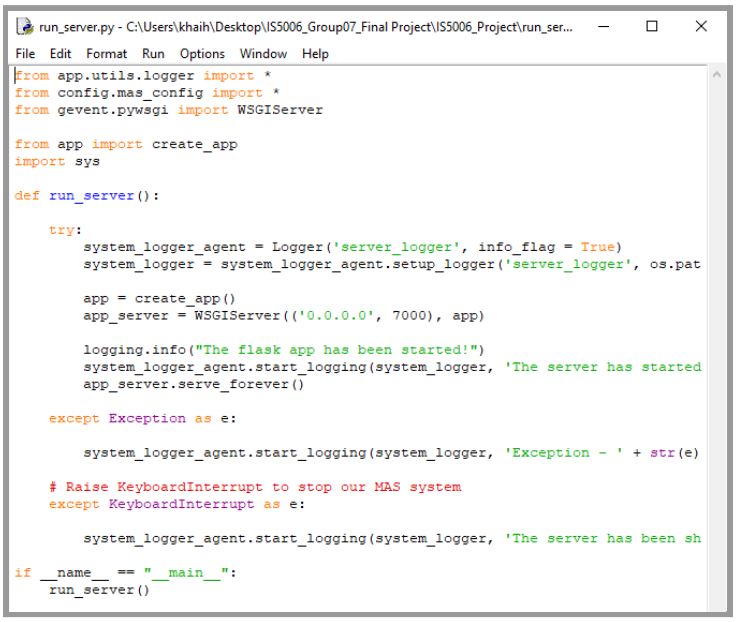
4. Start the Multi-agent System in Flask Server

For Ubuntu, Mac OS X and Windows 10:

To start the Flask Server, please use the following command in your command prompt/Terminal, the system will be served on port 7000:

- **python3 run_server.py**

or open the 'run_simulation.py' in Python IDE or any other IDE and run it



To run the Multi-agent system in the server, please open your browser and send the following http request to the server (using the address bar in the browser):

- **http://localhost:7000/run_simulation**

To check the cumulative profit/loss graph, you may use the /cumulative_profit_plot API:

- **http://localhost:7000/cumulative_profit_plot**

To check the other plot, you may invoke all/one of the following APIs below:

- **http://localhost:7000/signals_action_plot**
- **http://localhost:7000/action_pnl_plot**
- **http://localhost:7000/takeprofit_stoploss_plot**

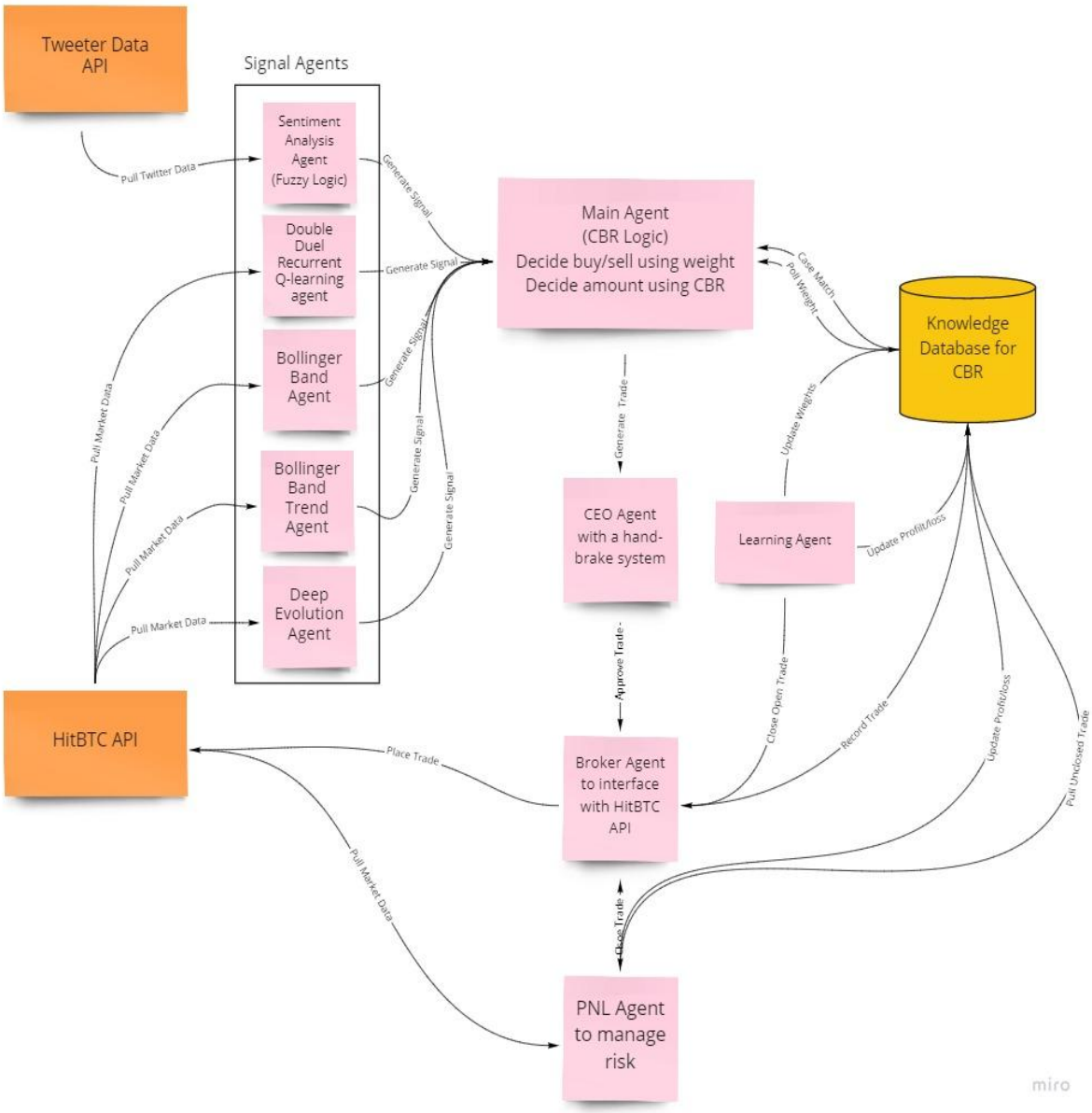
5. Flow Chart for Group 7 Multi-agent System

The flow chart below shows how the agents communicate among themselves. The external data sources used in the multi-agent system are:

1. Twitter data (Orange color box)
2. OHLCV data using the ccxt library and HitBTC APIs (Orange color box).

The dataset generated from the system will be saved in **Knowledge Database**:

1. locally in local database in '/local_db' directory as csv file
2. on cloud (Google Drive) as Google Sheets



6. Contact US

If any problems occur, please email one of the following members and paste the error message.

- Ge Xiaomeng (e0403444@u.nus.edu)
- Goh Khai Hong (e0503476@u.nus.edu),
- Shen Siyuan (e0403443@u.nus.edu),
- Xue Bin (e0573004@u.nus.edu),
- Yong Chee Xian Matthew (e0573096@u.nus.edu),
- Zou Yang (e0403394@u.nus.edu)