

System Installation And User Guide

Overview

This document will introduce how to install our system and instruct users how to use our system. Our stock consultant system consists of 2 modules: prediction, recommendation and chatbot module.

For the prediction and recommendation module, user can predict the stock tendency today according to interest of companies as well as get recommendation stock lists according to the predicting trend. As for chatbot module, user can get information like (overview or prediction of the company, recommendation stock) through typing questions on the chatbot window. Our system would answer the questions automatically.

System requirements

1. Operating system: windows 10
2. Anaconda or new Python environment.
3. An account successfully sign up in Google Account.
4. A modern web browser Chrome version 94 or above.

Installation

1. Download the project

Down load the full project through google drive:

https://drive.google.com/file/d/1ep2sh_dNNtpIdCGuZ8vTukZm9RFxO2me/view?usp=sharing

unzip and cd to project root directory <your download path> /stock/

2. set up environment

- Open the cmd console use the Anaconda to create a new Python environment through commend:

```
conda create -n stock python=3.6
```

- Activate the new environment:

```
conda activate stock
```

- Install the required packages:

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

```
pip install TA_Lib-0.4.19-cp36-cp36m-win_amd64.whl
```

- Train our system model by:

```
python training.py
```

- In the current directory of File Explorer, press the SHIFT and click the mouse right button to enter the Powershell console. Enter the command:

Ngrok.exe http 5000

You will see the result below:

```

ngrok by @inconshreveable (Ctrl+C to quit)

Session Status      online
Session Expires     1 hour, 59 minutes
Version             2.3.40
Region              United States (us)
Web Interface        http://127.0.0.1:4040
Forwarding            http://5708-2406-3003-206b-227b-ed93-e5ec-5a9-7eef.ngrok.io -> http://localhost:5000
                    https://5708-2406-3003-206b-227b-ed93-e5ec-5a9-7eef.ngrok.io -> http://localhost:5000

Connections
t1l    opn    rt1    rt5    p50    p90
0       0       0.00   0.00   0.00   0.00
  
```

Figure 1. run the nerok.exe

- enter the Google Dialogflow throw link: <https://dialogflow.cloud.google.com/> , sign in and create a new agent shown as Figure 2. Name the new agent as Stock.

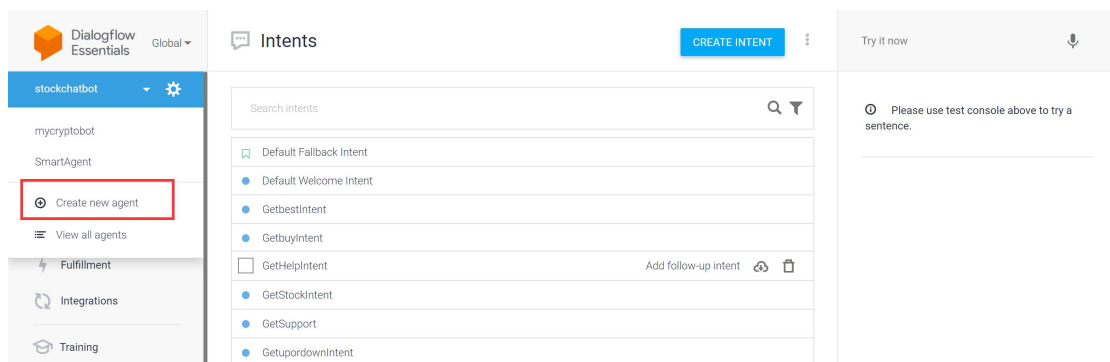


Figure 2. create a new agent

- Export the intent materials of our systems, click the gear icon and click the Export and Import, then click the Import from zip button to import intent material named stockchatbot.zip in our project root directory.

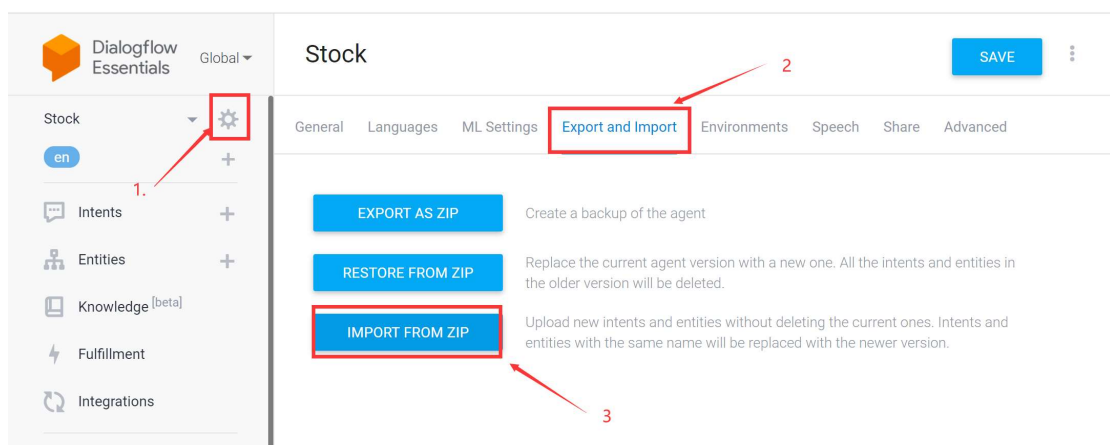


Figure 3. import the agent material

- Find the forward link in Figure 1 and click the Fulfillment in the left menu, then copy the forward link appending the '/google' in the end on URL* Input. The

process is shown in Figure 4. Remember to click save in the end.

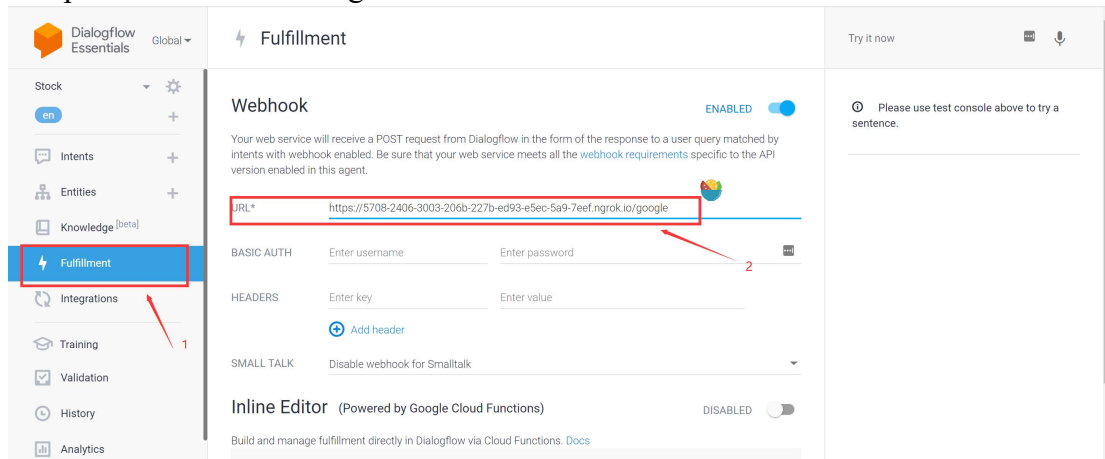


Figure 4. enter the fulfillment backend link

- Run the server.py script to launch our project backend through command:
`python server.py`

The result will shown in Figure 5 if it is running successfully.

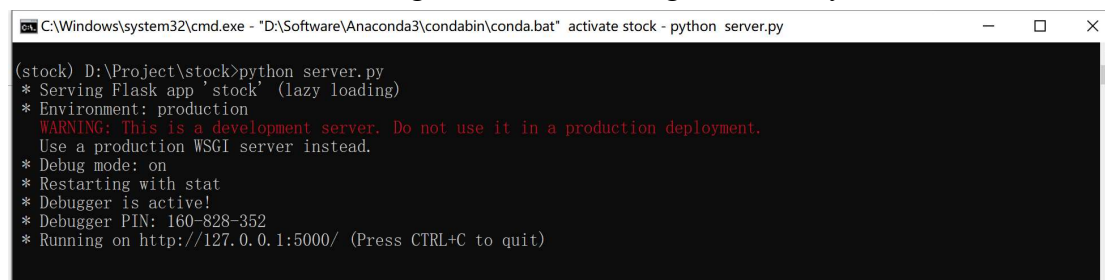


Figure 5. run server.py

- Launch the Chrome browser and type the link: <http://localhost:5000/>

User guide

Launch the project successfully and go to the URL <http://localhost:5000/> , users can interact with system through web UI or system chatbot.

- **Web UI**

The index page show the basic information of all 30 companies shown as Figure 6.

Rank(*market cap)	Name	*Price	Trend(1 month)	Operation
1	Apple AAPL	\$144.84	down	Predict
2	Microsoft MSFT	\$304.21	up	Predict
3	Google GOOG	\$2833.5	down	Predict
4	Amazon AMZN	\$3409.02	down	Predict
5	Facebook FB	\$324.76	down	Predict
6	Tesla TSLA	\$843.03	up	Predict
7	Berkshire Hathaway BRK-A	\$427701.0	down	Predict

Figure 6. index page

30 Companies are ranked by their market capitalization, the information contains the company name, stock symbol, stock price and trend in one month.

Click the red prediction at the end of one row, our system will redirect to new page consisting of detailed and prediction information shown as Figure 7.

Tencent		Share price	Prediction
ICLHY		63.99(1.7976%)	up or down
Rank	*Annual Rate		
8	11.185932746445355		
Market cap	\$ 614.76 Billion		

Figure 7. prediction information

The detailed information is made of company's name, symbol, market capitalization, share price, annual rate (The annual return of stock investment if we apply our machine learning method on investment.) and prediction information

On the other hand, user can search several companies of their interests in the segment above company's table in index page. It is a selection input which user can use to select several options or user can type company name and our system can automatically display the companies that are similar to user's input, shown as Figure 8 and Figure 9.

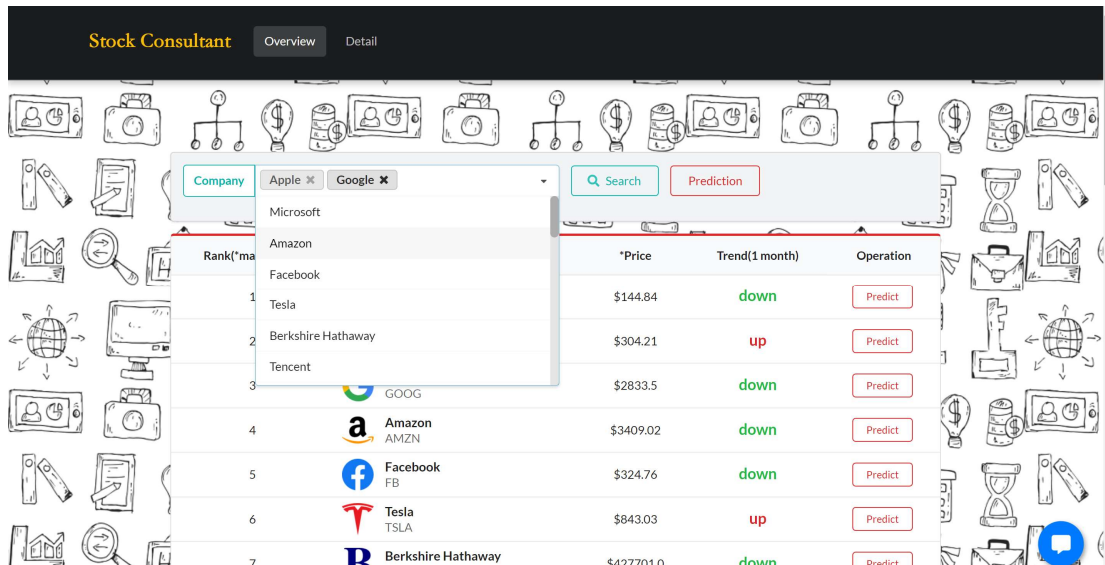


Figure 8. selection input

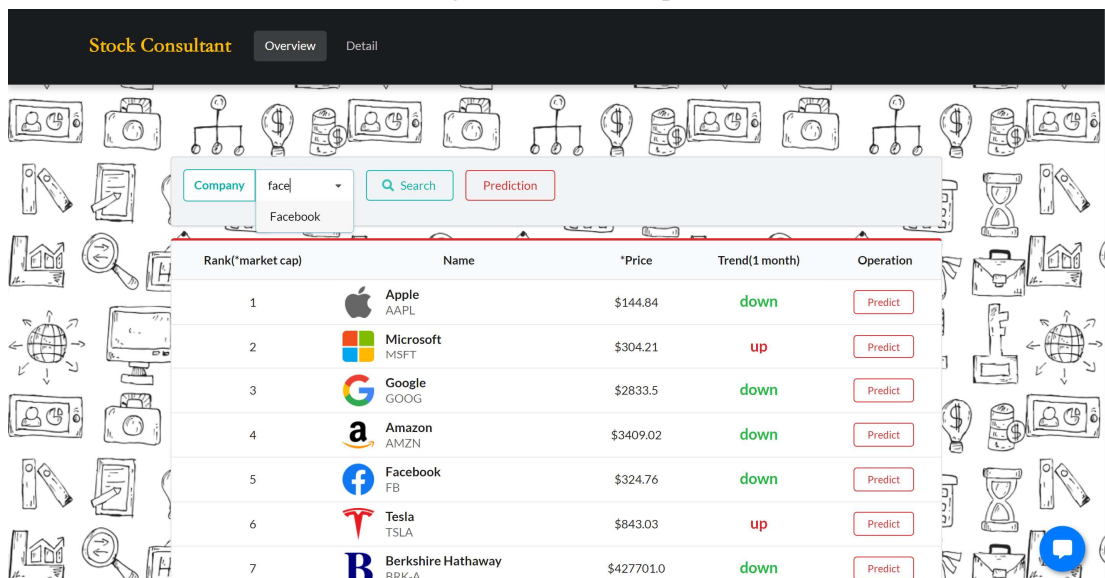


Figure 9. display the companies similar to input

Click the search button, it would return the specific companies to users, which is shown in Figure 10. Or users can click prediction button, the system will redirect to the detail information of selected companies, which is shown in Figure 11.

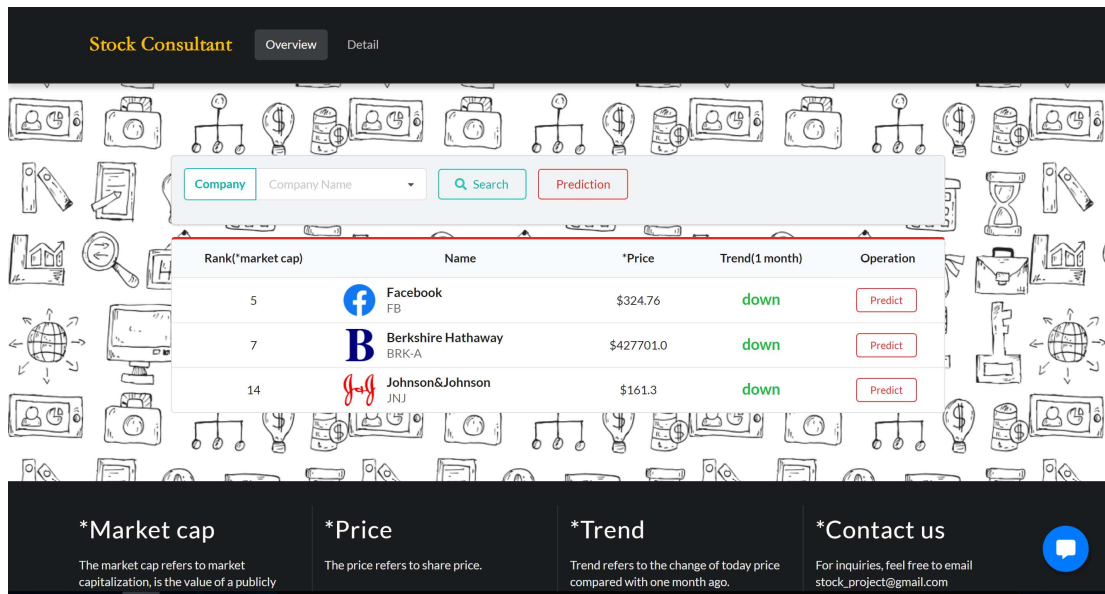


Figure 10. Search result

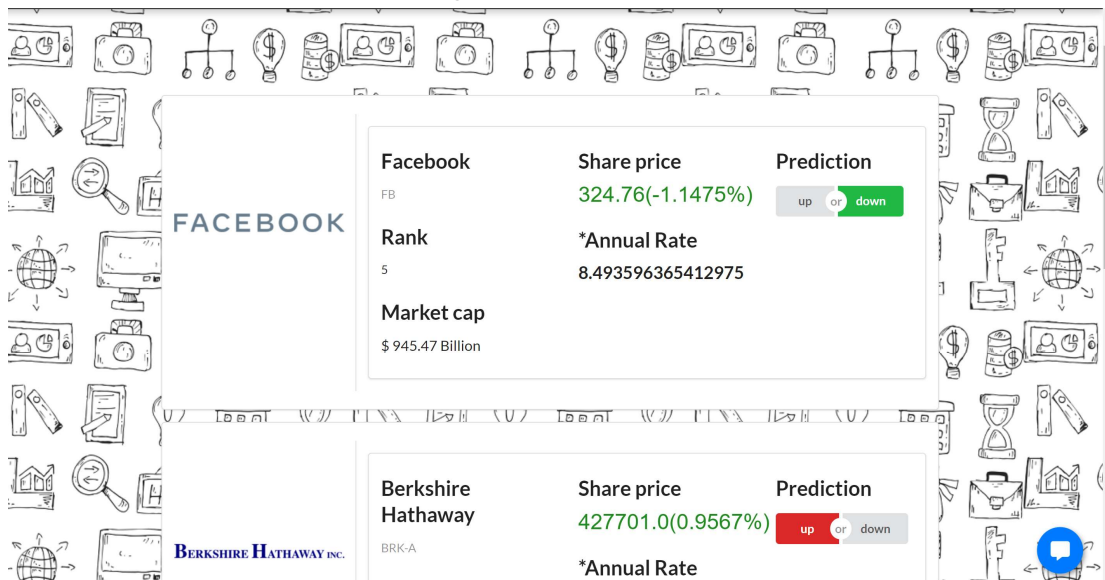


Figure 11. result of prediction for specific companies

● Chatbot

User can also interact with our system through chatbot window in bottom right of interface, which is shown in Figure 12.

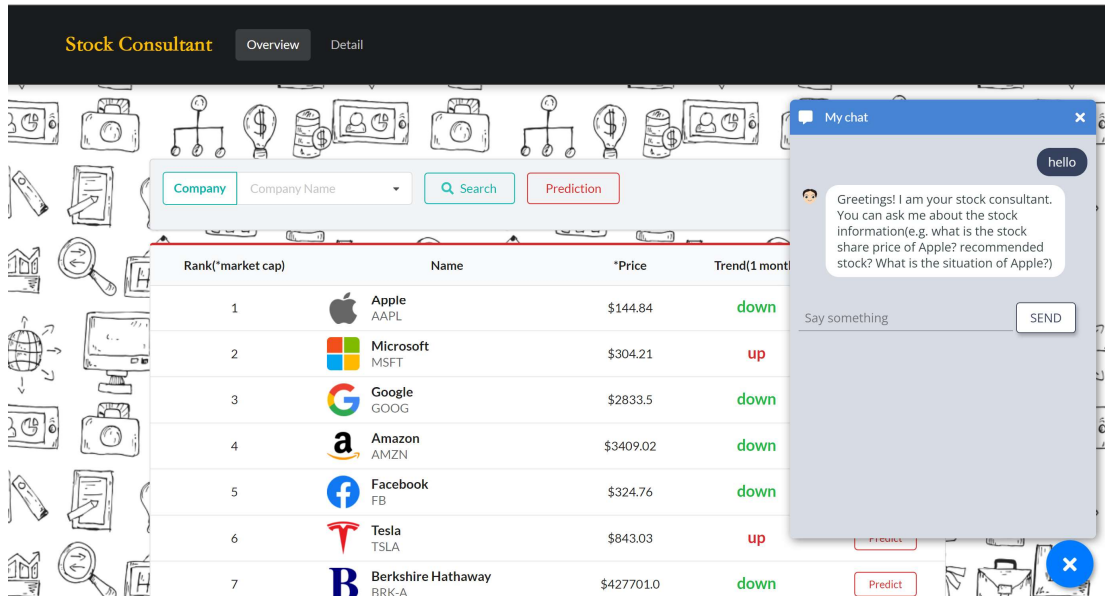


Figure 12. smart stock consultant chat window

Enter the question ‘what is the stock share price of Apple?’, our smart stock consultant will answer the question automatically. The result is shown in Figure 13.

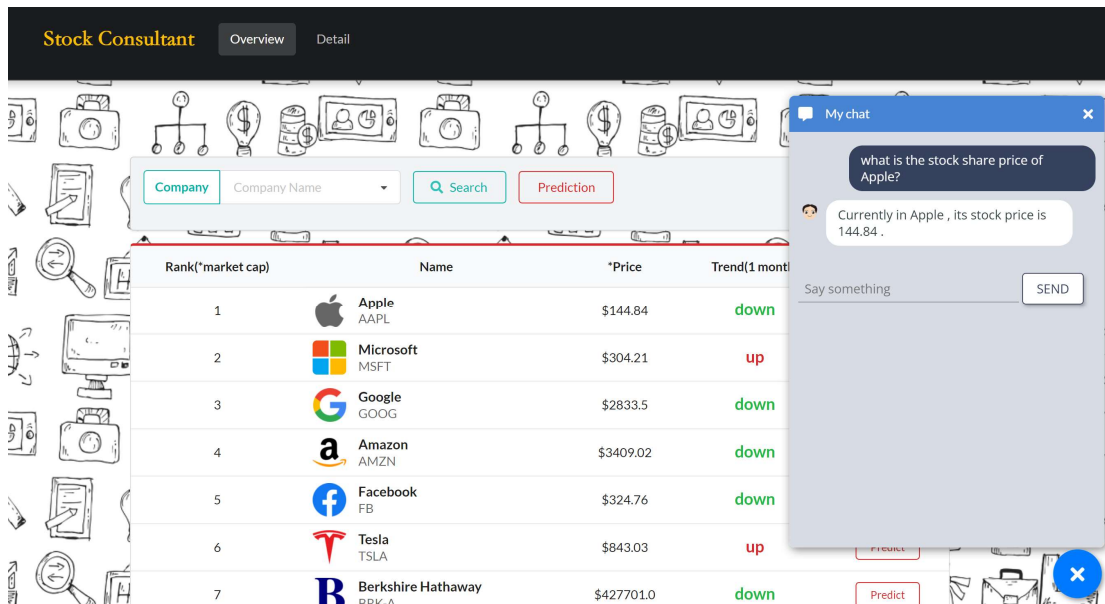


Figure 13. result of querying stock prediction

Figure 14 shows the result of recommendation question.

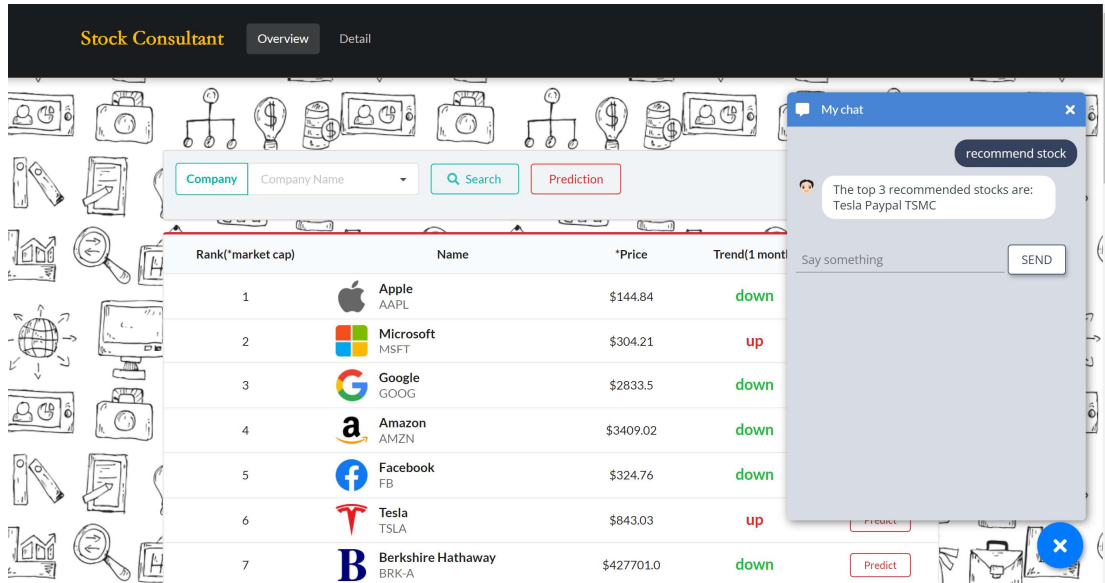


Figure 14. result of querying recommendation stock

Our supported questions are listed in Table 1.

Table 1. supported questions

type	question	answer
help	Hello, greetings, help etc	Hi! I am your stock consultant. You can ask me about the stock information
	Supported companies	We support all companies in this page like Apple, Microsoft, etc.
Information query	what is the stock price of {company}	Currently in {company} , its stock price is {price} .
Prediction query	Should I buy {company} stock? can I buy the stock of Apple?	Currently in {company}, the stock is predicted to go up/down, we recommend you to buy it.
Recommendation	Recommend companies	The top 3 recommended stocks are: {com1},{com2},{com3}