Stock Market Tracking App

Dipali Singh - RA1911030010138

Project Description

In the present times when investors need to be two steps ahead at all time, we need a web-means that can be as fast and efficient. Investors hold back from dabbling in the stock market due to lack of information. Our aim while building this website is to facilitate and assist investors to keep track of the stock market. We want to make a user-friendly website that will allow investors to favourite the stocks they have invested in and track their stocks by analysing the percentage increase or percentage decrease alongside with graphs over a given timeline. The app will be complete with blogs and helpline that will give more insights into the current market status.

Roles and Models

The roles of the different stakeholders are as follows:

Manage and development of the project.

Manage the finances and development.

Manage the marketing and development.

Roles and Models

Stakeholder Name	Activity / Area / Phase	Interest	Influence	Priority (High / Medium/Low)
Regional Head of Sales & Marketing	Subscription using mobile App	High	High	1
Finance Account Receivable consultant	Multiple Currency Payment	High	Low	3
Developer	Development of the app	High	High	1
Stock broker	User	High	Low	3

Roles and Models

Stakeholder Name	Activity / Area / Phase	Interest	Influence	Priority (High / Medium/Low)
Customer	User	High	High	2
Supplier	Make resources available	High	High	1
Investors	Provide financial assistance	High	High	1
Parent companies	Monitor the functioning	Low	High	3
Stock broker	User	High	Low	3

Methodology:

Agile software development

In software development, agile practices involve discovering requirements and developing solutions through the collaborative effort of self-organizing and cross-functional teams and their customer/end user.

Communication Plans for Stakeholders

The different stakeholders involved must have a proper channel of communication to ensure the proper flow of development. Communication is extremely crucial to maintain the quality standard.

A few ways to ensure proper communication are listed below:

- **Frequent meetings over online platforms like g-meet.**
- **Providing a single-page dashboard and communicating via meetings.**
- **Weekly report for High Interest and Low Influence.**

Project Management Plan

Focus Area	Details
Integration Management	Stock market tracking app is a web app that will allow users to track stock market data. Our project team will hold little to no hierarchy with all out teammates working together in collaboration with outside parties. The different parts of the project will be integrated and the change will be managed using agile project methodology.
Scope Management	The scope of our project involves the tracking and transaction of stocks. The different stakeholders are: >Investors >Developers >Stock broker >Customers

Project Management Plan

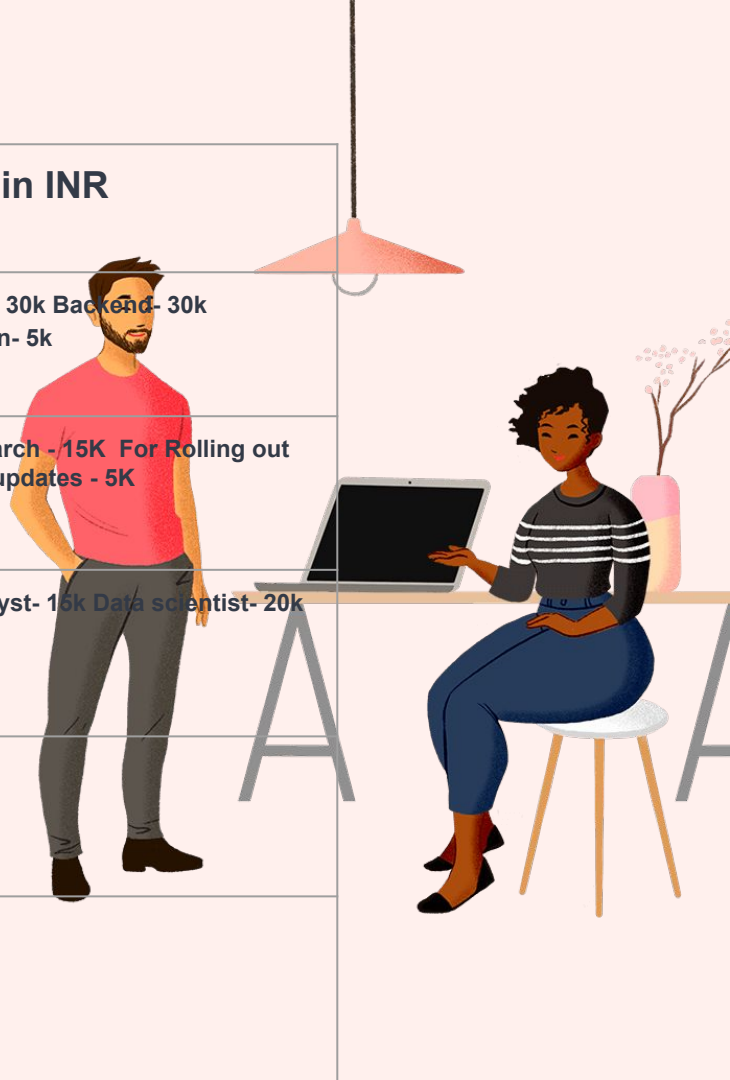
Schedule Management	**Web app with detailed stock market analysis followed by a full stack app. Steps involved are:** • Planning Road map. • Requirement Analysis • Backend Software • Backend Development • Frontend Development • Database Implementation • Testing
Quality Management	**The web app will include the necessary data encryption and will be continuously improved to maintain quality**

Project Management Plan

Resource Management	**Estimate and Manage the need** **People: Dipali Singh** **Finance: 65k** **Physical: Facilities, IT Infrastructure**

Estimation –

Activity Description	Sub - Task Desc.	Efforts in hours	Costs in INR
Design the web app	To create a webapp using python and django	6-12	Frontend- 30k Backend- 30k Integration- 5k
Research and development	Evaluating of software tech trends and incorporating them with updates and patches.	4-8	For Research - 15K For Rolling out patches/ updates - 5K
Data analytics	Administration Data, Database, Management, and evaluating stock market trends.	4-5	Data Analyst- 15k Data scientist- 20k
Identify Data Source for displaying units of Energy Consumption	Go through Interface contract (Application Data Exchange) documents	5	15K
Marketing	Advertisement	8-10	1L



Maintenance and Support Cost

Category	Details	Qty	Cost per annum	Cost per item
People	Network, System, Middleware and DB admin	5	2,000,000	6,000,000
License	Operating System, Database, Middleware, IDE	4	10000	100,000
Infrastructure	Server, Storage and Network	3	20000	400,000

Risk

Risk Identification

Risk identification and categorization:

- **The predictions can be wrong due to inaccuracy in the app.**
- **Sometimes wrong stocks can be shown which may lead to misinformation.**
- **Out of date information can be shown.**
- **Sometimes personalised stocks may be incorrect due to inaccurate predictions.**

List (Describe) Register

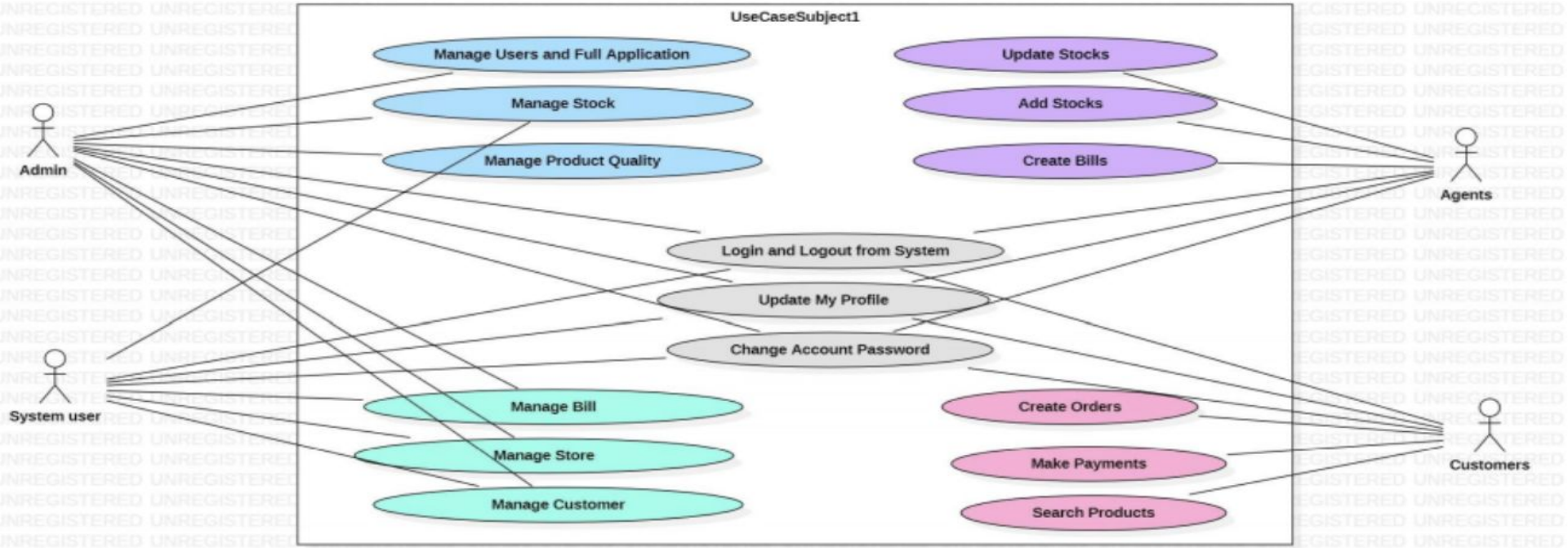
Risk ID#	Risk Description	Impact Description
R01	Hacking of application	Has a high impact as it can leak information
R02	Technical difficulties like Data Security.	High impact technical risk
R03	Unable to meet deadlines.	Low impact risk
R04	Insufficiency of the budget	Medium impact risk as it slows down development
R05	Lack of stakeholder engagement	Medium impact risk

Managing Risk

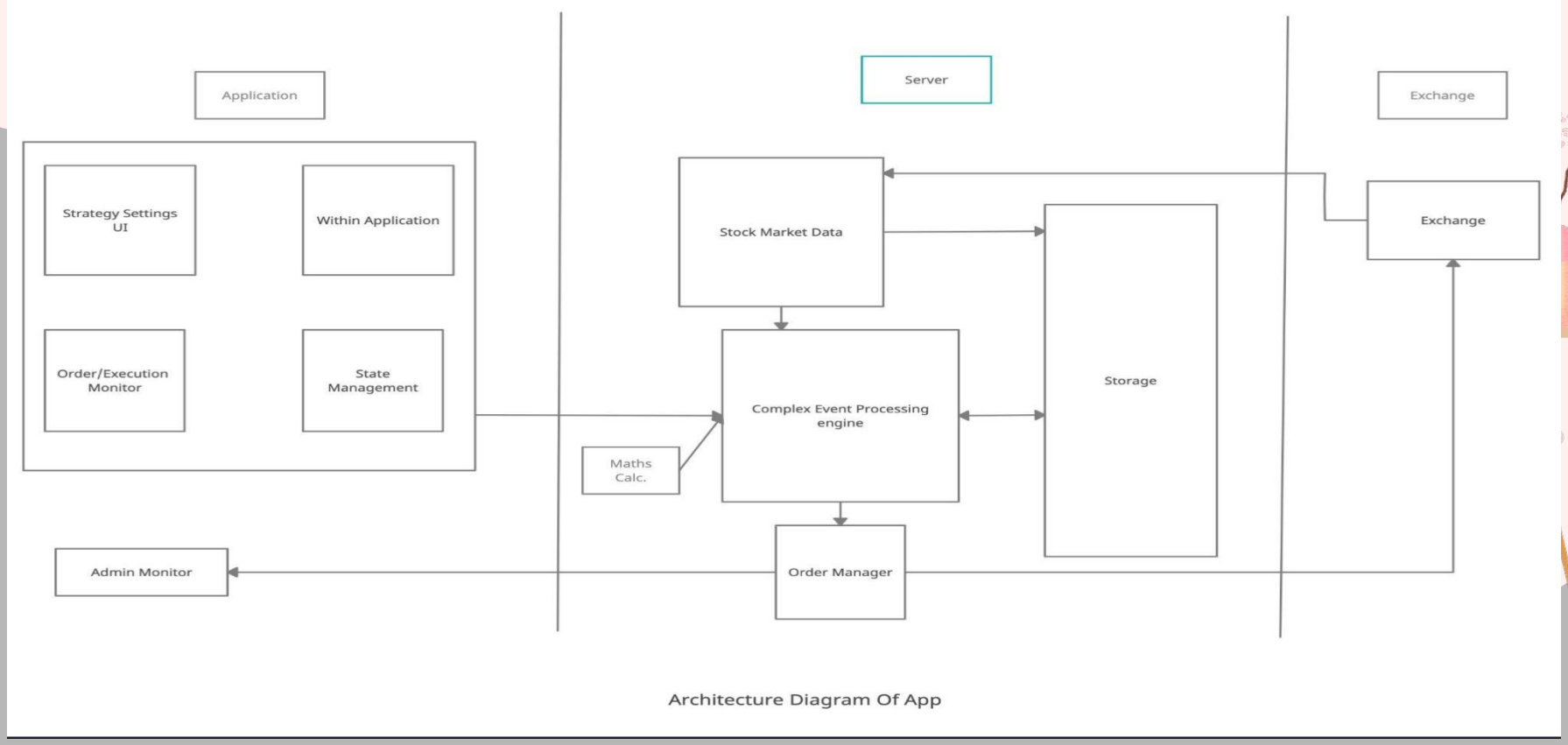
Risk ID#	Status	Risk Appetite	Action
R01	Open	Avoid	Data encryption
R02	Open	Mitigate	Resolve technical issues
R03	Open	Mitigate	Follow the game plan
R04	Open	Avoid	Stick to the budget
R05	Open	Accept	Pitch the product

Architecture and Design of the System

Use case Diagram - This use case diagram is a graphic depiction of the interactions among the elements of the Stock Management System. It represents the methodology used in system analysis to identify, clarify, and organize system requirements of Stock Management System.



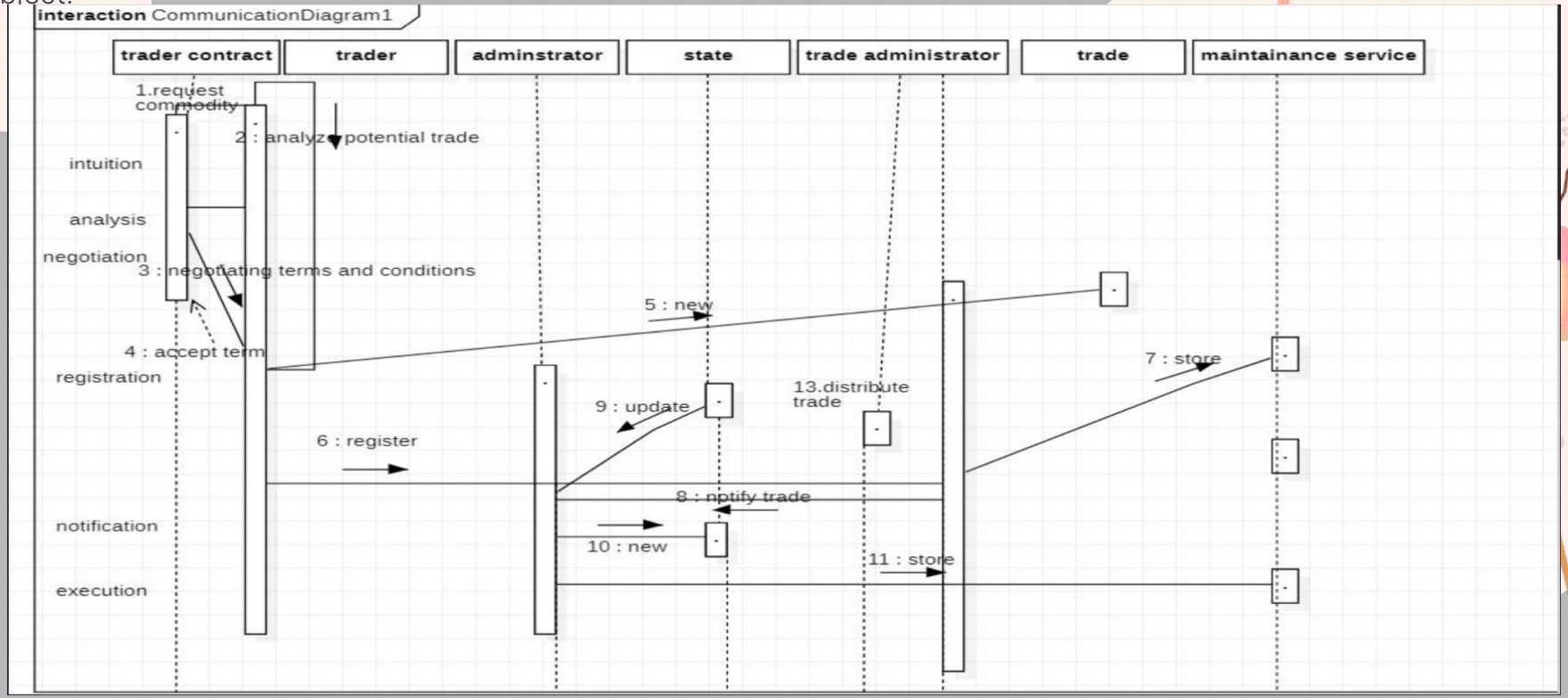
Architecture Diagram – An architectural diagram is a diagram of a system that is used to abstract the overall outline of the software system and the relationships, constraints, and boundaries between components. It is an important tool as it provides an overall view of the physical deployment of the software system and its evolution roadmap.



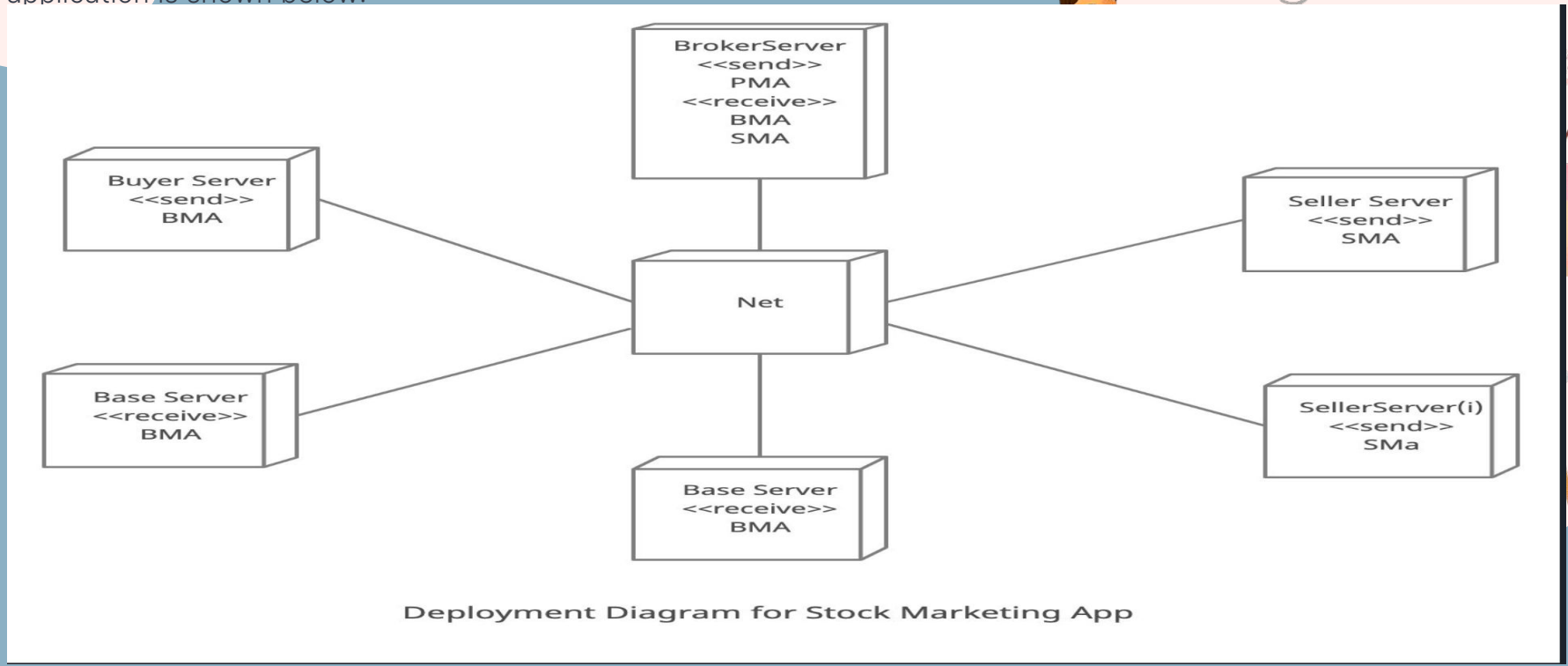
Architecture Diagram Of App

Collaboration Diagram

– A collaboration diagram, also known as a communication diagram, is an illustration of the relationships and interactions among software objects in the Unified Modeling Language (UML). These diagrams can be used to portray the dynamic behavior of a particular use case and define the role of each object.

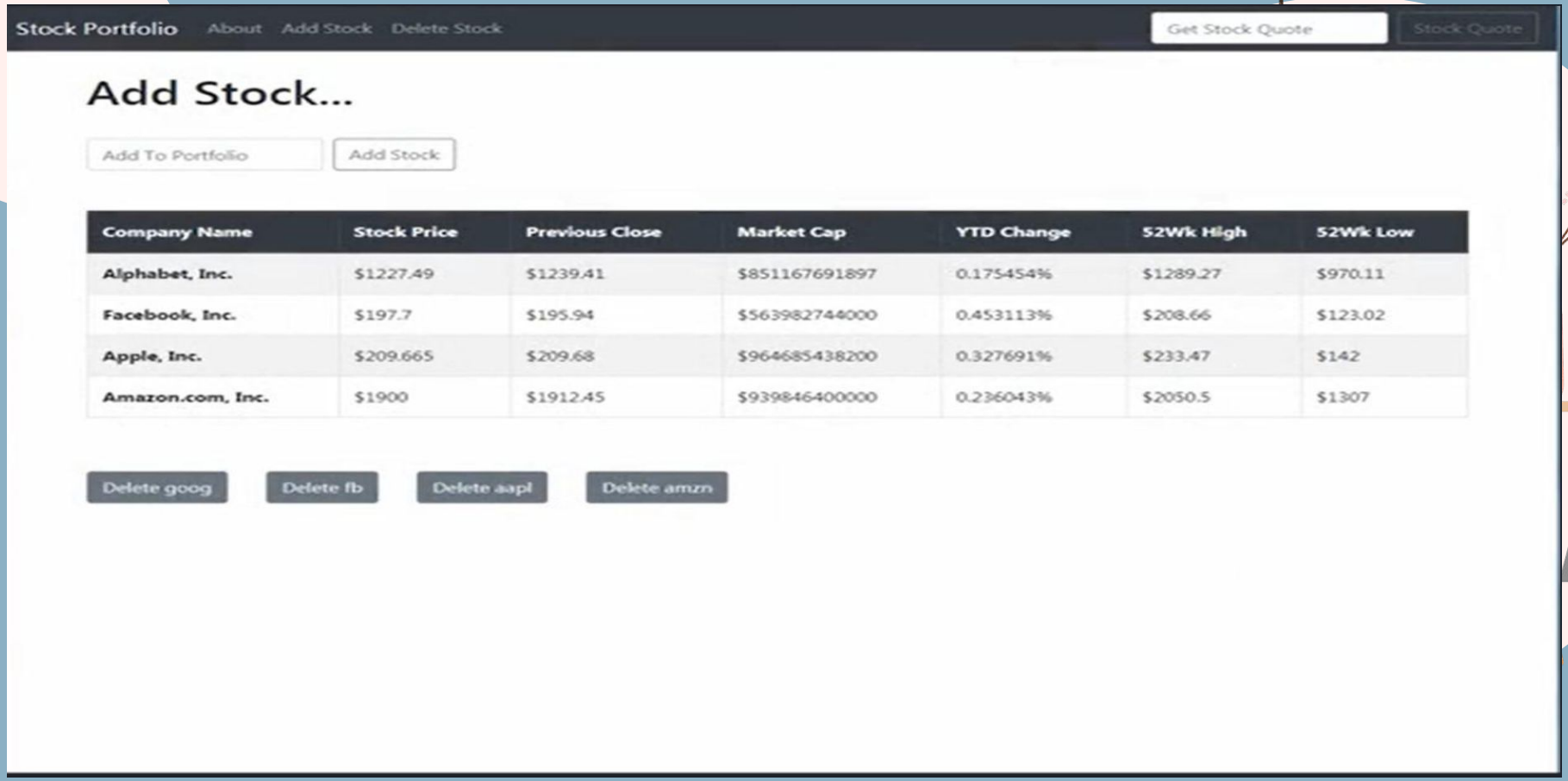


Deployment Diagram – A UML deployment diagram is a diagram that shows the configuration of run-time processing nodes and the components that live on them. Deployment diagrams are a kind of structure diagram used in modeling the physical aspects of an object-oriented system. The deployment diagram of our application is shown below:



Deployment Diagram for Stock Marketing App

Sample Frontend Design -



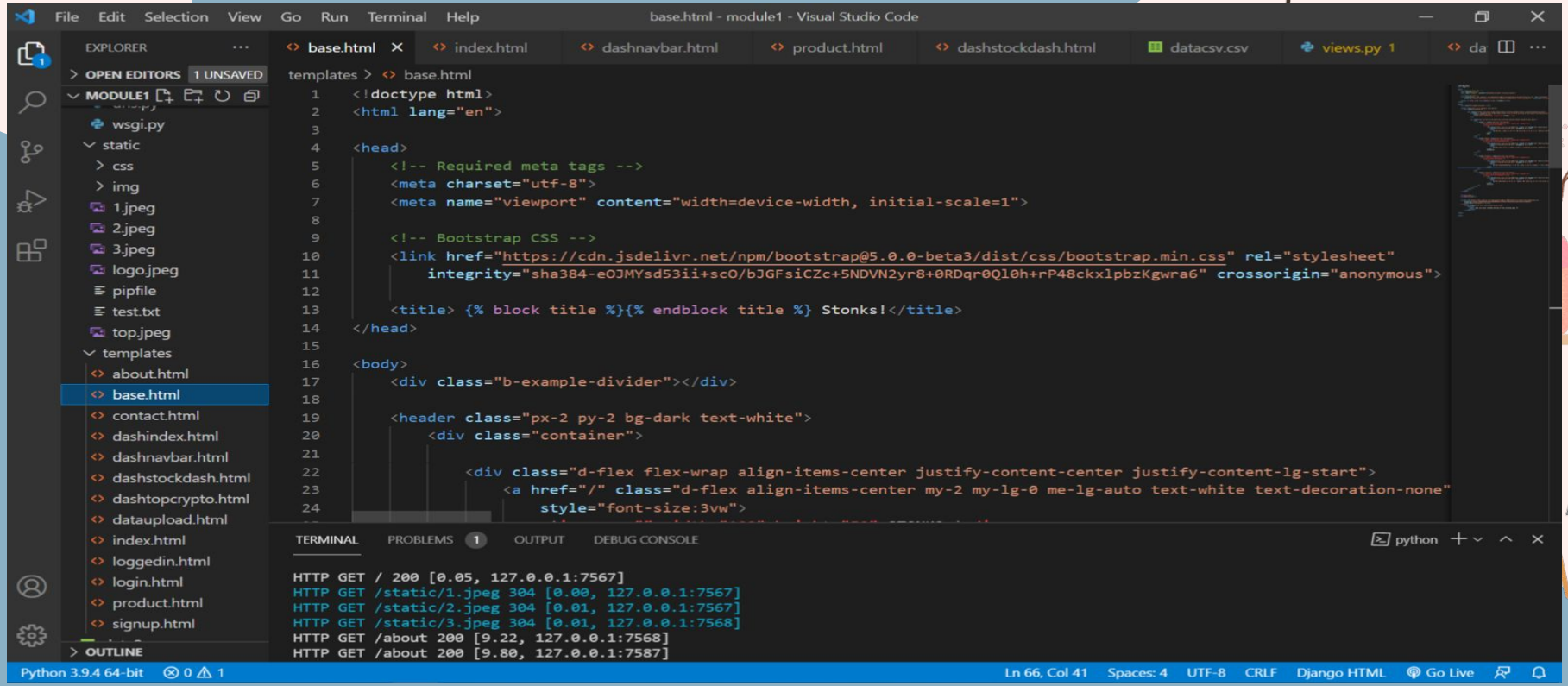
Implementation of Module 1

Code of Module 1

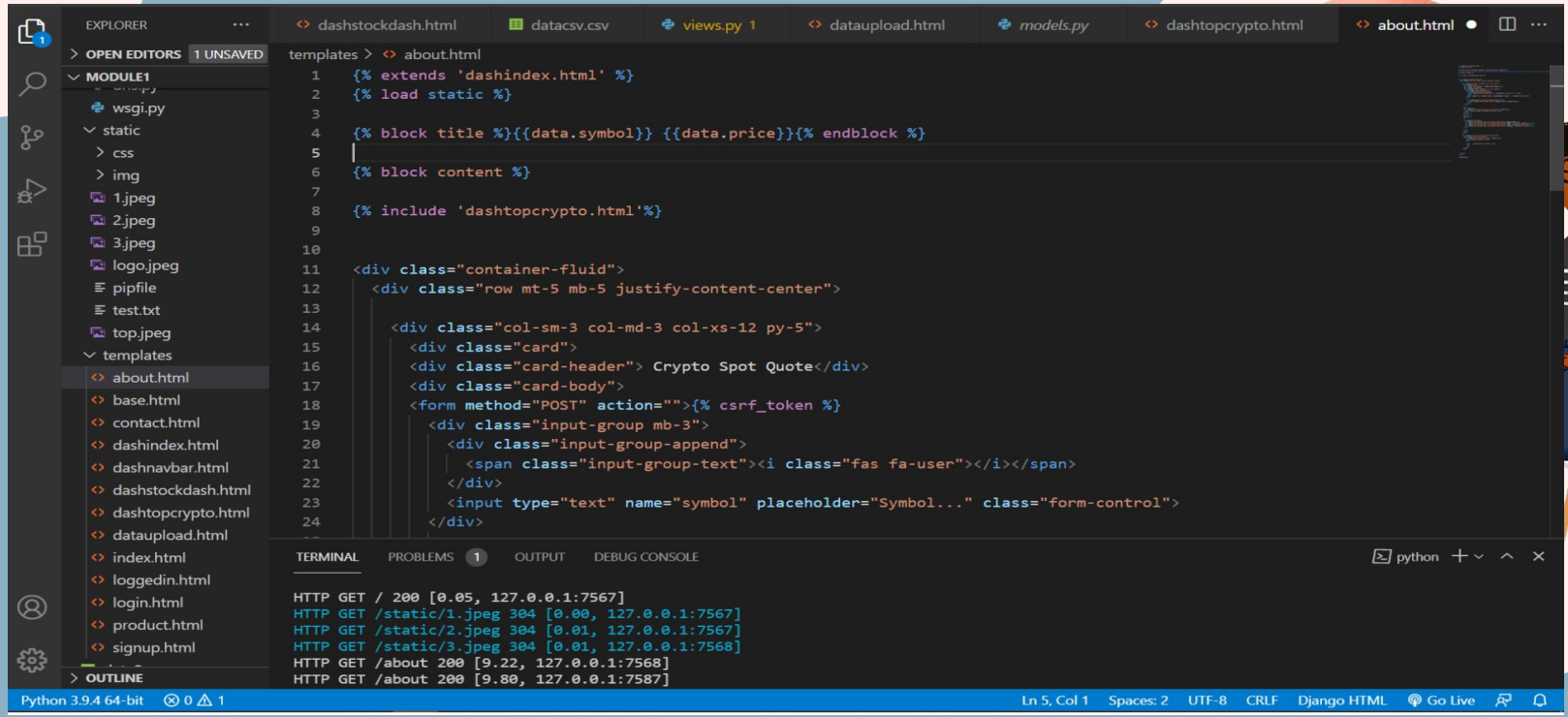
The code for the first module is can be found in the following link:

https://drive.google.com/drive/u/0/folders/1d114nrlDAKcCiGxYD5l6gC7bBieDlIsB

Code:


File Edit Selection View Go Run Terminal Help
base.html - module1 - Visual Studio Code
EXPLORER
OPEN EDITORS 1 UNSAVED
MODULE1
wsgi.py
static
css
img
1.jpeg
2.jpeg
3.jpeg
logo.jpeg
pipfile
test.txt
top.jpeg
templates
about.html
base.html
contact.html
dashindex.html
dashnavbar.html
dashstockdash.html
dashtopcrypto.html
dataupload.html
index.html
loggedin.html
login.html
product.html
signup.html
OUTLINE
base.html
index.html
dashnavbar.html
product.html
dashstockdash.html
datacsv.csv
views.py 1
templates > base.html
1 <!doctype html>
2 <html lang="en">
3
4 <head>
5 <!-- Required meta tags -->
6 <meta charset="utf-8">
7 <meta name="viewport" content="width=device-width, initial-scale=1">
8
9 <!-- Bootstrap CSS -->
10 <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta3/dist/css/bootstrap.min.css" rel="stylesheet"
11 integrity="sha384-eOJMYsd53ii+scO/bJGFsiCZc+5NDVN2yr8+0RDqr0Ql0h+rP48ckxlpbzKgwra6" crossorigin="anonymous">
12
13 <title> {% block title %}{% endblock title %} Stonks!</title>
14 </head>
15
16 <body>
17
18
19 <header class="px-2 py-2 bg-dark text-white">
20
21
22
23 <a href="/" class="d-flex align-items-center my-2 my-lg-0 me-lg-auto text-white text-decoration-none"
24 style="font-size:3vw">
TERMINAL
PROBLEMS 1
OUTPUT
DEBUG CONSOLE
python
HTTP GET / 200 [0.05, 127.0.0.1:7567]
HTTP GET /static/1.jpeg 304 [0.00, 127.0.0.1:7567]
HTTP GET /static/2.jpeg 304 [0.01, 127.0.0.1:7567]
HTTP GET /static/3.jpeg 304 [0.01, 127.0.0.1:7568]
HTTP GET /about 200 [9.22, 127.0.0.1:7568]
HTTP GET /about 200 [9.80, 127.0.0.1:7587]
Python 3.9.4 64-bit
0 1
Ln 66, Col 41
Spaces: 4
UTF-8
CRLF
Django HTML
Go Live

Code:


EXPLORER
dashstockdash.html
datacsv.csv
views.py 1
dataupload.html
models.py
dashtopcrypto.html
about.html
OPEN EDITORS 1 UNSAVED
MODULE1
wsgi.py
static
css
img
1.jpeg
2.jpeg
3.jpeg
logo.jpeg
pipfile
test.txt
top.jpeg
templates
about.html
base.html
contact.html
dashindex.html
dashnavbar.html
dashstockdash.html
dashtopcrypto.html
dataupload.html
index.html
loggedin.html
login.html
product.html
signup.html
OUTLINE
templates > about.html
{% extends 'dashindex.html' %}
{% load static %}
{% block title %}{{data.symbol}} {{data.price}}{% endblock %}
{% block content %}
{% include 'dashtopcrypto.html'%}

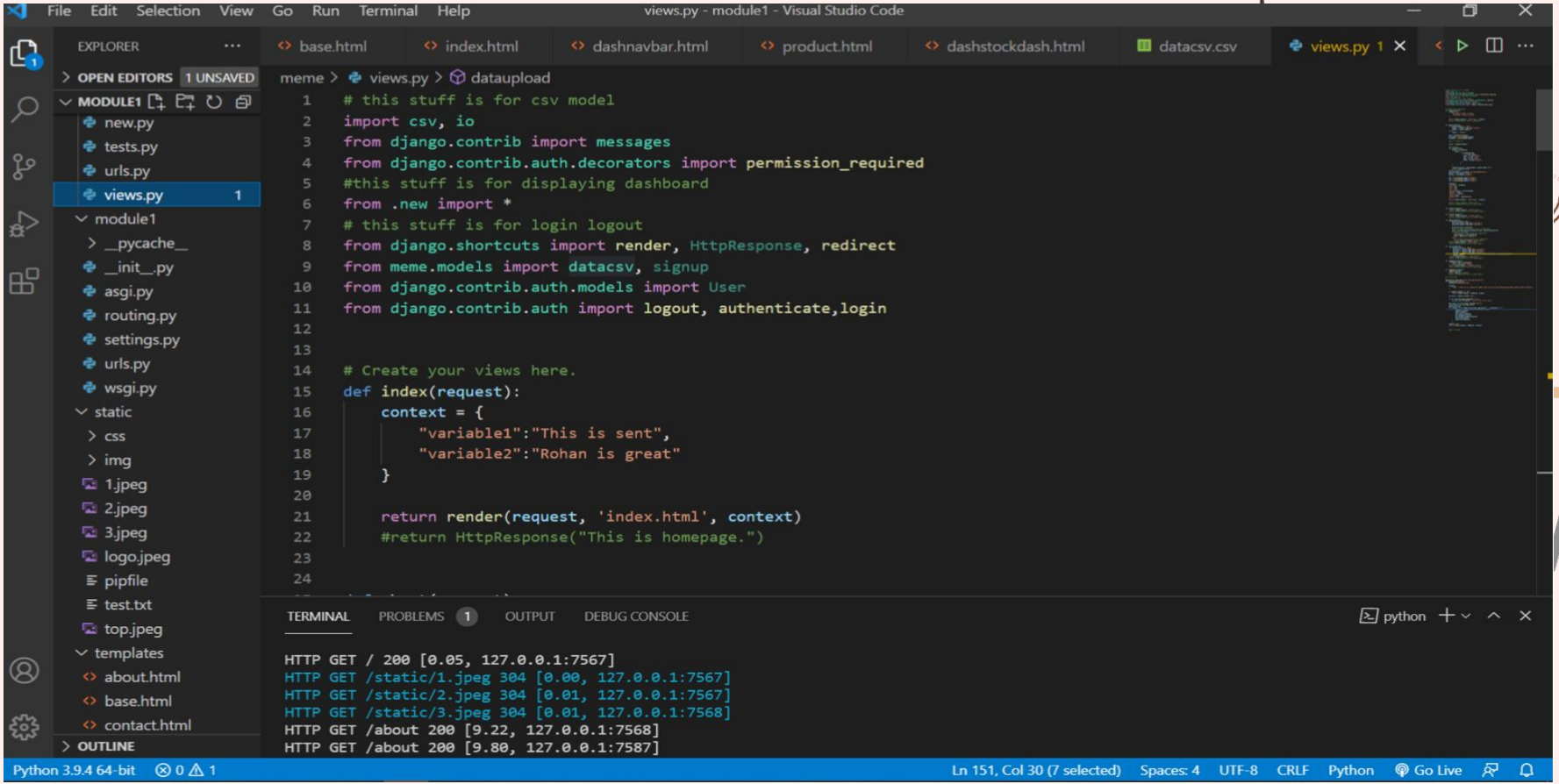
 Crypto Spot Quote

<form method="POST" action="">{% csrf_token %}

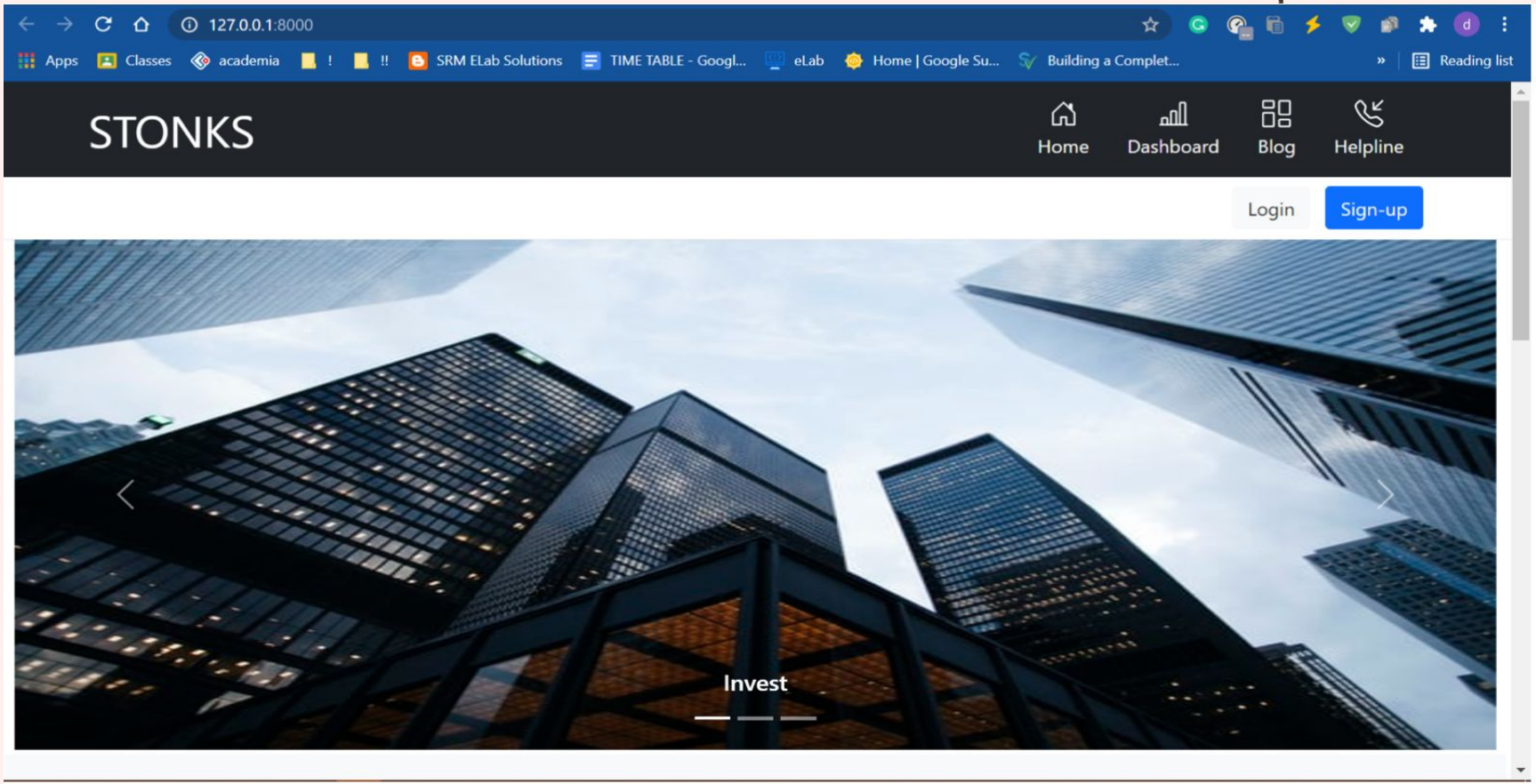
<input type="text" name="symbol" placeholder="Symbol..." class="form-control">

TERMINAL
PROBLEMS 1
OUTPUT
DEBUG CONSOLE
python
HTTP GET / 200 [0.05, 127.0.0.1:7567]
HTTP GET /static/1.jpeg 304 [0.00, 127.0.0.1:7567]
HTTP GET /static/2.jpeg 304 [0.01, 127.0.0.1:7567]
HTTP GET /static/3.jpeg 304 [0.01, 127.0.0.1:7568]
HTTP GET /about 200 [9.22, 127.0.0.1:7568]
HTTP GET /about 200 [9.80, 127.0.0.1:7587]
Python 3.9.4 64-bit
Ln 5, Col 1
Spaces: 2
UTF-8
CRLF
Django HTML
Go Live

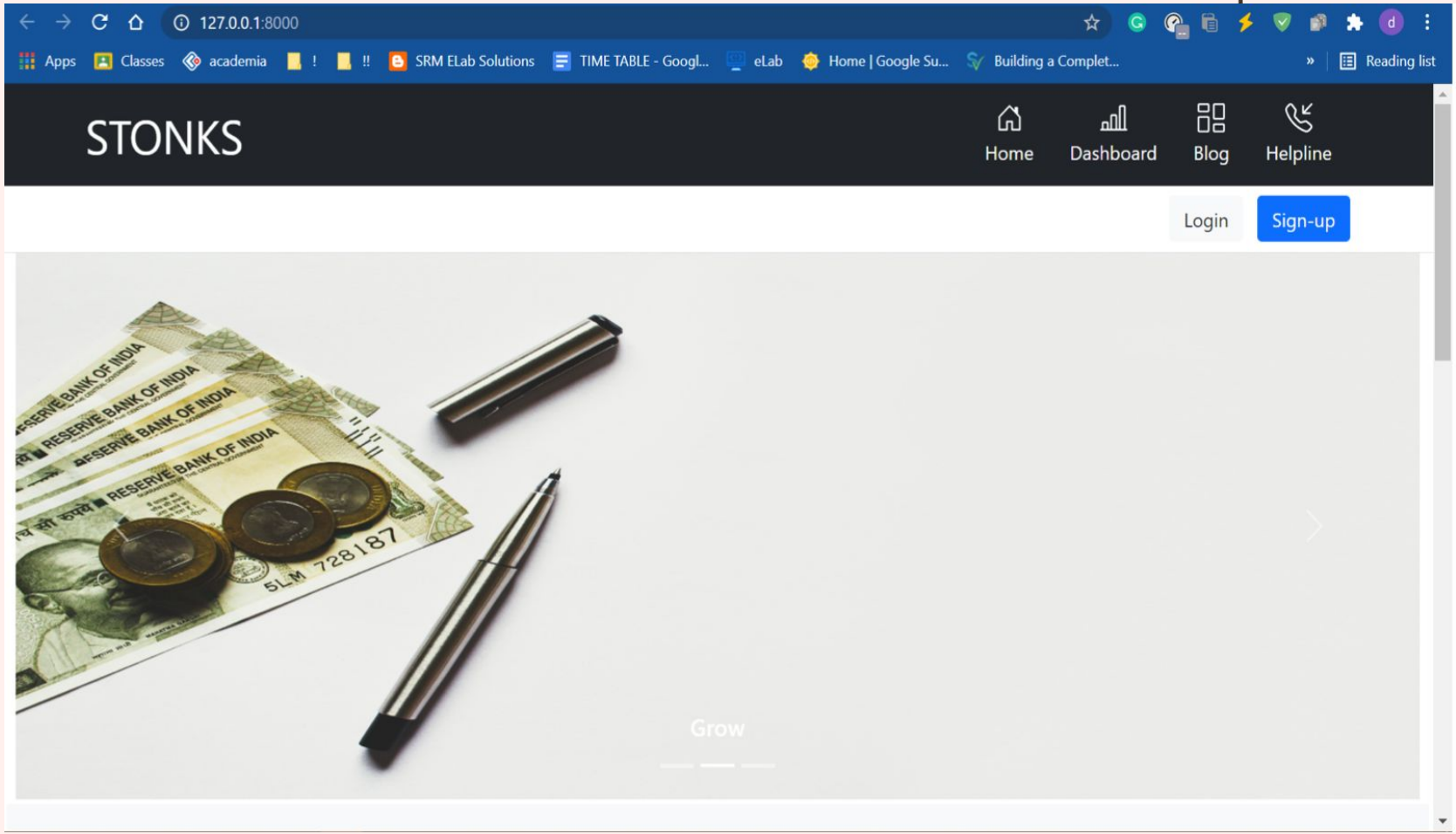
Code:


File Edit Selection View Go Run Terminal Help
views.py - module1 - Visual Studio Code
EXPLORER
OPEN EDITORS 1 UNSAVED
MODULE1
new.py
tests.py
urls.py
views.py 1
module1
__pycache__
__init__.py
asgi.py
routing.py
settings.py
urls.py
wsgi.py
static
css
img
1.jpeg
2.jpeg
3.jpeg
logo.jpeg
pipfile
test.txt
top.jpeg
templates
about.html
base.html
contact.html
OUTLINE
base.html
index.html
dashnavbar.html
product.html
dashstockdash.html
datacsv.csv
views.py 1
meme > views.py > dataupload
1 # this stuff is for csv model
2 import csv, io
3 from django.contrib import messages
4 from django.contrib.auth.decorators import permission_required
5 #this stuff is for displaying dashboard
6 from .new import *
7 # this stuff is for login logout
8 from django.shortcuts import render, HttpResponse, redirect
9 from meme.models import datacsv, signup
10 from django.contrib.auth.models import User
11 from django.contrib.auth import logout, authenticate,login
12
13
14 # Create your views here.
15 def index(request):
16 context = {
17 "variable1":"This is sent",
18 "variable2":"Rohan is great"
19 }
20
21 return render(request, 'index.html', context)
22 #return HttpResponse("This is homepage.")
23
24
TERMINAL
PROBLEMS 1
OUTPUT
DEBUG CONSOLE
python
HTTP GET / 200 [0.05, 127.0.0.1:7567]
HTTP GET /static/1.jpeg 304 [0.00, 127.0.0.1:7567]
HTTP GET /static/2.jpeg 304 [0.01, 127.0.0.1:7567]
HTTP GET /static/3.jpeg 304 [0.01, 127.0.0.1:7568]
HTTP GET /about 200 [9.22, 127.0.0.1:7568]
HTTP GET /about 200 [9.80, 127.0.0.1:7587]
Python 3.9.4 64-bit
0 1
Ln 151, Col 30 (7 selected)
Spaces: 4
UTF-8
CRLF
Python
Go Live

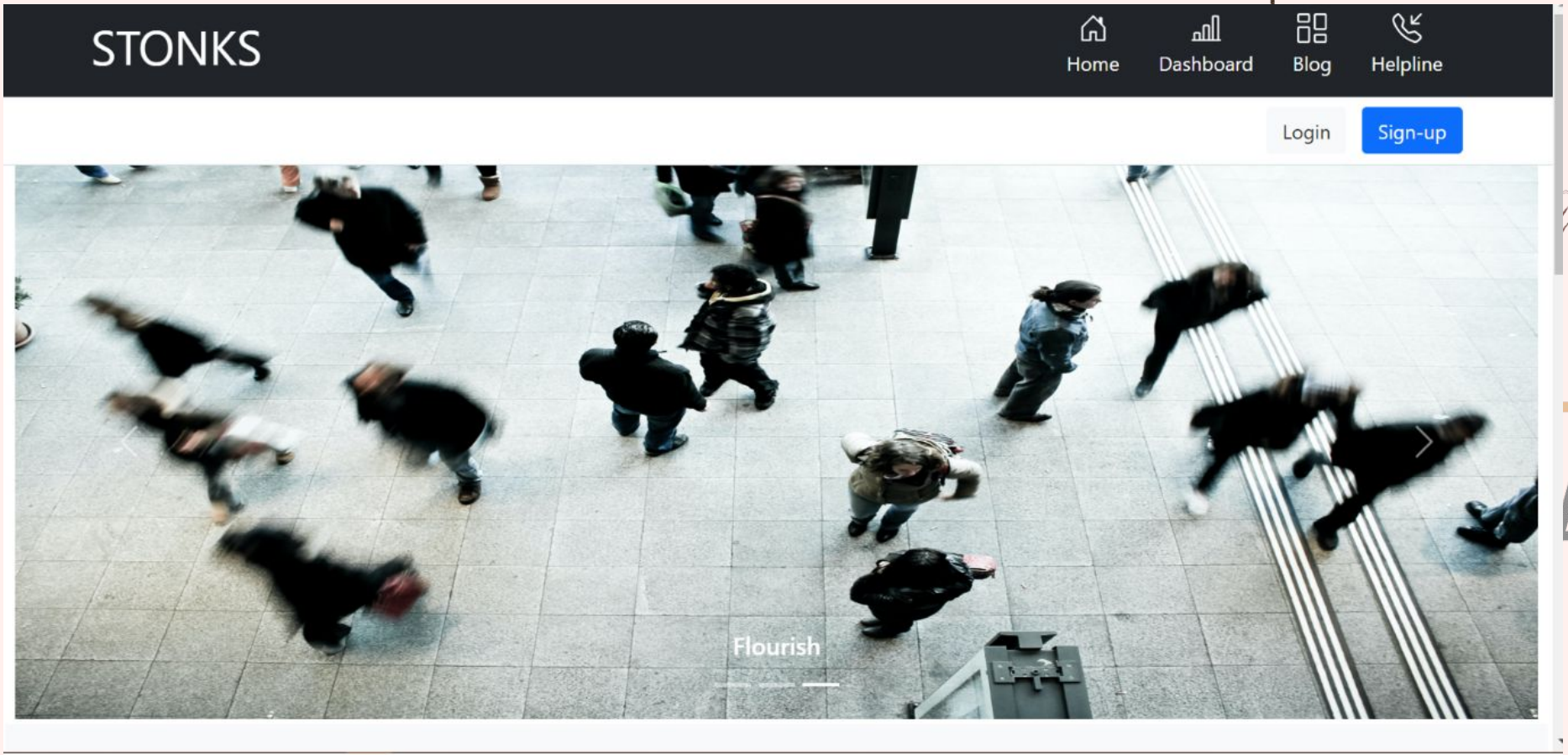
Frontend


127.0.0.1:8000
Apps
Classes
academia
SRM ELab Solutions
TIME TABLE - Googl...
eLab
Home | Google Su...
Building a Complet...
Reading list
STONKS
Home
Dashboard
Blog
Helpline
Login
Sign-up
Invest

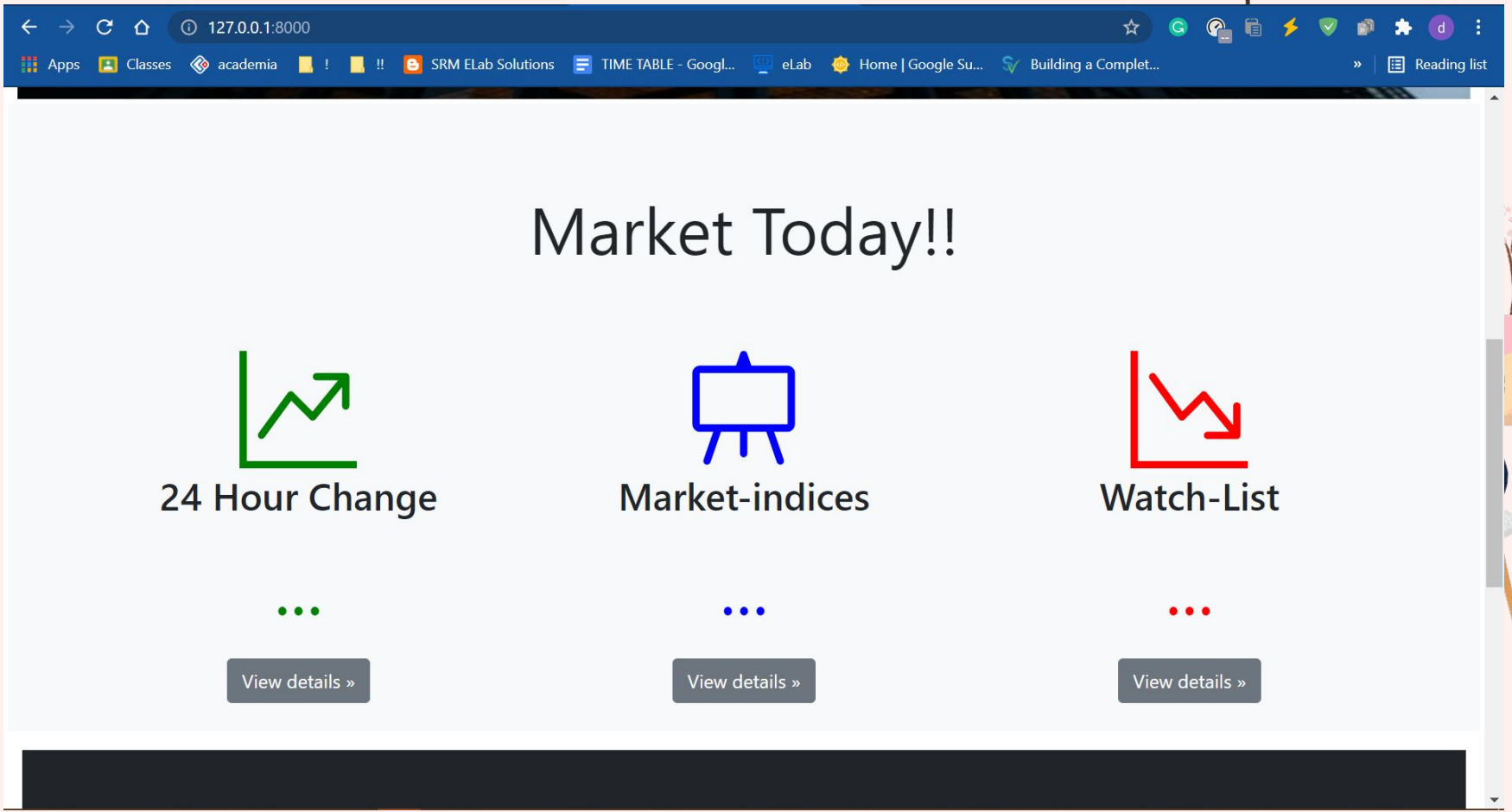
Frontend


127.0.0.1:8000
Apps
Classes
academia
SRM ELab Solutions
TIME TABLE - Googl...
eLab
Home | Google Su...
Building a Complet...
Reading list
STONKS
Home
Dashboard
Blog
Helpline
Login
Sign-up
Grow

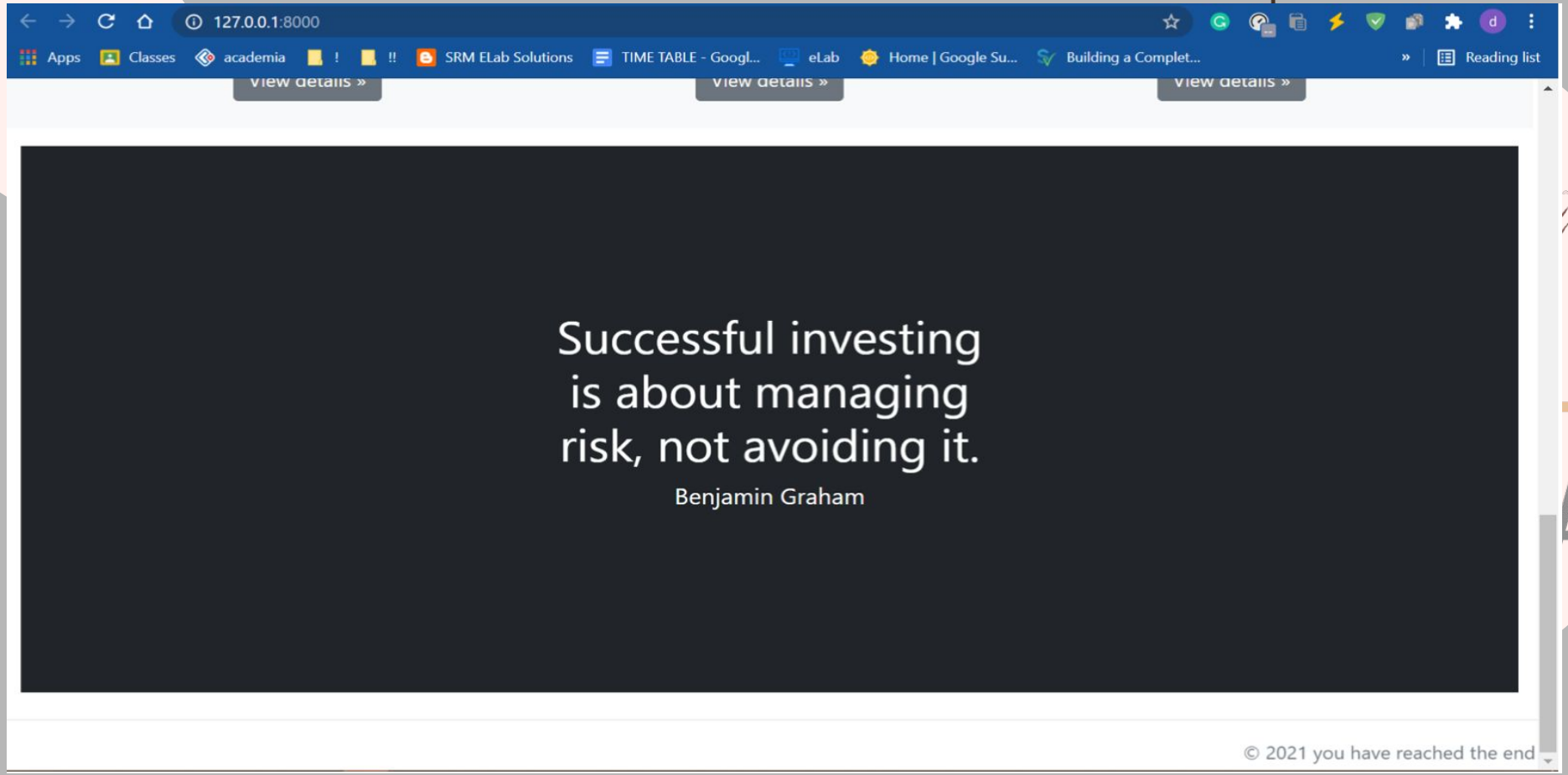
Frontend


STONKS
Home
Dashboard
Blog
Helpline
Login
Sign-up
Flourish

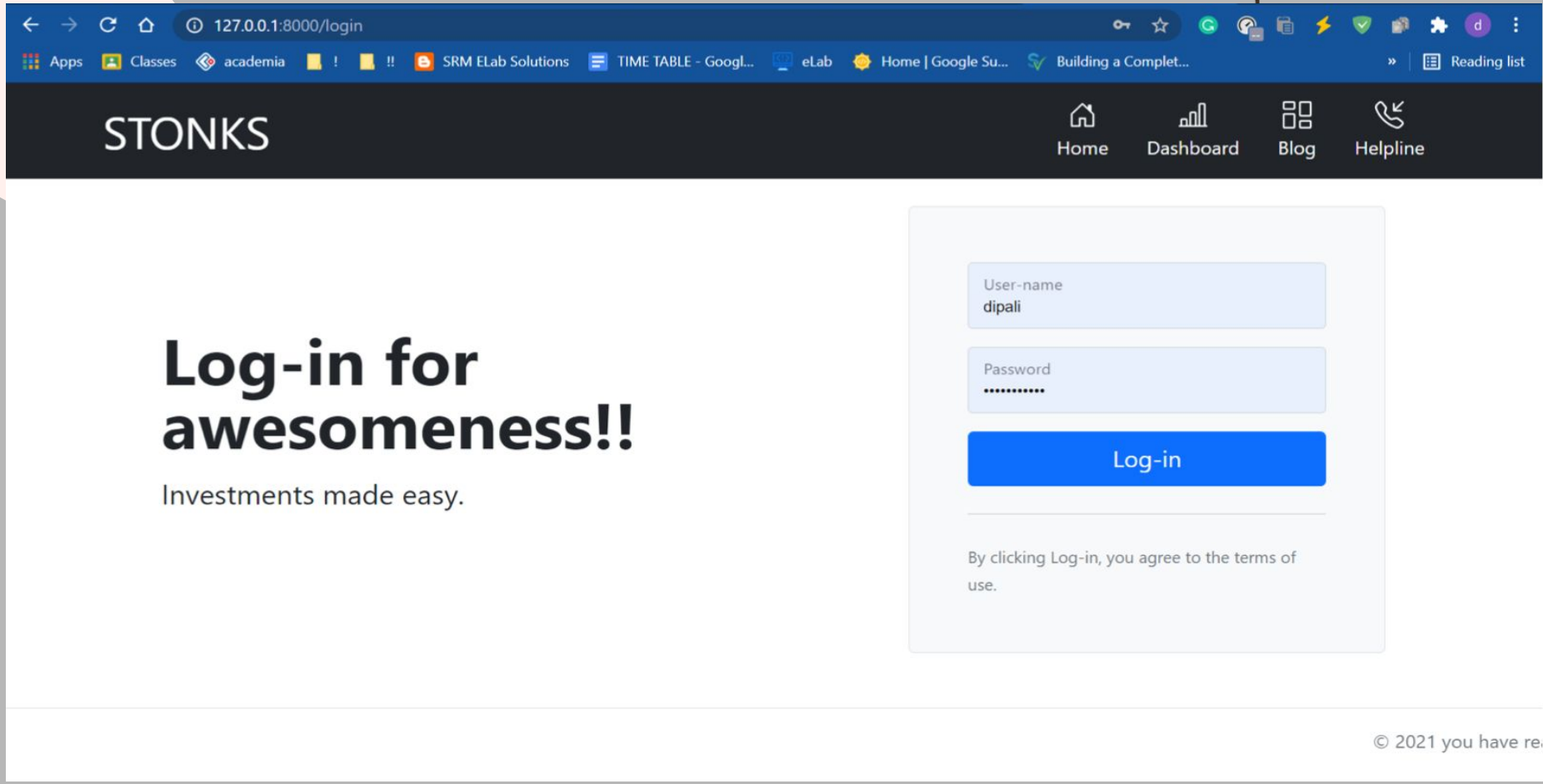
Frontend


127.0.0.1:8000
Apps
Classes
academia
SRM ELab Solutions
TIME TABLE - Googl...
eLab
Home | Google Su...
Building a Complet...
Reading list
Market Today!!
24 Hour Change
Market-indices
Watch-List
View details »
View details »
View details »

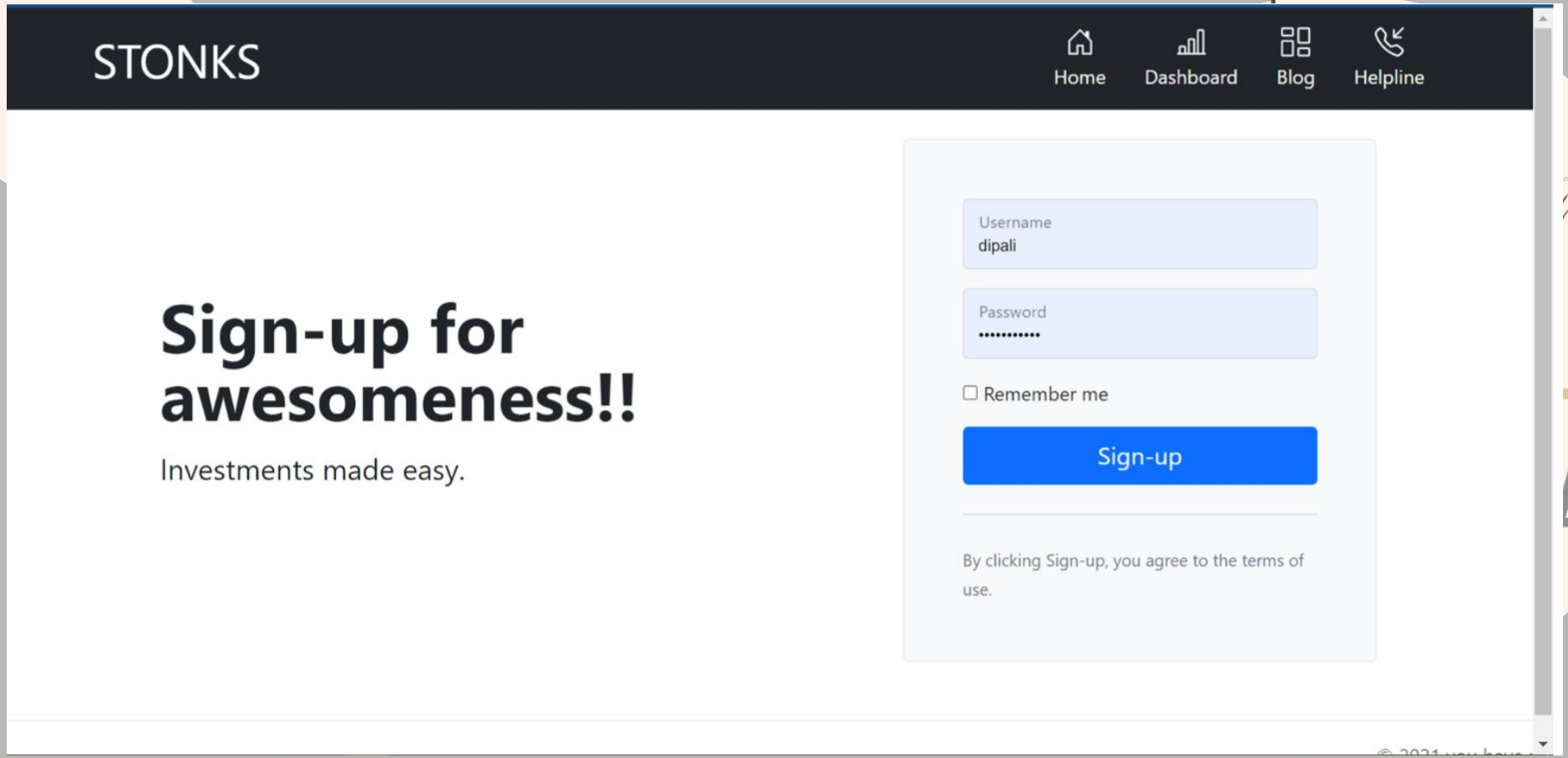
Frontend


127.0.0.1:8000
Apps
Classes
academia
SRM ELab Solutions
TIME TABLE - Googl...
eLab
Home | Google Su...
Building a Complet...
Reading list
View details »
View details »
View details »
Successful investing is about managing risk, not avoiding it.
Benjamin Graham
© 2021 you have reached the end

Frontend


127.0.0.1:8000/login
Apps
Classes
academia
SRM ELab Solutions
TIME TABLE - Googl...
eLab
Home | Google Su...
Building a Complet...
Reading list
STONKS
Home
Dashboard
Blog
Helpline
Log-in for awesomeness!!
Investments made easy.
User-name
dipali
Password
Log-in
By clicking Log-in, you agree to the terms of use.
© 2021 you have re

Frontend


STONKS
Home
Dashboard
Blog
Helpline
Sign-up for awesomeness!!
Investments made easy.
Username
dipali
Password
Remember me
Sign-up
By clicking Sign-up, you agree to the terms of use.

Implementation of Module 2

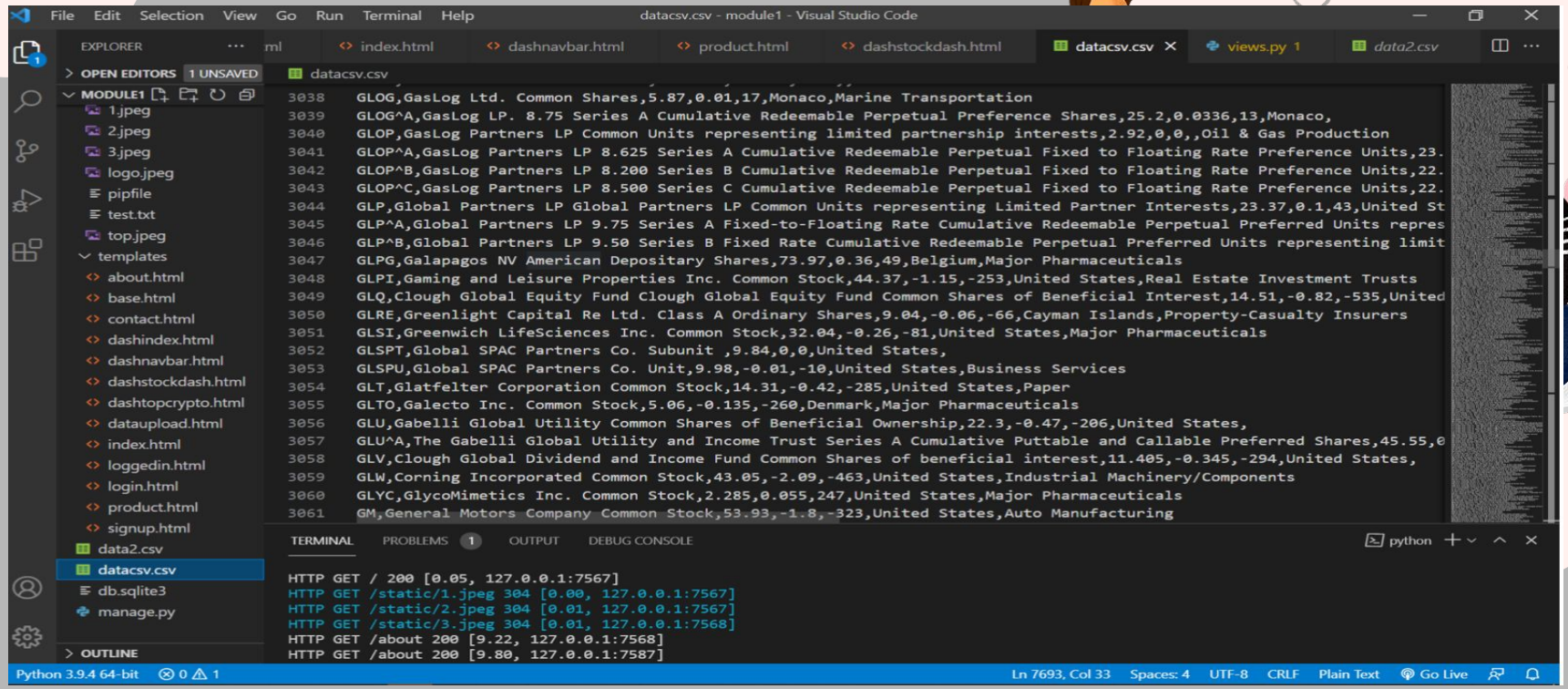
Code of Module 2

The code and the data for back-end can be found in the following link:

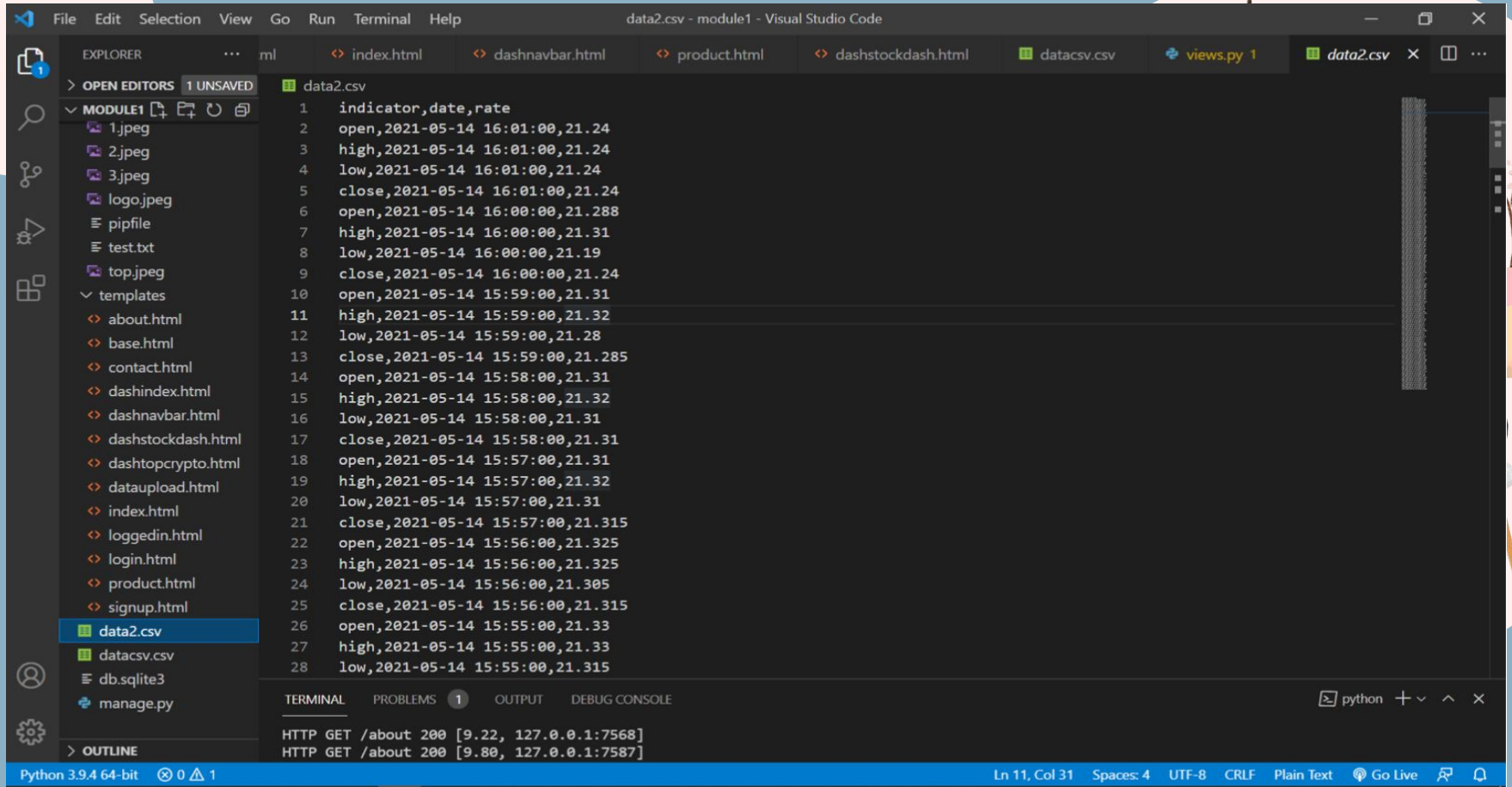
https://drive.google.com/drive/u/0/folders/1d114nrIDAKcCiGxYD5l6gC7bBieDIlsB

The data of around 9000 companies in stock-market:

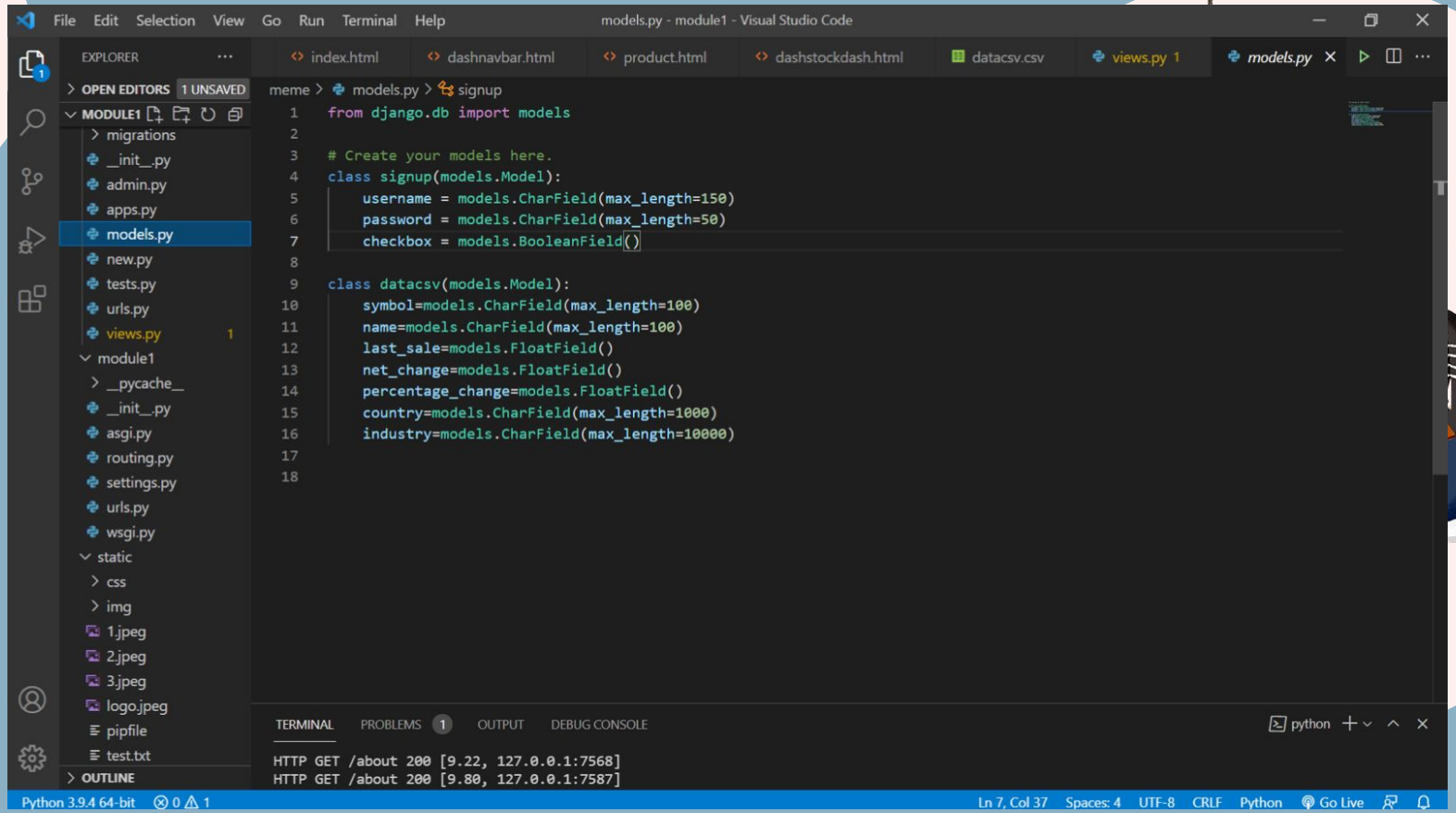
The Data of around 7000 companies in Stock Market



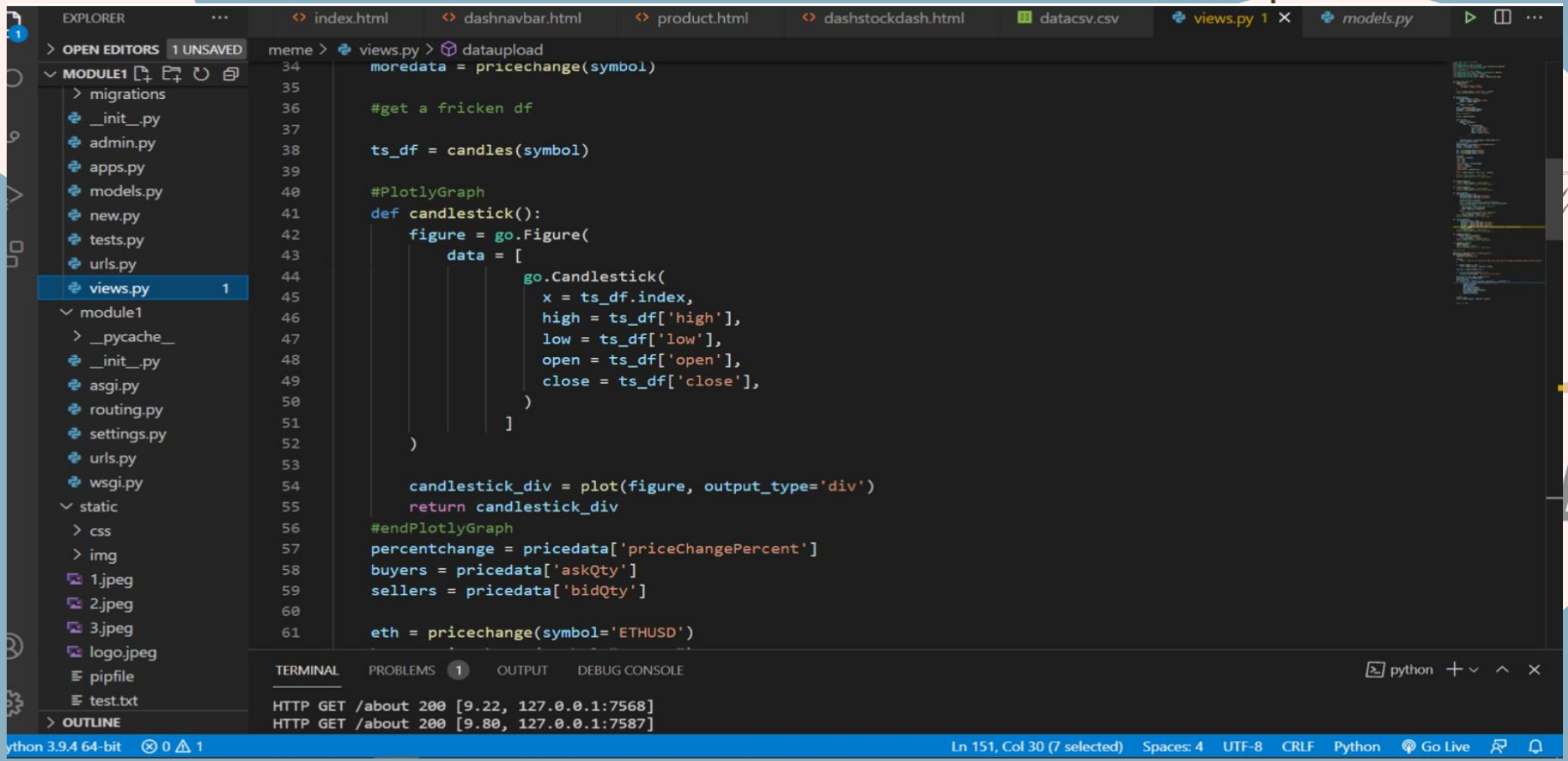
The Live data of highs and lows of each stock:



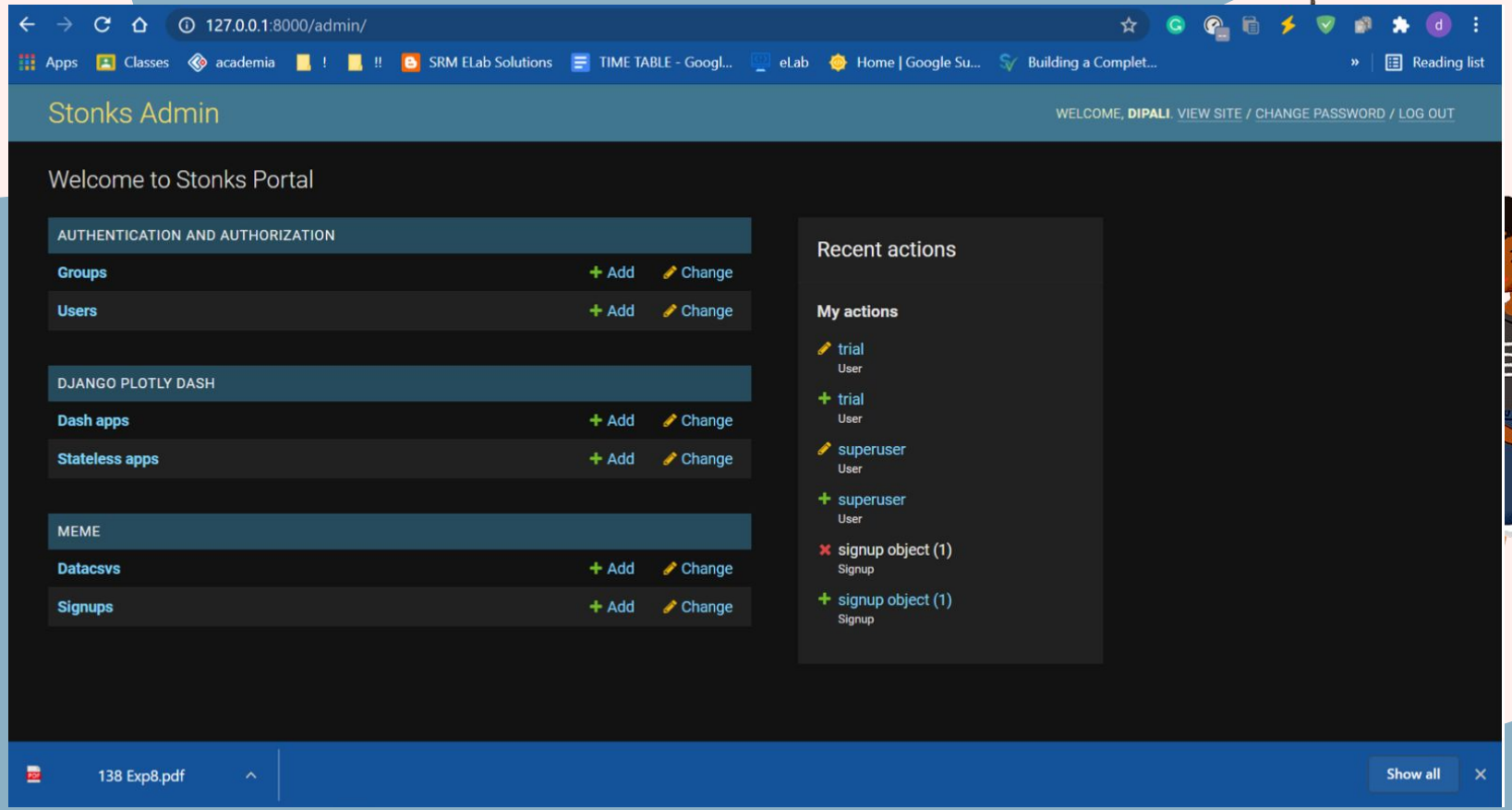
Code for backend -



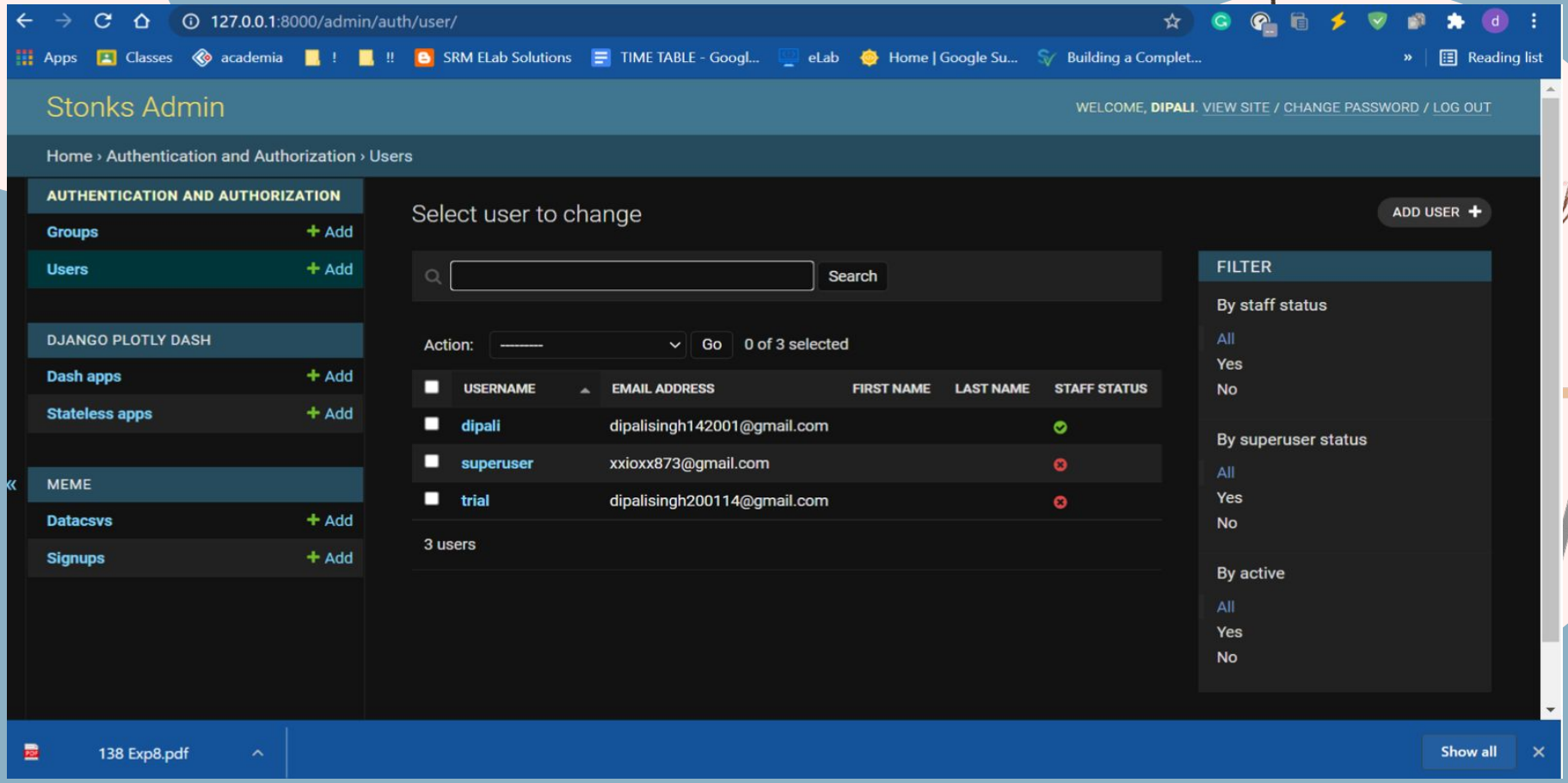
Code for backend -



Result of Module 2



Result of Module 2

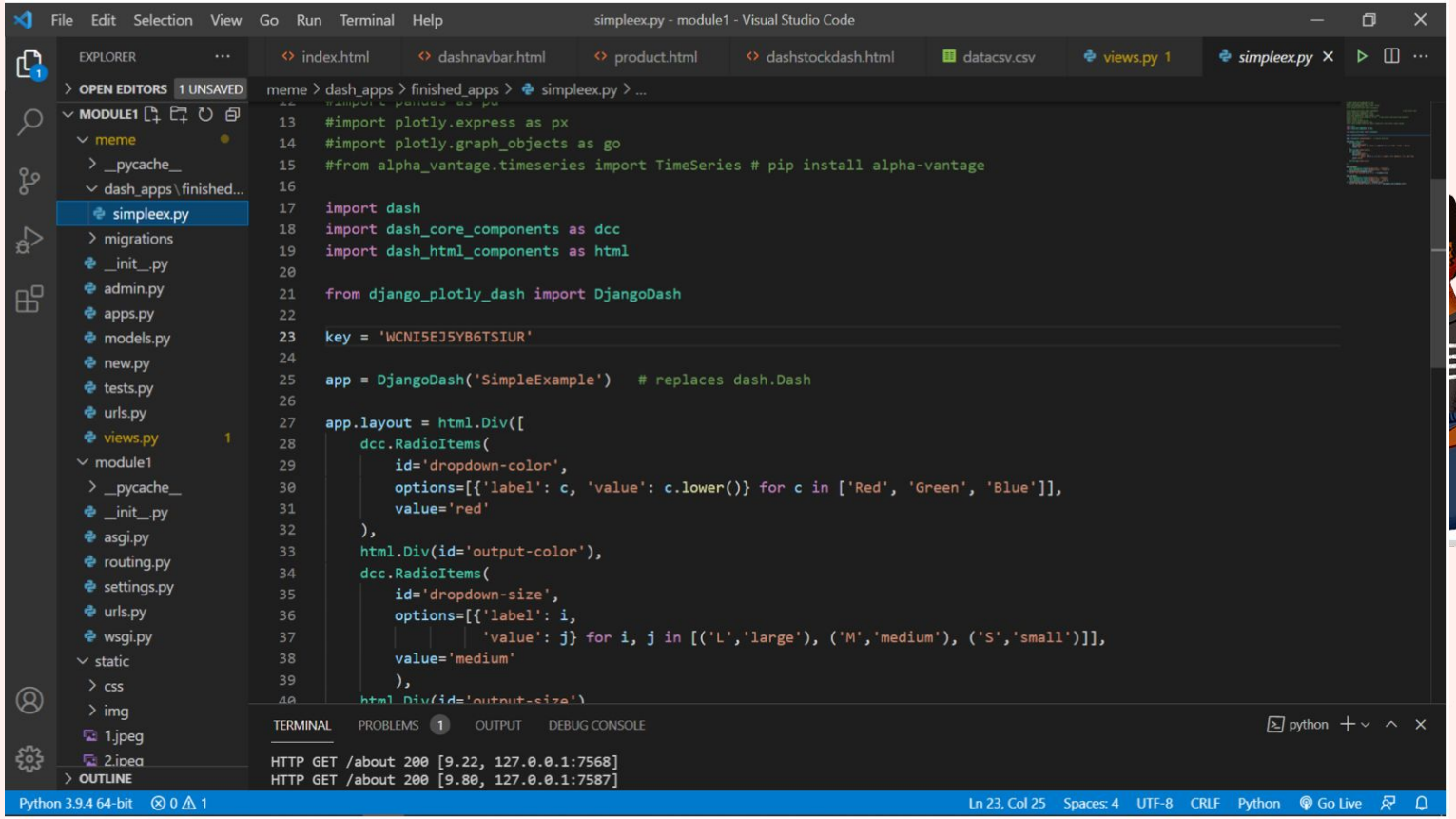


Implementation of Module 3

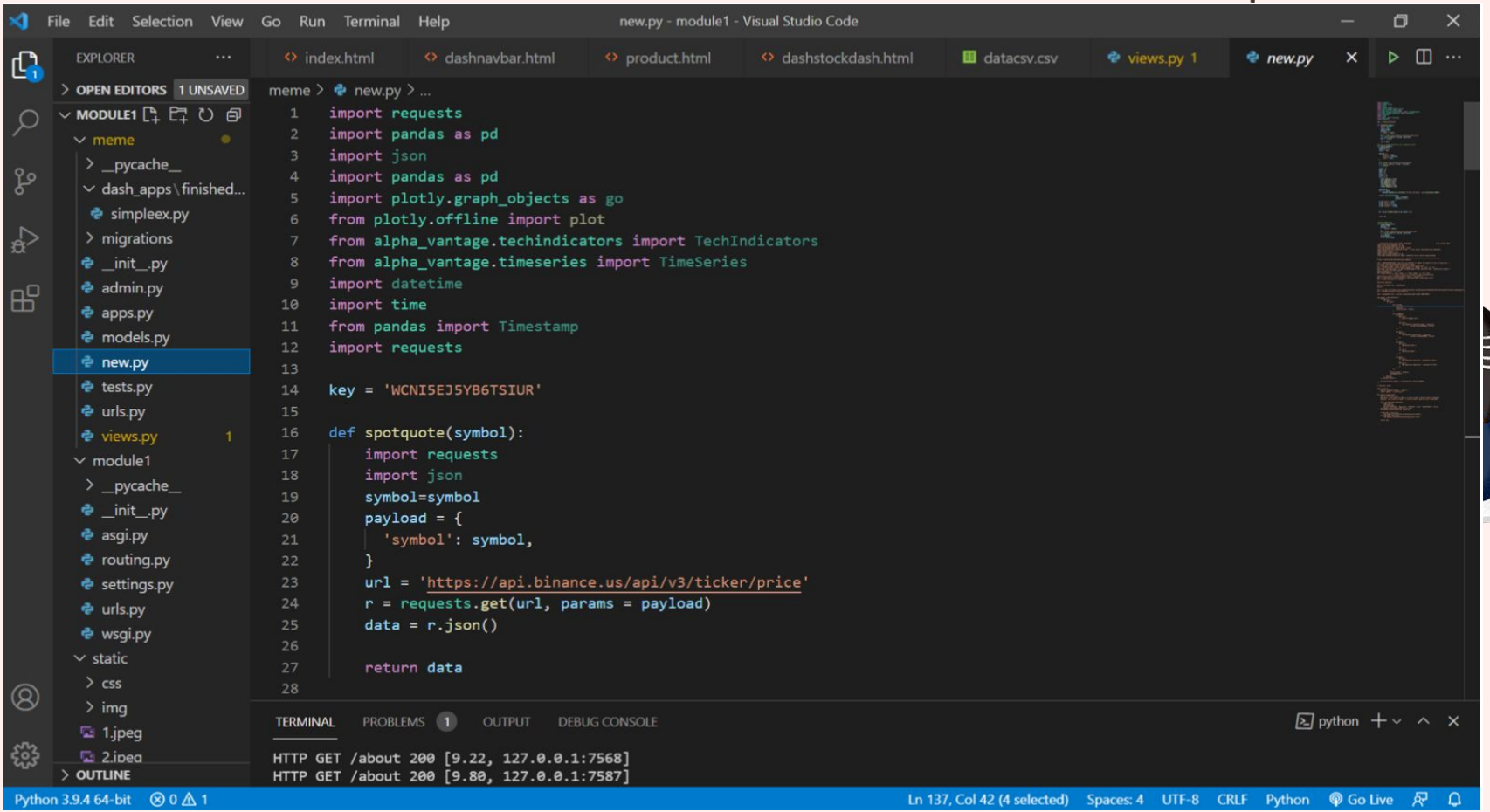
Code of Module 3:

Module 3 (Live API parsing to show live graphs) was implemented using the following code: Link for detailed code: https://drive.google.com/drive/u/0/folders/1d114nrIDAKcCiGxYD5I6gC7bBieDIIsB

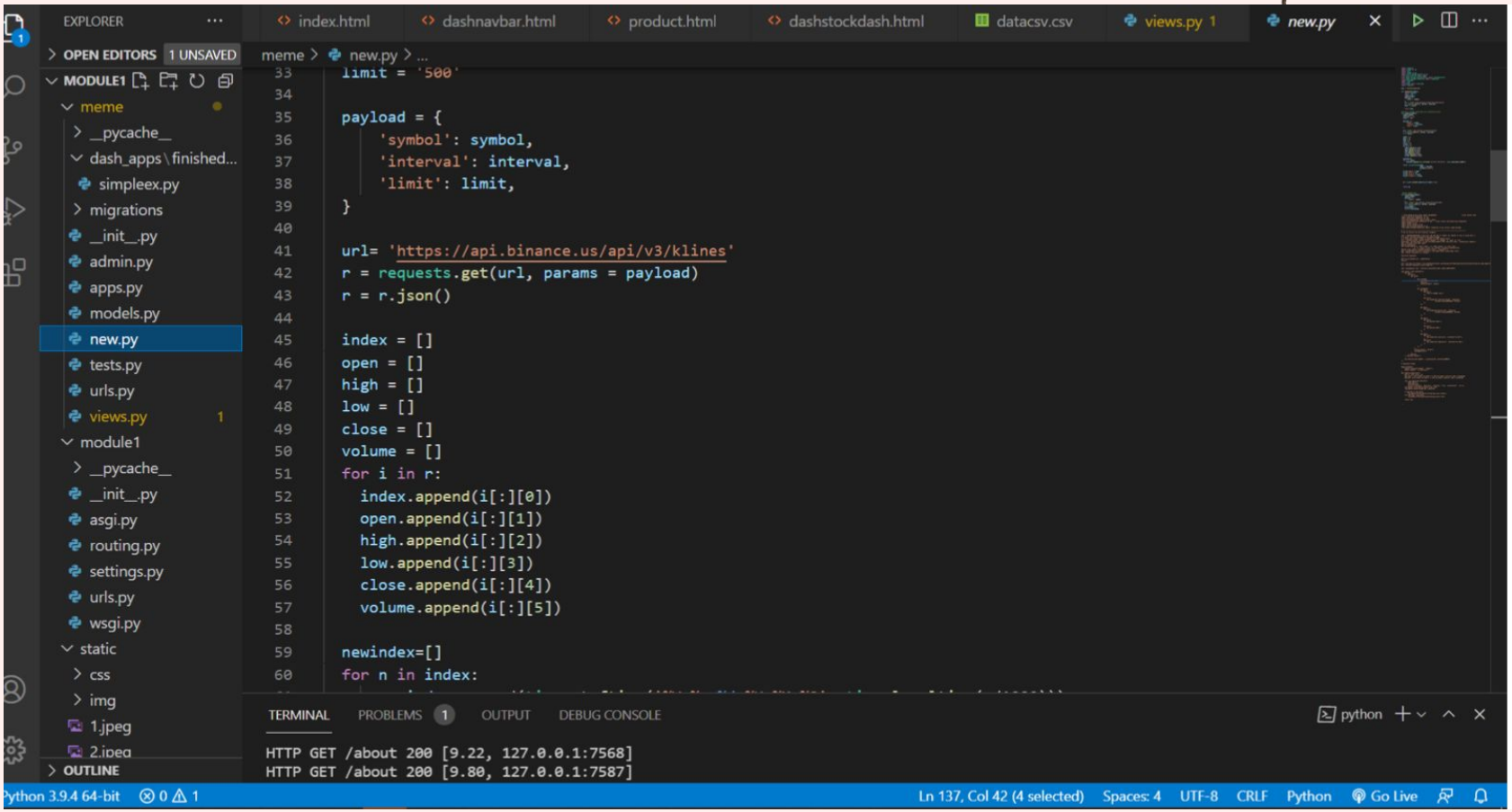
Code -


File Edit Selection View Go Run Terminal Help
simpleex.py - module1 - Visual Studio Code
EXPLORER
index.html
dashnavbar.html
product.html
dashstockdash.html
datacsv.csv
views.py 1
simpleex.py
OPEN EDITORS 1 UNSAVED
MODULE1
meme > dash_apps > finished_apps > simpleex.py > ...
#import plotly.express as px
#import plotly.graph_objects as go
#from alpha_vantage.timeseries import TimeSeries # pip install alpha-vantage
import dash
import dash_core_components as dcc
import dash_html_components as html
from django_plotly_dash import DjangoDash
key = 'WCNI5EJ5YB6TSIUR'
app = DjangoDash('SimpleExample') # replaces dash.Dash
app.layout = html.Div([
dcc.RadioItems(
id='dropdown-color',
options=[{'label': c, 'value': c.lower()} for c in ['Red', 'Green', 'Blue']],
value='red'
),
html.Div(id='output-color'),
dcc.RadioItems(
id='dropdown-size',
options=[{'label': i,
'value': j} for i, j in [('L','large'), ('M','medium'), ('S','small')]],
value='medium'
),
meme
__pycache__
dash_apps\finished...
simpleex.py
migrations
__init__.py
admin.py
apps.py
models.py
new.py
tests.py
urls.py
views.py 1
module1
__pycache__
__init__.py
asgi.py
routing.py
settings.py
urls.py
wsgi.py
static
css
img
1.jpeg
2.jpeg
OUTLINE
TERMINAL
PROBLEMS 1
OUTPUT
DEBUG CONSOLE
python
HTTP GET /about 200 [9.22, 127.0.0.1:7568]
HTTP GET /about 200 [9.80, 127.0.0.1:7587]
Python 3.9.4 64-bit
Ln 23, Col 25
Spaces: 4
UTF-8
CRLF
Python
Go Live

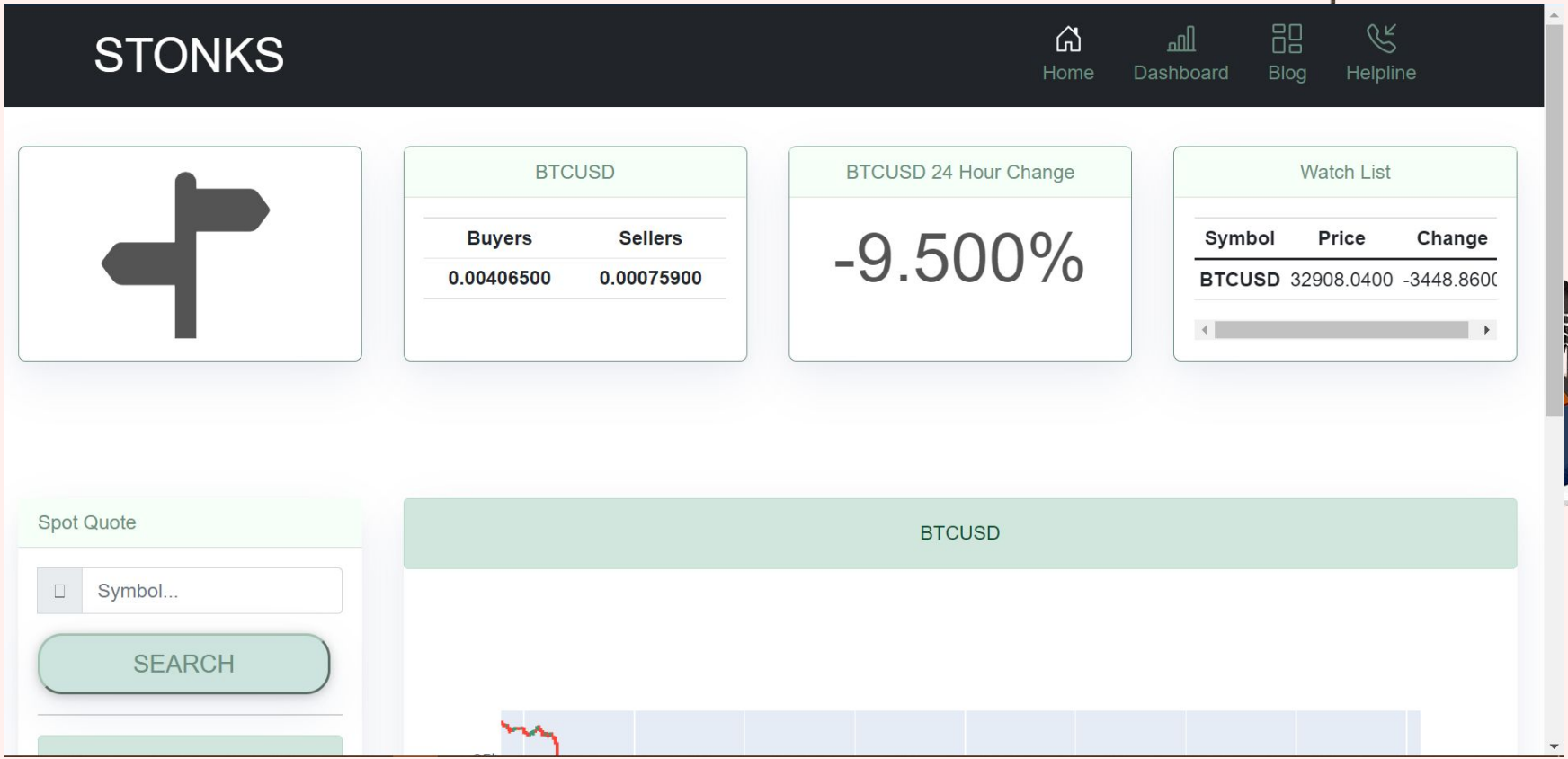
Code -


File Edit Selection View Go Run Terminal Help
new.py - module1 - Visual Studio Code
EXPLORER
OPEN EDITORS 1 UNSAVED
MODULE1
meme
__pycache__
dash_apps\finished...
simpleex.py
migrations
__init__.py
admin.py
apps.py
models.py
new.py
tests.py
urls.py
views.py 1
module1
__pycache__
__init__.py
asgi.py
routing.py
settings.py
urls.py
wsgi.py
static
css
img
1.jpeg
2.jpeg
OUTLINE
index.html
dashnavbar.html
product.html
dashstockdash.html
datacsv.csv
views.py 1
new.py
meme > new.py > ...
1 import requests
2 import pandas as pd
3 import json
4 import pandas as pd
5 import plotly.graph_objects as go
6 from plotly.offline import plot
7 from alpha_vantage.techindicators import TechIndicators
8 from alpha_vantage.timeseries import TimeSeries
9 import datetime
10 import time
11 from pandas import Timestamp
12 import requests
13
14 key = 'WCNI5EJ5YB6TSIUR'
15
16 def spotquote(symbol):
17 import requests
18 import json
19 symbol=symbol
20 payload = {
21 'symbol': symbol,
22 }
23 url = 'https://api.binance.us/api/v3/ticker/price'
24 r = requests.get(url, params = payload)
25 data = r.json()
26
27 return data
28
TERMINAL PROBLEMS 1 OUTPUT DEBUG CONSOLE
python
HTTP GET /about 200 [9.22, 127.0.0.1:7568]
HTTP GET /about 200 [9.80, 127.0.0.1:7587]
Python 3.9.4 64-bit
Ln 137, Col 42 (4 selected) Spaces: 4 UTF-8 CRLF Python Go Live

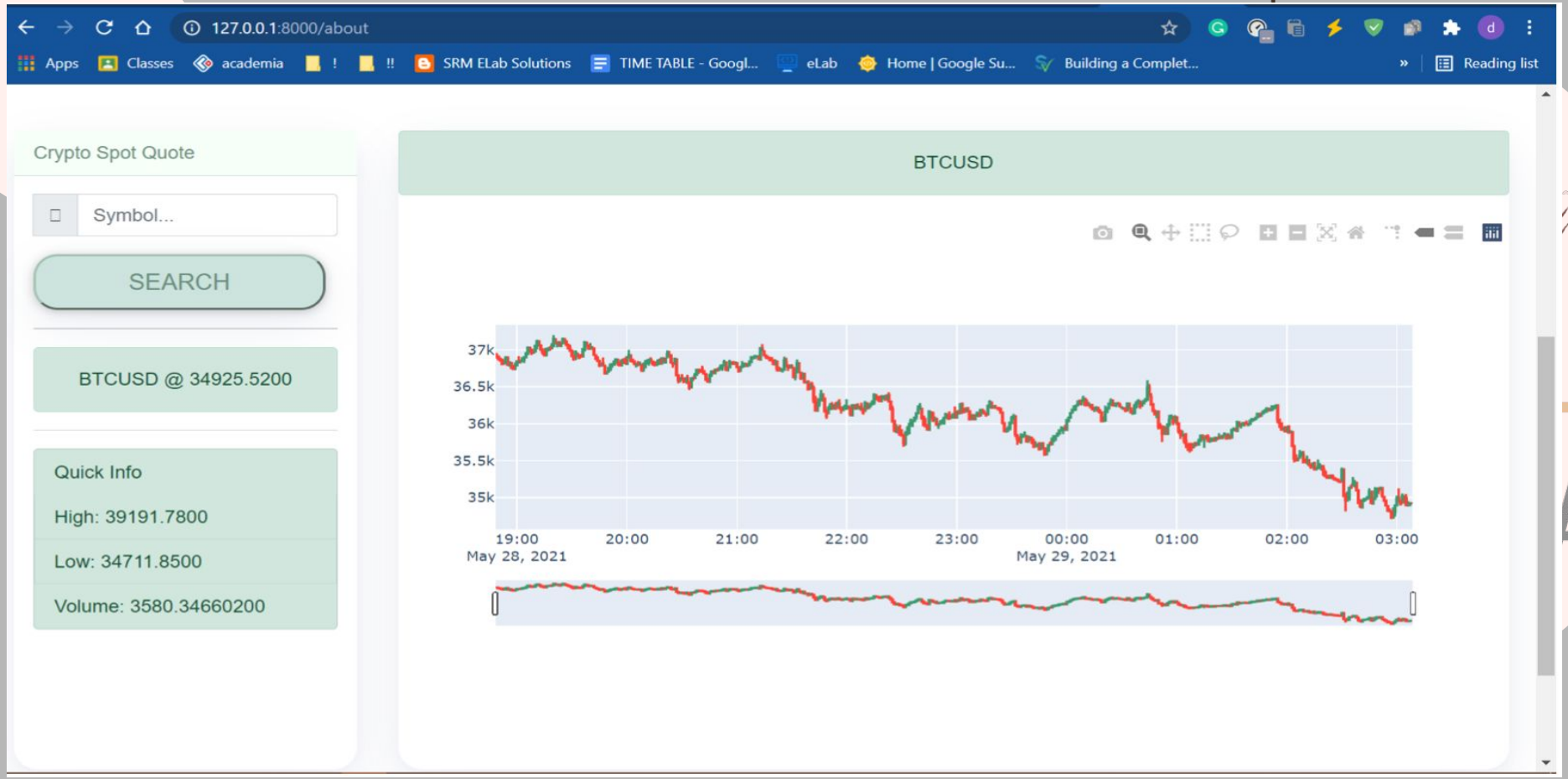
Code -


EXPLORER
index.html
dashnavbar.html
product.html
dashstockdash.html
datacsv.csv
views.py 1
new.py
OPEN EDITORS 1 UNSAVED
MODULE1
meme
__pycache__
dash_apps\finished...
simpleex.py
migrations
__init__.py
admin.py
apps.py
models.py
new.py
tests.py
urls.py
views.py 1
module1
__pycache__
__init__.py
asgi.py
routing.py
settings.py
urls.py
wsgi.py
static
css
img
1.jpeg
2.jpeg
OUTLINE
meme > new.py > ...
limit = '500'
payload = {
'symbol': symbol,
'interval': interval,
'limit': limit,
}
url= 'https://api.binance.us/api/v3/klines'
r = requests.get(url, params = payload)
r = r.json()
index = []
open = []
high = []
low = []
close = []
volume = []
for i in r:
index.append(i[:][0])
open.append(i[:][1])
high.append(i[:][2])
low.append(i[:][3])
close.append(i[:][4])
volume.append(i[:][5])
newindex=[]
for n in index:
TERMINAL
PROBLEMS 1
OUTPUT
DEBUG CONSOLE
python
HTTP GET /about 200 [9.22, 127.0.0.1:7568]
HTTP GET /about 200 [9.80, 127.0.0.1:7587]
Python 3.9.4 64-bit
Ln 137, Col 42 (4 selected)
Spaces: 4
UTF-8
CRLF
Python
Go Live

Result of Module 3:



Result of Module 3:



Master Test Plan and Test cases

Scope of Testing

Functional: The following modules need to be tested:

1. Front-end
2. Back-end(migrations)
3. Live API parsing.

Non-Functional: The non-functional modules are:

1. Blog page
2. Helpline page

Types of Testing, Methodology and Tools

Category	Methodology	Tools Required
Functional Requirements	Manual	Django Frame

Functional Test Cases

Test ID#	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome
1.	Verify user registration	Accept Valid username on page#1	1. User clicks on user registration link 2. Enter the username on the box	User should be taken to login page	successful
2.	Verify live data parsi	Parse API using Alpha-vantage API.	View data, and display it into a candlestick graph.	Live data	successful

Non-Functional Test cases

Test ID(#)	Test Scenario	Execution Steps	Expected outcome	Test cases	Actual outcome
1	Blog Page	Execution using the following command: -python manage.py runserver	Working blog page	nil	Working blog page
2	Helpline Page	Execution using command: Python manage.py runserver	Working helpline page	nil	Working helpline pag

Defect Log

Requirement #	Defect ID #	Defect Description	Assigned
M1R1	1	Favourites button for signed in users	Dipali

Test Report

Category	Progress Against Plan	Status
Functional Testing	Green	In-Progress
Non-Functional Testing	Green	In-Progress

Functional	Test Case Coverage	Status
Module ID 1	80%	in-Progress
Module ID 2	70%	In-Progress
Module ID 3	85%	In-Progress

Test Report Reference

1. https://www.pmi.org/

Thankyou