B.M.S College of Engineering

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DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

Course – Advanced Python Programming
Course Code –20IS5PEAPP
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Stock Market Share Charts

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INTRODUCTION

The generation of stock market share charts and email delivery of the charts to the respective user is a project that aims to provide a convenient and automated solution for monitoring the performance of individual stocks. The objective of the project is to collect stock market data from various sources, generate charts that represent the performance of the stocks, and send the charts to individual users via email on a regular basis. The project will involve data collection and pre-processing, chart generation using data visualization tools, email delivery and user management. The outcome of this project will be a system that allows investors to stay up-to-date on the performance of their investments, enabling them to make informed investment decisions.

PROBLEM STATEMENT

Problem Statement: The stock market is a complex and dynamic environment, and staying up-to-date on the performance of individual stocks can be a challenge for investors. Despite the availability of various tools for tracking stock performance, manually checking for updates on a regular basis can be time-consuming and inefficient. There is a need for an automated solution that can collect stock market share chart data, analyze it, and deliver the chart to the respective user via email. The goal of this project is to develop a system that can collect stock market data, generate charts, and send the charts to individual users on a regular basis, allowing them to easily monitor the performance of their investments and make informed investment decisions.

SYSTEM REQUIREMENT AND SPECIFICATION

Operating System

- Windows 10 or above

RAM

- 8 Gb or above

Applications Used

- Google Collab

Libraries Used

- Numpy
- Pandas
- Yfinance
- Plotly
- Sqlite3

SYSTEM DESIGN

Here is a high-level system design for the project:

1. Data collection: Collect the stock market data for various companies from a financial data provider such as Yahoo Finance.

2. Data storage: Store the collected data in a database such as MySQL, MongoDB or Cassandra for quick retrieval.

3. Web Scraping: Write a script to scrape the data from the selected financial data provider's website and store the data in the database.

4. Chart generation: Use a library such as Matplotlib and Plotly to generate a chart of the stock market data for a specific company.

5. Email service: Integrate an email service such as EmailMessage to send the generated chart to the respective user.

6. User management: Implement a user management system to keep track of the registered users and their preferences such as the frequency of email updates, the specific company for which they want to receive updates, etc.

This design will allow users to receive regular updates of the stock market data for the company of their choice via email, with charts generated from the collected data.

IMPLEMENTATION

Code:

```
!pip install yfinance

import numpy as np


!pip install plotly>=4.0.0

!wget https://github.com/plotly/orca/releases/download/v1.2.1/orca-1.2.1-x86_64.AppImage

-O /usr/local/bin/orca

!chmod +x /usr/local/bin/orca

!apt-get install xvfb libgtk2.0-0 libgconf-2-4


from google.colab import drive

drive.mount('/content/drive')


import matplotlib.pyplot as plt

import datetime

import yfinance as yf

import plotly.graph_objects as go

from datetime import date, timedelta

import pandas as pd


df = pd.read_csv('/content/data - Sheet1 (2).csv')

df
```

```
import sqlite3
connection = sqlite3.connect('mails.db')
c = connection.cursor()

#c.execute("""Create table mails
#(
#Name text,
#Phone text,
#Email text,
#Company text)
#""")
df.to_sql('mails',connection,if_exists='replace',index = False)

c.execute('Select * from mails')
print(c.fetchall())

a = df.loc[:,'Company'].values
for i in a:
    data = yf.download(tickers=i, period='1y', interval='1d')
    fig = go.Figure(data=go.Scatter(x=data.index,y=data['Close'], mode='lines'))
    fig.write_image("{}.png".format(i))
    print('saved')

import smtplib
import imghdr
```

```
from email.message import EmailMessage


Sender_Email = "appstockpred@gmail.com"
Reciever_Email = df.loc[:,'Email'].values
Password = 'hdcjrdzjlaygcvpa'


for i in Reciever_Email:
    em = i
    c.execute('Select Company from mails where Email = ?',[em])
    b = c.fetchone()


    newMessage = EmailMessage()
    newMessage['Subject'] = "Check out the new logo"
    newMessage['From'] = Sender_Email
    newMessage['To'] = i
    newMessage.set_content('Here is your stock value')
    with open('{}.png'.format(b[0]), 'rb') as f:
        image_data = f.read()
        image_type = imghdr.what(f.name)
        image_name = f.name
    newMessage.add_attachment(image_data, maintype='image', subtype=image_type,
filename=image_name)
    with smtplib.SMTP_SSL('smtp.gmail.com', 465) as smtp:
        smtp.login(Sender_Email, Password)
        smtp.send_message(newMessage)
```

TEST RESULTS

CSV file containing the details of the client and the company requested:

data - Sheet1 (2).csv

1 to 4 of 4 entries Filter

Name	Phone	Email	Company
a	123	hrishiprahalad@gmail.com	AAPL
b	456	hhpp8203@gmail.com	GOOG
c	789	srujanhits@gmail.com	AMZN
d	12	sumukhaganesh2008@gmail.com	META

Show 10 per page

Generate the stock market share charts of the respective companies using plotly:

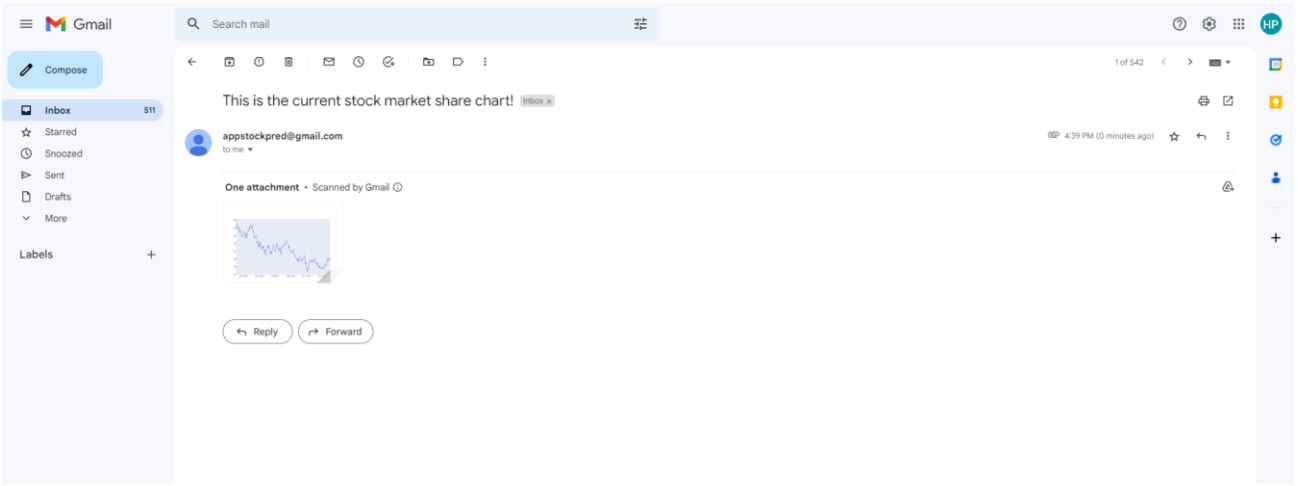
APPLE

AMAZON:

GOOGLE:

META:

Client receives the chart as an email.



CONCLUSION

In conclusion, the project to get the stock market share chart of companies and email the chart to the respective user is a valuable tool for those interested in keeping track of the stock market trends. The system design takes into account various components such as data collection, storage, chart generation, email service, user management, scheduling, and a web interface, making it a comprehensive solution for stock market data visualization and updates. With the use of cutting-edge technologies and services, the project promises to provide accurate, reliable and timely updates to users, making it an indispensable tool for stock market analysis and investment decisions. The project is a testament to the power of technology and its ability to simplify complex processes, bringing the stock market to the fingertips of the users.

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