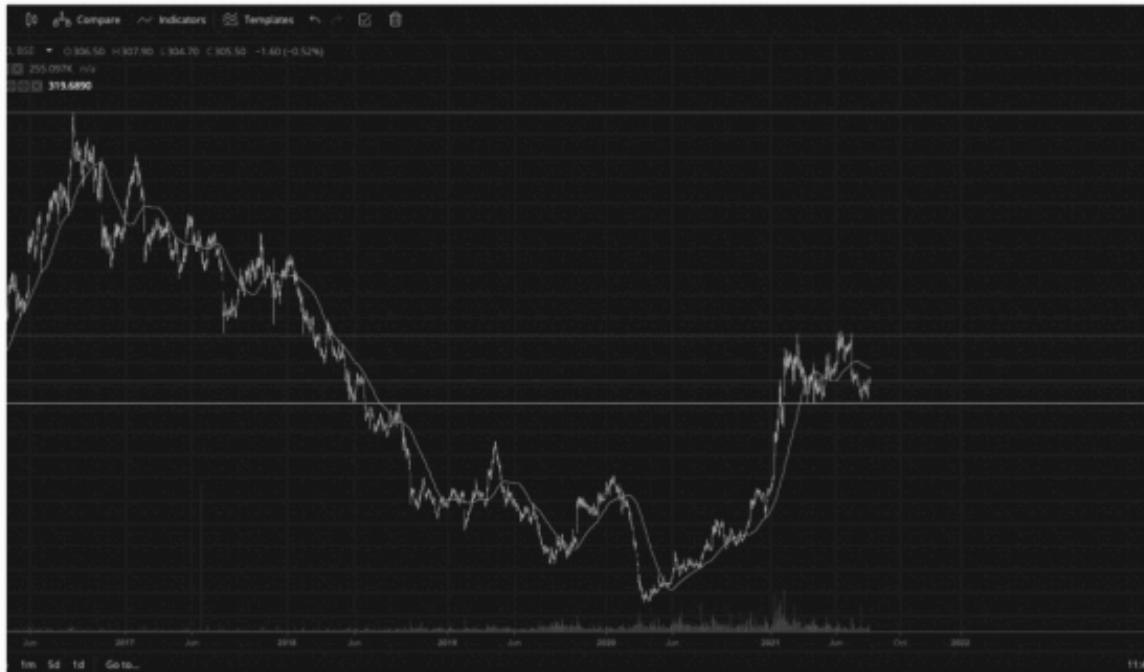


Stock Price Predictor + Screener

Project Synopsis

Stock Price Predictor



Introducing The Project

My code helps people average the "un-readable" data of any stock (equity system) on the NYSE and BSE (New York Stock Exchange & Bombay Stock Exchange). It provides the data in a decent Line Graph, Scatter Graph and a PlotGraph. Now for what makes this piece of code interesting and unique is the feature where you can select the number of years for which you want the projected prices of any share you select. And what do I mean by projected prices? The code takes in the testing data which is provided on the backend of the website (Machine Learning) and calculates certain patterns, average prices, growth of the particular script and finally projects or we can say calculates (Artificial Intelligence) the "future" prices the stock.

DISCLAIMER: This code is only made for educational purposes, any trades done via this system must first be consulted with your financial advisor first.

What Inspired Me/Why did I code this Program ?

I am Yuvraj Rathi, studying only the topics taught in school in 10th standard was really monotonous for me. So I entered in a Paper trading Competition which was organised by Wharton School of Business. I found investments in the share market really intriguing. So I started my trading account at the age of 17. Slowly and gradually I started to learn more about the marketplace from my dad, the internet. Then I decided to integrate my knowledge in both Computers and Financial aspect together. So I coded this program, which might help me filtering out some of the trades I pick up on as well!

Explaining the Code in Brief

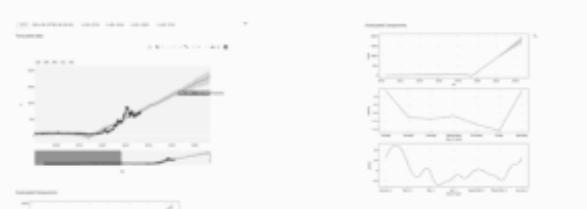
Starting with importing the Libraries, the external libraries used are :-

- 1.) **datetime**
- 2.) **yfinance**
- 3.) **fbprophet**
- 4.) **plotly**
- 5.) **streamlit**

Yfinance- scrapes data out of the the Yahoo Finance website, and gives you anything needs.

Datetime- Just punches in the date you want in the format which your interpreter understands it.

Fbprophet- this is the main brain of the program, it takes data from y finance and then calculates it via the black Scholes and warren equation.



Streamlit- this module helps with presentation part of the program, provides containers, localhost, colours and beautifies the output



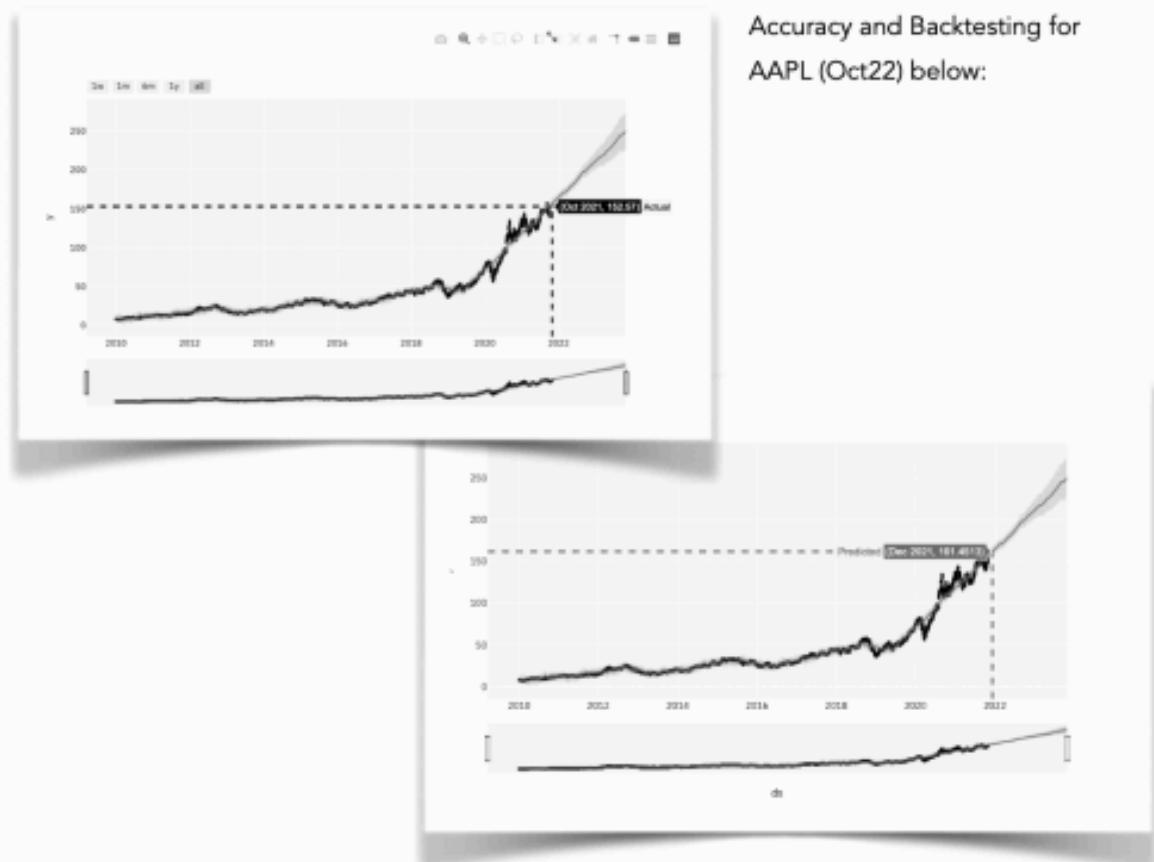
Working and Flow of the Program

First the code reads the data from "Yahoo Finance" website of the desired Script name, uses the data of previous years to find patterns and predict the data for the upcoming years. Then using "Plotly" the code plots the raw tabular data, to make it easy and neat to display to the user (Keeping in mind that the users can be from a range of different fields and levels and to make sure sure the application is user friendly). A variety of Advance and Decay charts are available at the end of the forecast. The outputs accuracy decreases and the range increases with the increases in the number of years we are forecasting the data for.

This can be categorised inner the most basic and efficient form of Algo trading using Quants.

DISCLAIMER:

This program won't make you the next "Wolf of Wall Street" so please consider this as: a model under training and consult your financial advisors before any decision you make, after all its your capital and time! Cheers!



Stock Screener

Description: This project helps the users to gather information about different stocks filtered on basis of their sector.

It's a powerful stock analysis and screening tool for investors.
Screen stocks easily and displays the output.

```
1) Predict Share Price upto 5 years with Graph, Open Interest, Puts & Calls
2) Get a description of Name/Sector/Industry/Current Market Price after inputting the SECTOR SERIAL No. mentioned above?
continue? (y/n) : y
1) Predict Share Price upto 5 years with Graph, Open Interest, Puts & Calls
2) Get a description of Name/Sector/Industry/Current Market Price after inputting the SECTOR SERIAL No. mentioned above?
1 Crude Oil
2 IT
3 Bank
4 FMCG
5 Finance
6 Telecom
7 Chemicals
8 Retailing
9 Infrastructure
10 Automobile & Ancillaries
11 Power
12 Construction Materials
13 Diamond & Jewellery
14 Healthcare
15 Trading
16 Gas Transmission

17 Iron & Steel
18 Logistics
19 Non - Ferrous Metals
20 Insurance
21 Diversified
22 Realty
23 Mining
24 Capital Goods
25 Aviation
26 Hospitality
27 Agri
28 Alcohol
29 Inds. Gases & Fuels
30 Plastic Products
31 Textile
32 Consumer Durables
33 Electricals
34 Media & Entertainment
35 Miscellaneous
36 Ratings
37 Abrasives
38 Ship Building
39 Paper
40 Ferro Manganese
41 Education & Training
42 Photographic Product
enter your choice : |
```

```
enter your choice : 28
```

SECTOR	PRICE
United Spirits	899.5
United Breweries	1,545.3
Radico Khaitan	1,187.4
Globus Spirits	1,223.0
GM Breweries	777.0
Tilaknagar Industries	89.0
Associated Alcohols & Breweries	497.0
Jagatjit Industries	61.0
Som Distilleries & Breweries	42.3
Khoday India	73.1
Pioneer Distilleries	179.0
Piccadilly Sugar & Allied Industries	15.0
Winsome Breweries	11.9
Silver Oak (India)	38.9

```
continue? (y/n) : |
```

CODE:

SharePricePredictor.py

```
#Future Stock Prices

import streamlit as st
import datetime as date

import yfinance as yf
from fbprophet import Prophet

from fbprophet.plot import plot_plotly
from plotly import graph_objs as go

START = "2010-01-01"
TODAY = date.date.today().strftime("%Y-%m-%d")

st.title("Future Stock Price Prediction Web")

stocks = ("AAPL", "GOOG", "MSFT", "GME", "TSLA")
selected_stock = st.selectbox("Select data set for prediction from the drop down box", stocks)

n_years = st.slider("Years of prediction", 1, 4)
period = n_years * 365

@st.cache

def load_data(ticker):

    data = yf.download(ticker, START, TODAY)
    data.reset_index(inplace=True)
    return data

data_load_state = st.text("Load Data....")
data = load_data(selected_stock)
print(type(data))
data_load_state.text("Loading Data...Done")
```

```
st.subheader('Raw Data')
st.write(data.tail())

def plot_raw_data():

    fig = go.Figure()
    fig.add_trace(go.Scatter(x=data['Date'], y=data['Open'], name='stock_open'))
    fig.add_trace(go.Scatter(x=data['Date'], y=data['Close'], name='stock_close'))
    fig.layout.update(title_text="Time Series Data", xaxis_rangeslider_visible=True) #for
zooming, better viewing of carts
    st.plotly_chart(fig)
```

```
plot_raw_data()
```

```
#Forecasting The Big Trade
df_train = data[['Date', 'Close']] #syntax for 'data' to read the command
df_train = df_train.rename(columns={"Date": "ds", "Close": "y"}) #just to agree with the
syntax of fbprophet's syntax
```

```
m = Prophet()
m.fit(df_train)
future = m.make_future_dataframe(periods=period) #from line 21
forecast = m.predict(future) #df_eval
```

```
st.subheader('Forecasted Data')
st.write(forecast.tail())
```

```
st.write('Forecasted data')
fig1 = plot_plotly(m, forecast)
st.plotly_chart(fig1)
```

```
st.write('Forecasted Components')
fig2 = m.plot_components(forecast)
st.write(fig2)
```

sharemarket.py

```
import csv

file = open("sharemarket.csv", "r")

file = csv.reader(file)

sector = []
market = []
for i in file:
    market.append(i)
    if i[2] not in sector:
        sector.append(i[2])

sector = sector[1:]

cont = "y"
while cont == "y":
    count = 1
    for i in sector:
        print(count, i)
        count += 1

    choice = int(input("enter your choice : "))
    choice -= 1
    chosen = sector[choice]
    print("SECTOR          PRICE")
    for i in market:
        if i[2] == chosen:
            print(i[1], i[6])

    cont = input("continue? (y/n) : ")
```

Menu.py

```
cont = "y"

while cont == "y":
    choice = int(input("1) Predict Share Price upto 5 years with Graph, Open Interest, Puts &
Calls
2) Get a description of Name/Sector/Industry/Current Market Price after inputting the SECTOR
SERIAL No. mentioned above"))

if choice == 1:
    Import SharePricePredictor
elif choice == 2:
    import sharemarket

cont = input("continue? (y/n) : ")
```

SCREENSHOTS:

```
1) Predict Share Price upto 5 years with Graph, Open Interest, Puts & Calls
2) Get a description of Name/Sector/Industry/Current Market Price after inputting the SECTOR SERIAL No. mentioned above1
continue? (y/n) : y
1) Predict Share Price upto 5 years with Graph, Open Interest, Puts & Calls
2) Get a description of Name/Sector/Industry/Current Market Price after inputting the SECTOR SERIAL No. mentioned above2
1 Crude Oil
2 IT
3 Bank
4 FMCG
5 Finance
6 Telecom
7 Chemicals
8 Retailing
9 Infrastructure
10 Automobile & Ancillaries
11 Power
12 Construction Materials
13 Diamond & Jewellery
14 Healthcare
15 Trading
16 Gas Transmission

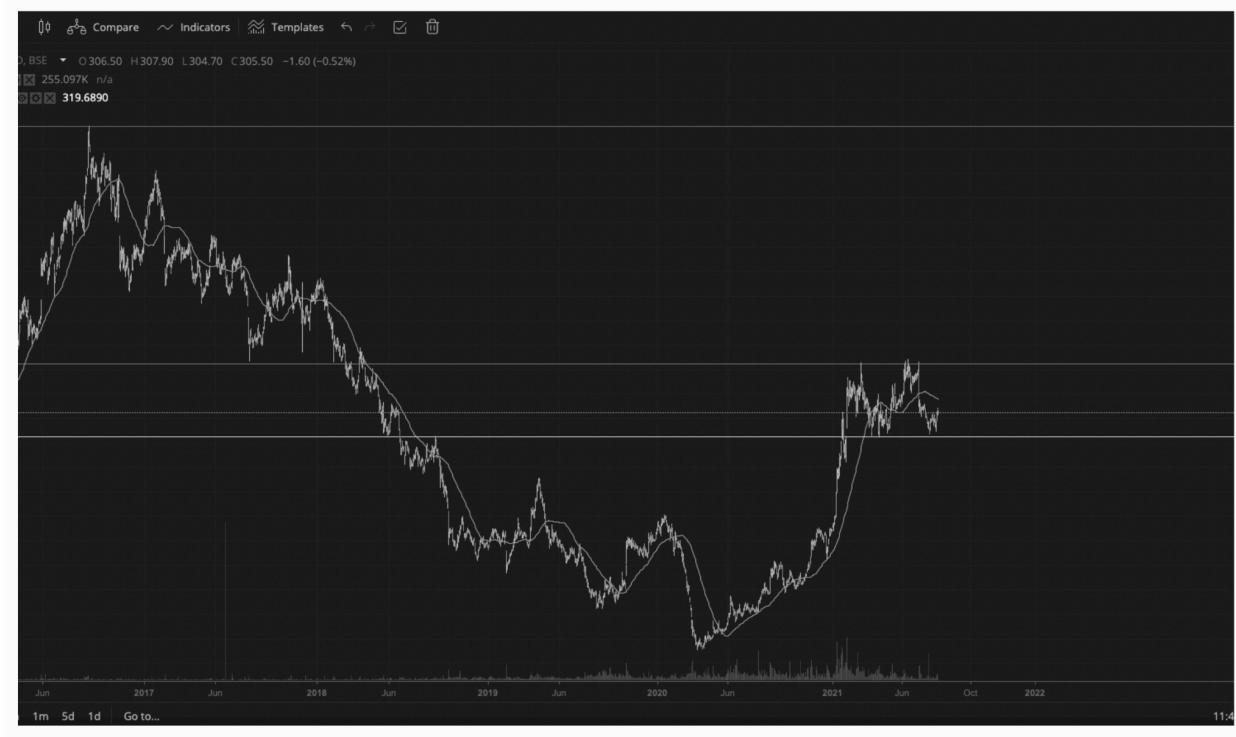
17 Iron & Steel
18 Logistics
19 Non - Ferrous Metals
20 Insurance
21 Diversified
22 Realty
23 Mining
24 Capital Goods
25 Aviation
26 Hospitality
27 Agri
28 Alcohol
29 Inds. Gases & Fuels
30 Plastic Products
31 Textile
32 Consumer Durables
33 Electricals
34 Media & Entertainment
35 Miscellaneous
36 Ratings
37 Abrasives
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40 Ferro Manganese
41 Education & Training
42 Photographic Product
enter your choice : |
```

```
enter your choice : 28
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Khoday India	73.1
Pioneer Distilleries	179.0
Piccadilly Sugar & Allied Industries	15.0
Winsome Breweries	11.9
Silver Oak (India)	38.9

```
continue? (y/n) : |
```

```
25 Aviation
26 Hospitality
27 Agri
28 Alcohol
29 Inds. Gases & Fuels
30 Plastic Products
31 Textile
32 Consumer Durables
33 Electricals
34 Media & Entertainment
35 Miscellaneous
36 Ratings
37 Abrasives
38 Ship Building
39 Paper
40 Ferro Manganese
41 Education & Training
42 Photographic Product
enter your choice : 25
SECTOR                  PRICE
Interglobe Aviation      2,001.8
Hindustan Aeronautics    1,236.2
SpiceJet                 68.0
Jet Airways (India)       89.0
TAAL Enterprises          1,863.4
Taneja Aerospace & Aviation   115.9
Global Vectra Helicorp     80.3
continue? (y/n) : |
```



Future Stock Price Prediction Web

Select data set for prediction from the drop down box

TSLA

Years of prediction

1

6

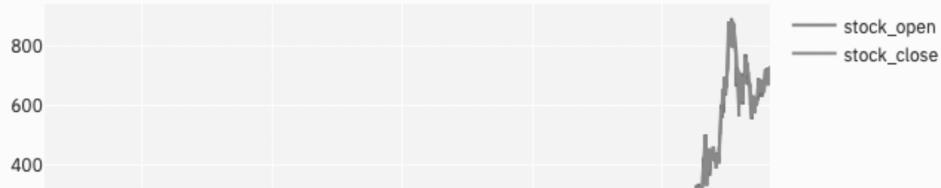
4

Loading Data...Done

Raw Data

	Date	Open	High	Low	Close	Adj Close	% Change
2808	2021-08-24T00:00:00+05... 2021-08-25T00:00:00+05...	710.6800 707.0300	715.2200 716.9700	702.6400 715.2200	708.4900 704	708.4900 711.2000	708.4900 711.2000
2810	2021-08-26T00:00:00+05...	708.3100	715.4000	697.6200	701.1600	701.1600	-0.16%
2811	2021-08-27T00:00:00+05...	705	715	702.1000	711.9200	711.9200	-0.16%
2812	2021-08-30T00:00:00+05...	714.7200	731	712.7300	730.9100	730.9100	-0.16%

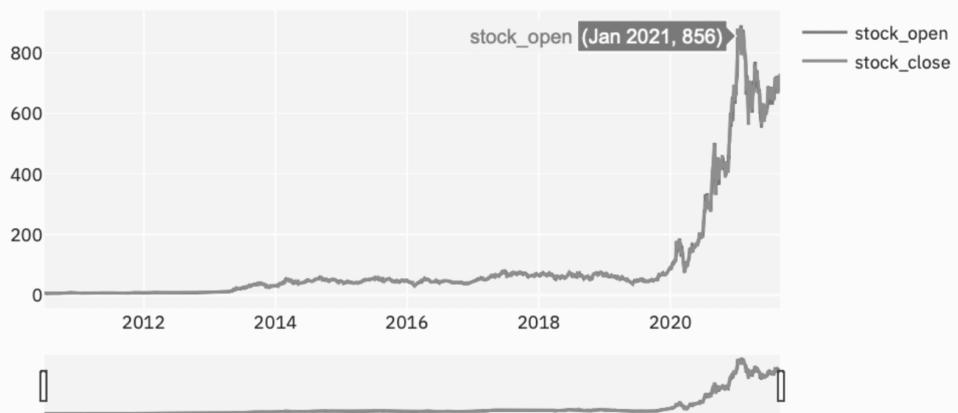
Time Series Data



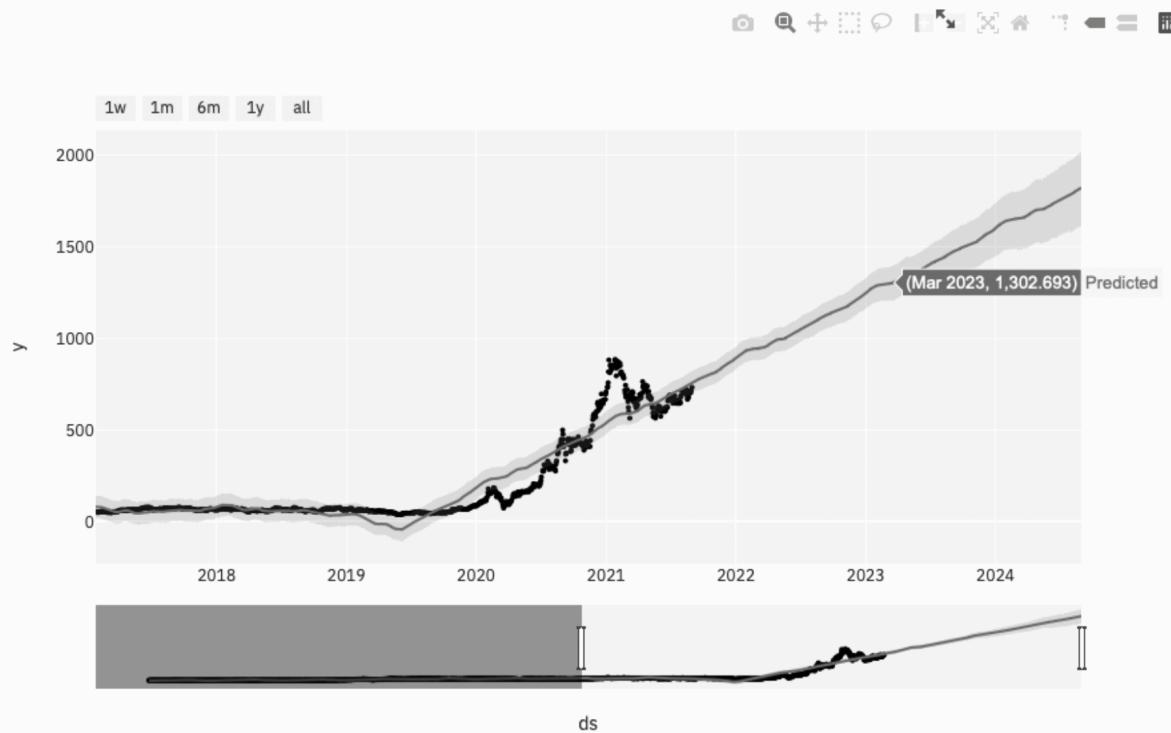
2810	2021-08-26T00:00:00+05:...	708.3100	715.4000	697.6200	701.1600	701.1600
2811	2021-08-27T00:00:00+05:...	705	715	702.1000	711.9200	711.9200
2812	2021-08-30T00:00:00+05:...	714.7200	731	712.7300	730.9100	730.9100



Time Series Data



Forecasted data



Forecasted Components



Forecasted Components

III

