Stock & Crypto Predictions

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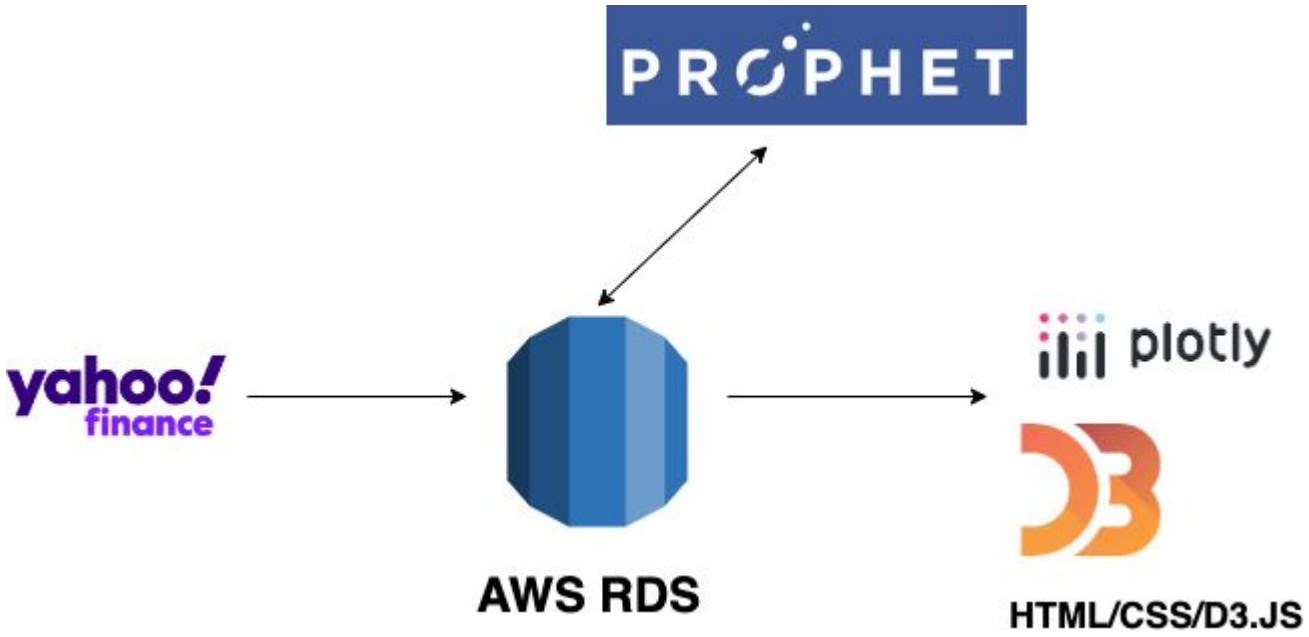
Introduction

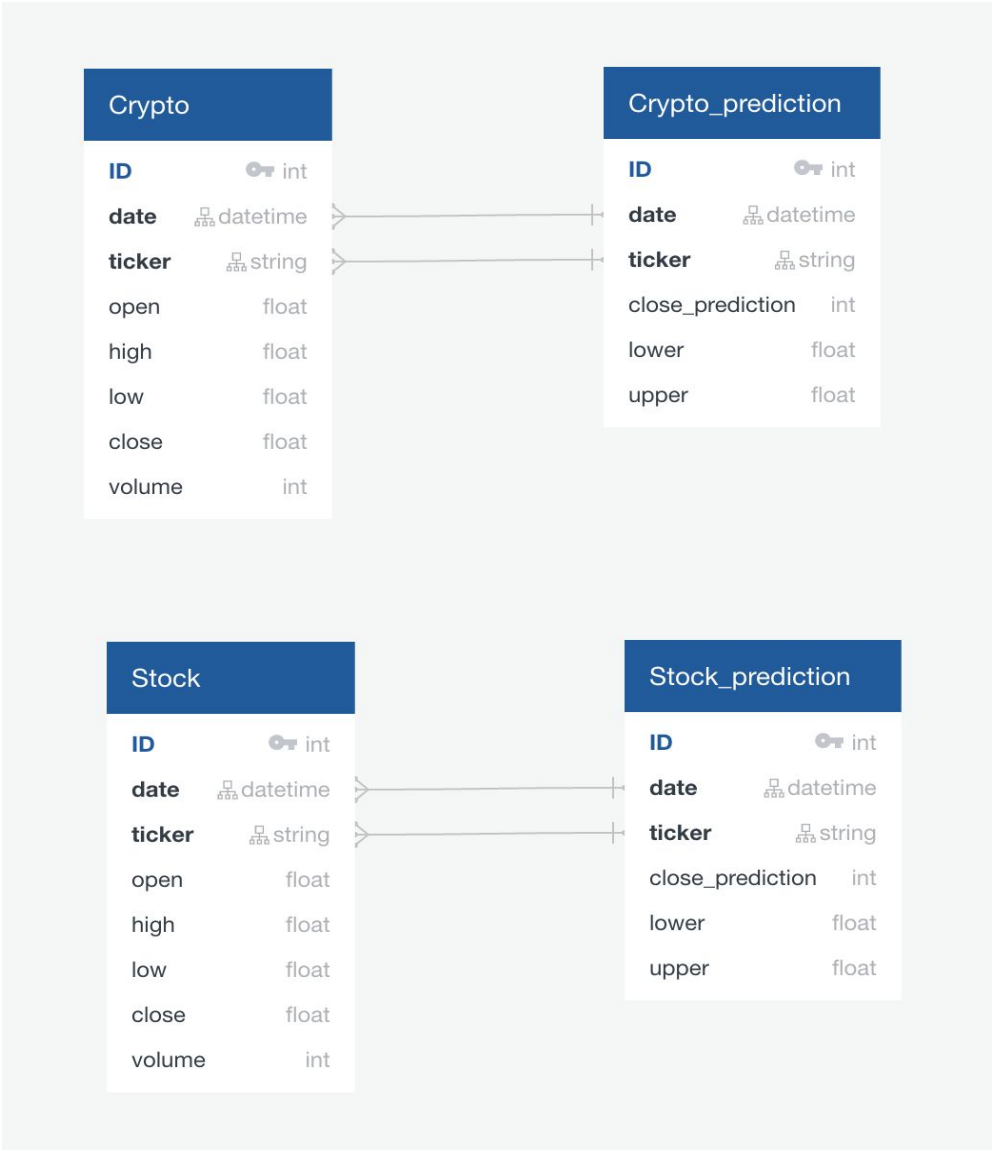
- Since the pandemic, stock markets and cryptocurrency have shown different patterns.

- The stock market was consistently high and broke records, however cryptocurrency price have drastically fallen.

Data Collection

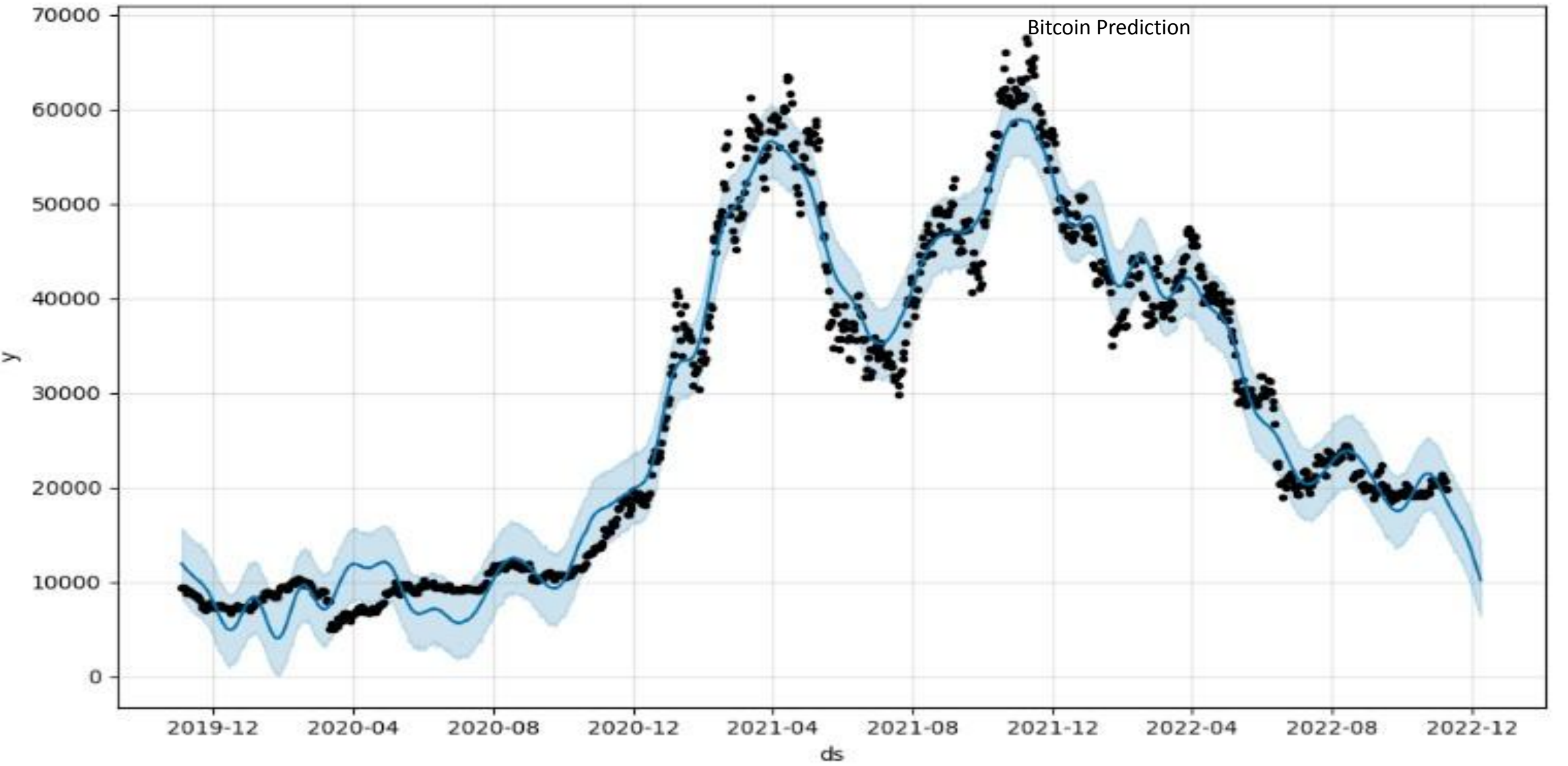
- **Data Source**: Yahoo Live Finance Data
- **Database:** Postgres/SQL with AWS
- Entity Relationship Diagram





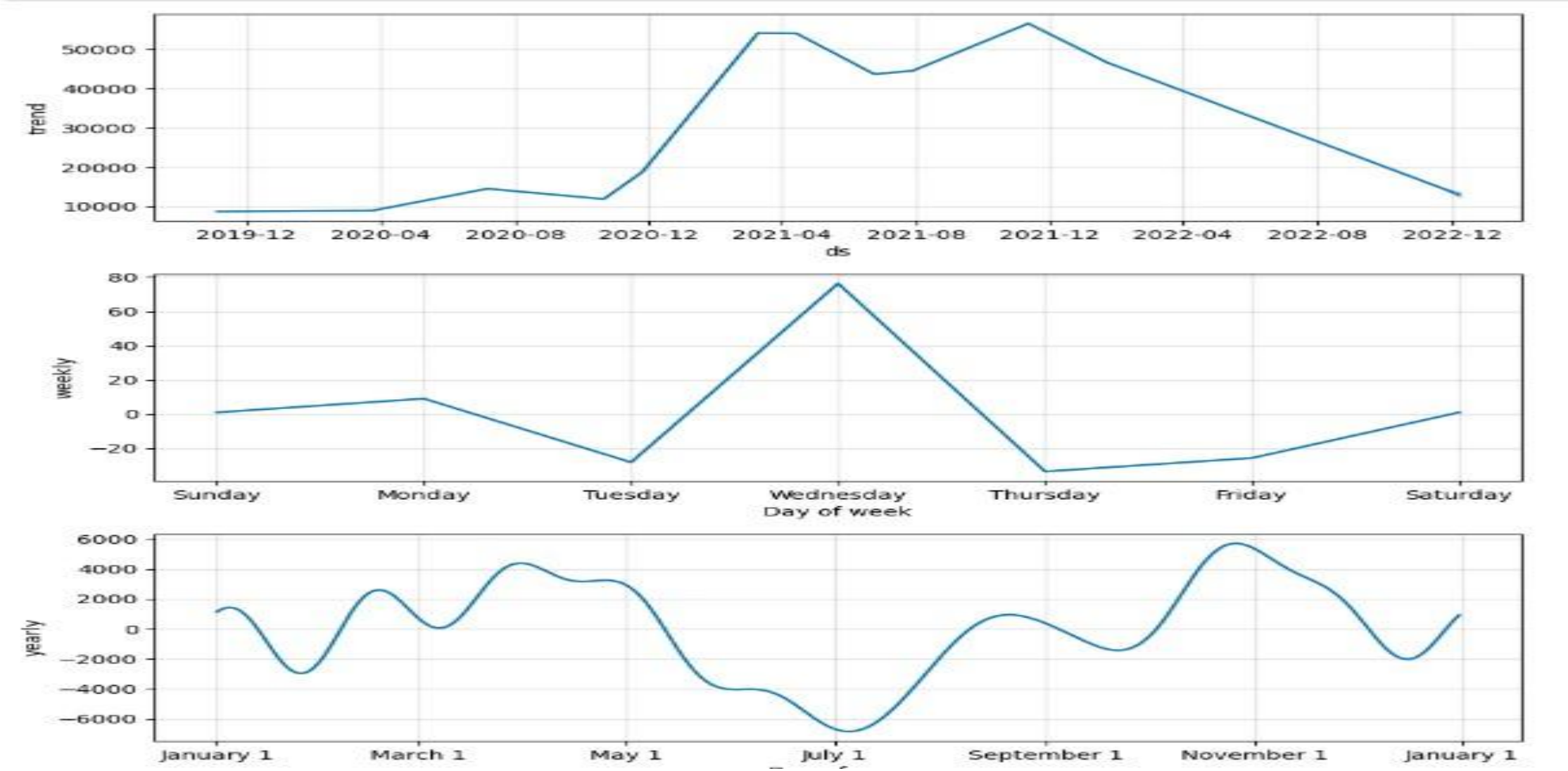
Machine Learning

Facebook Prophet Machine Learning



Facebook Prophet Machine Learning

Bitcoin Prediction



Data Grab 60 min interval

```
ts = TimeSeries(key,output_format="pandas")
data1, TSLA = ts.get_intraday('TSLA',interval="60min",outputsize="full")
data2, GOOG = ts.get_intraday('GOOG',interval="60min",outputsize="full")
data3, AAPL = ts.get_intraday('AAPL',interval="60min",outputsize="full")
data4, AMZN = ts.get_intraday('AMZN',interval="60min",outputsize="full")
data5, META = ts.get_intraday('META',interval="60min",outputsize="full")
```

Dashboard

```
# rename the data

columns = ["open","high","low","close","volume"]
data1.columns = columns
data2.columns = columns
data3.columns = columns
data4.columns = columns
data5.columns = columns
```

columns: list[str]

```
#set a limit to trading times
market1 = data1.between_time("09:30:00","16:00:00").copy()
market1.sort_index(inplace=True)
market1.info()
#data is also 8 days worth
#set a limit to trading times
market2 = data2.between_time("09:30:00","16:00:00").copy()
market2.sort_index(inplace=True)
market2.info()
#data is also 8 days worth
#set a limit to trading times
market3 = data3.between_time("09:30:00","16:00:00").copy()
market3.sort_index(inplace=True)
market3.info()
#data is also 8 days worth
#set a limit to trading times
market4 = data4.between_time("09:30:00","16:00:00").copy()
market4.sort_index(inplace=True)
market4.info()
#data is also 8 days worth
#set a limit to trading times
market5 = data5.between_time("09:30:00","16:00:00").copy()
market5.sort_index(inplace=True)
market5.info()
#data is also 8 days worth
```

Dashboard

```python
my_data1 = pd.DataFrame(data={
    "Stock Name": "TSLA",
    "Daily High": f'{high_price1:.2f}',
    "Daily Low": f'{low_price1:.2f}',
    "Daily Max Price": [daily_max1],
    "Daily Low Price": [daily_low1],
    "Daily Open Price": [open_price1],
    "Daily Close Price": f'{close_price1:.2f}',
    "Daily Percentage Change": f"% {percentage_change1:.2f}"
})
my_data1
```

Python

	Stock Name	Daily High	Daily Low	Daily Max Price	Daily Low Price	Daily Open Price	Daily Close Price	Daily Percentage Change
0	TSLA	236.42	232.05	313.8	177.12	300.744	305.12	% 1.43

Dashboard

```
stock_data = [my_data1,my_data2,my_data3,my_data4,my_data5]
result = pd.concat(stock_data)
display(result)
```

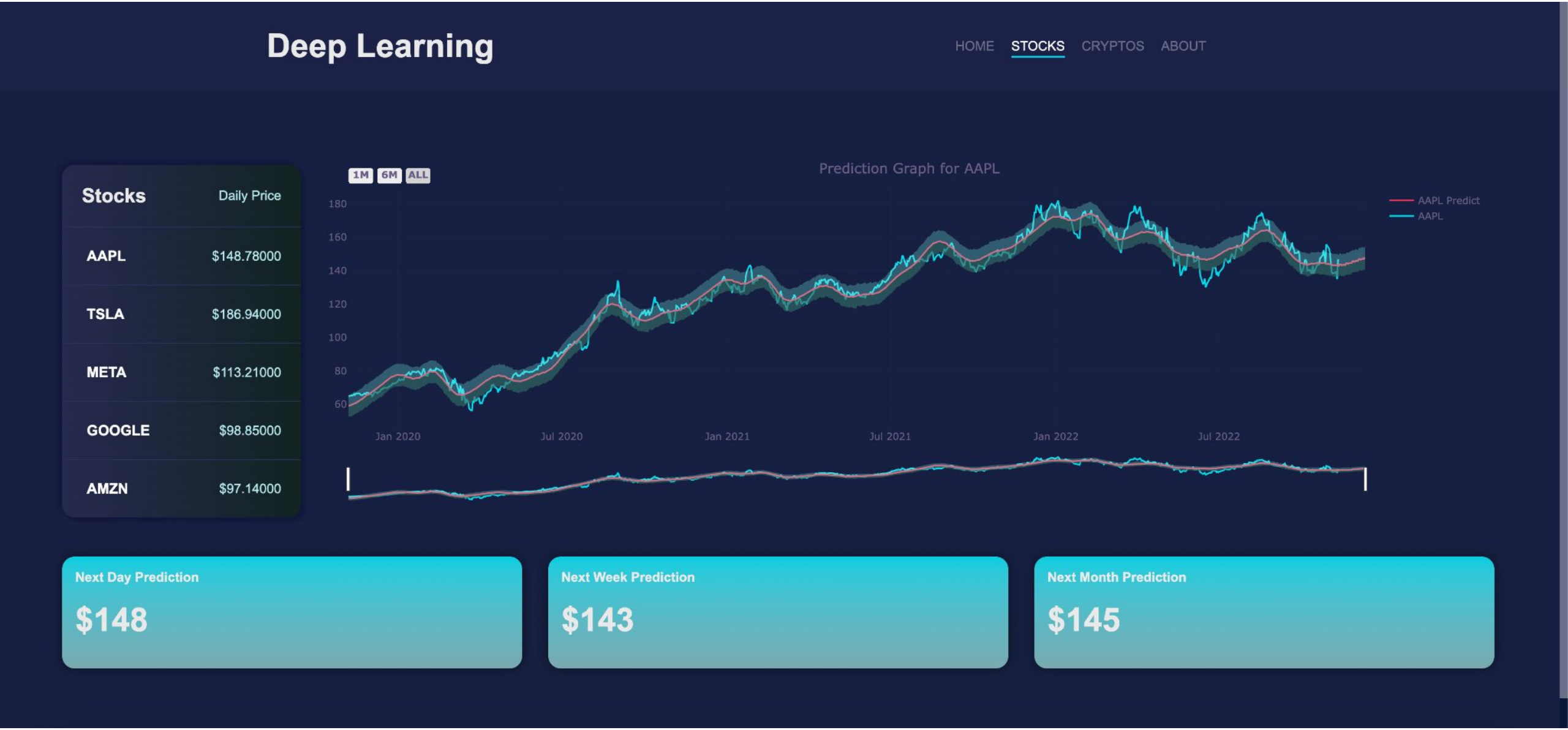
Python

	Stock Name	Daily High	Daily Low	Daily Max Price	Daily Low Price	Daily Open Price	Daily Close Price	Daily Percentage Change
0	TSLA	236.42	232.05	313.8000	177.1200	300.7440	305.12	% 1.43
0	GOOG	97.88	96.82	105.0999	83.4500	102.7000	102.91	% 0.21
0	AAPL	146.30	144.66	158.4766	133.6578	149.3717	150.85	% 0.98
0	AMZN	110.90	109.28	124.7100	85.8700	122.6000	123.92	% 1.07
0	AMZN	125.34	123.43	149.6000	88.0900	145.1100	147.12	% 1.36

Execute Ce

```
final = result.to_html()
print(final)
```

Dashboard


Deep Learning
HOME
STOCKS
CRYPTOS
ABOUT
Stocks
Daily Price
AAPL
$148.78000
TSLA
$186.94000
META
$113.21000
GOOGLE
$98.85000
AMZN
$97.14000
1M
6M
ALL
Prediction Graph for AAPL
AAPL Predict
AAPL
180
160
140
120
100
80
60
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Next Day Prediction
$148
Next Week Prediction
$143
Next Month Prediction
$145

Dashboard


Deep Learning
HOME
STOCKS
CRYPTOS
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Cryptos
Daily Price
BTC
$16548.79
ETH
$1207.3
ADA
$14.3
XRP
$0.378286
BNB
$271.17
1M
6M
ALL
Prediction Graph for BTC
BTC Predict
BTC
70k
60k
50k
40k
30k
20k
10k
0
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Next Day Prediction
$9,794
Next Week Prediction
$18,098
Next Month Prediction
$15,060

What’s Next?

- We can add more stocks and cryptocurrency.
- Prediction can be improved by analyzing more models, make it scalable and more robust, provide buy/sell recommendations.
- Automate the API calls.

Questions?

Thank You