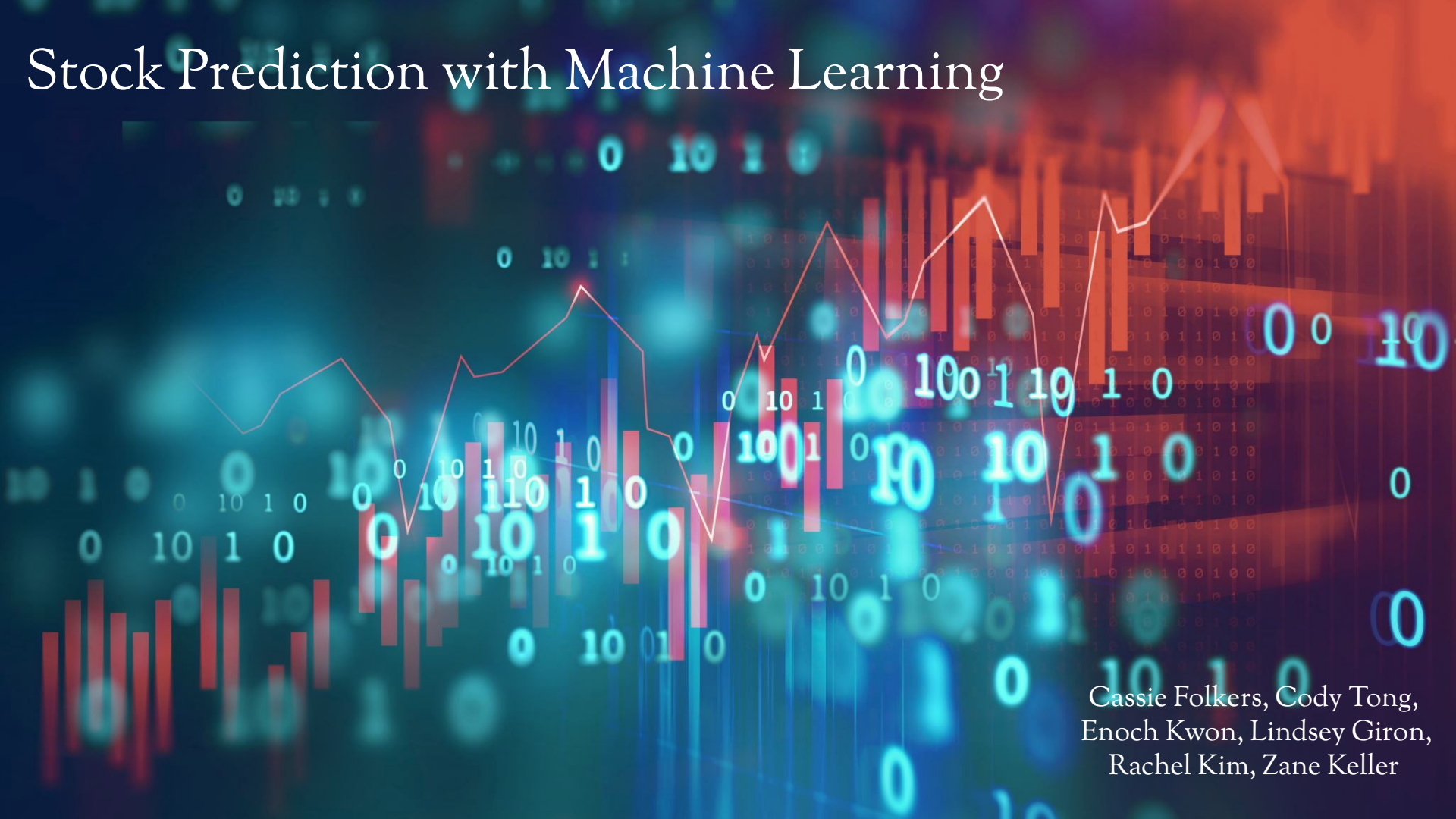
Stock Prediction with Machine Learning



Cassie Folkers, Cody Tong,
Enoch Kwon, Lindsey Giron,
Rachel Kim, Zane Keller

Project Goal

- Create an interactive web-application that utilizes machine learning to predict stock prices based on historical prices for NASDAQ 100 stocks.

Project Dependencies

HTML/CSS/
BOOTSTRAP

PYTHON
PANDAS

MONGODB

JAVASCRIPT

SCIKIT-LEA
RN

AWS

MACHINE LEARNING WALKTHROUGH

Key Endpoints

FMP STOCK API

TWITTER API

MONGODB

ETL to MongoDB

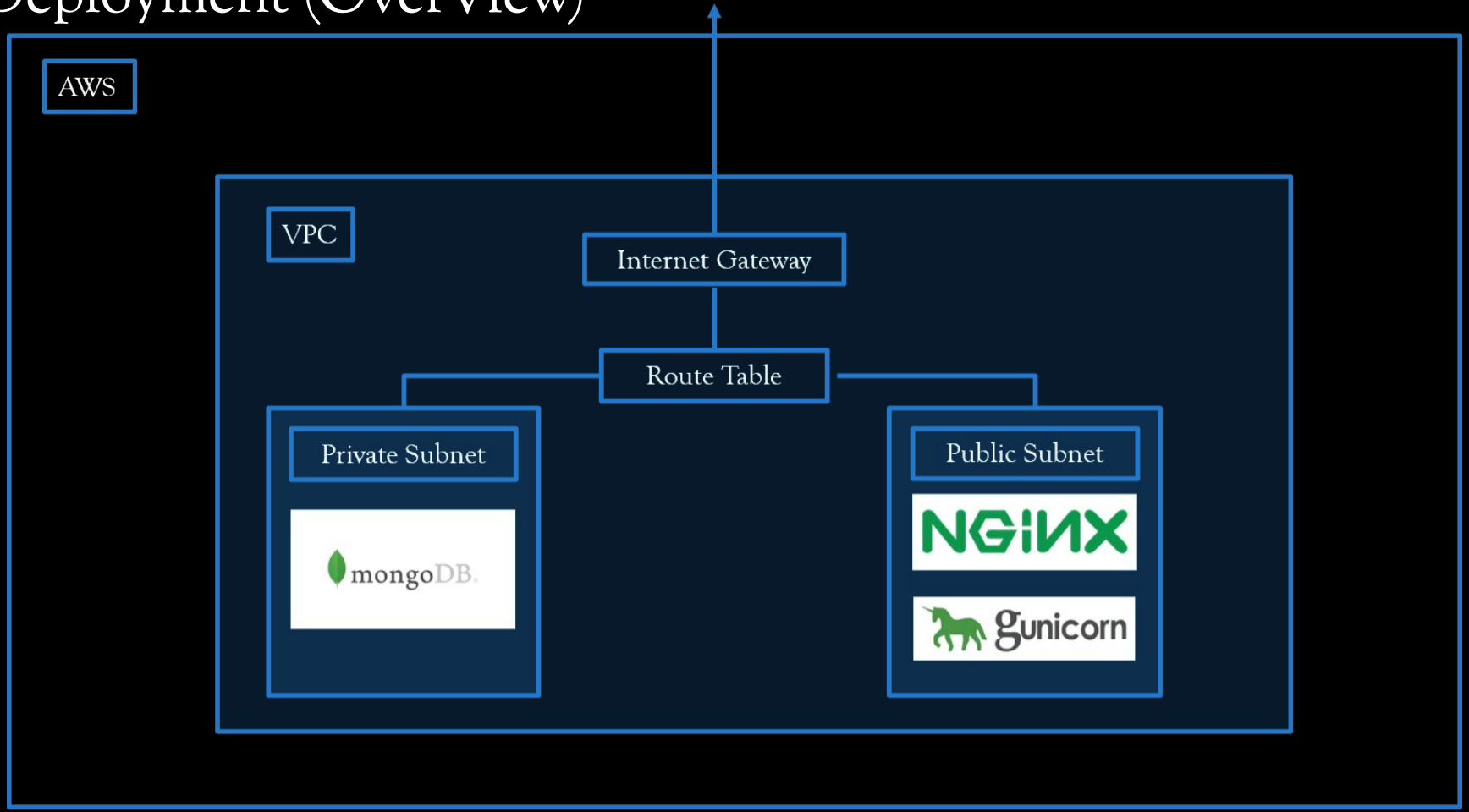
```
# Set variable for current date to gather specific date range
current_date = date.today()
print(f"Current_date is: {current_date}")
# Set variables for six months range using relativedelta -6 months
six_months = current_date + relativedelta(months=-6)
print(f"Six month range date is: {six_months}")
# Set variable for one year range using relativedelta -12 months
one_year = current_date + relativedelta(months=-12)
print(f"One year range date is: {one_year}")
```

```
# Note: reverse needs to =False since ojects are already in descending order
# *this is key for it to work*
reversing_order = sorted(historical_data, key=lambda x: x['date'], reverse=False)
```

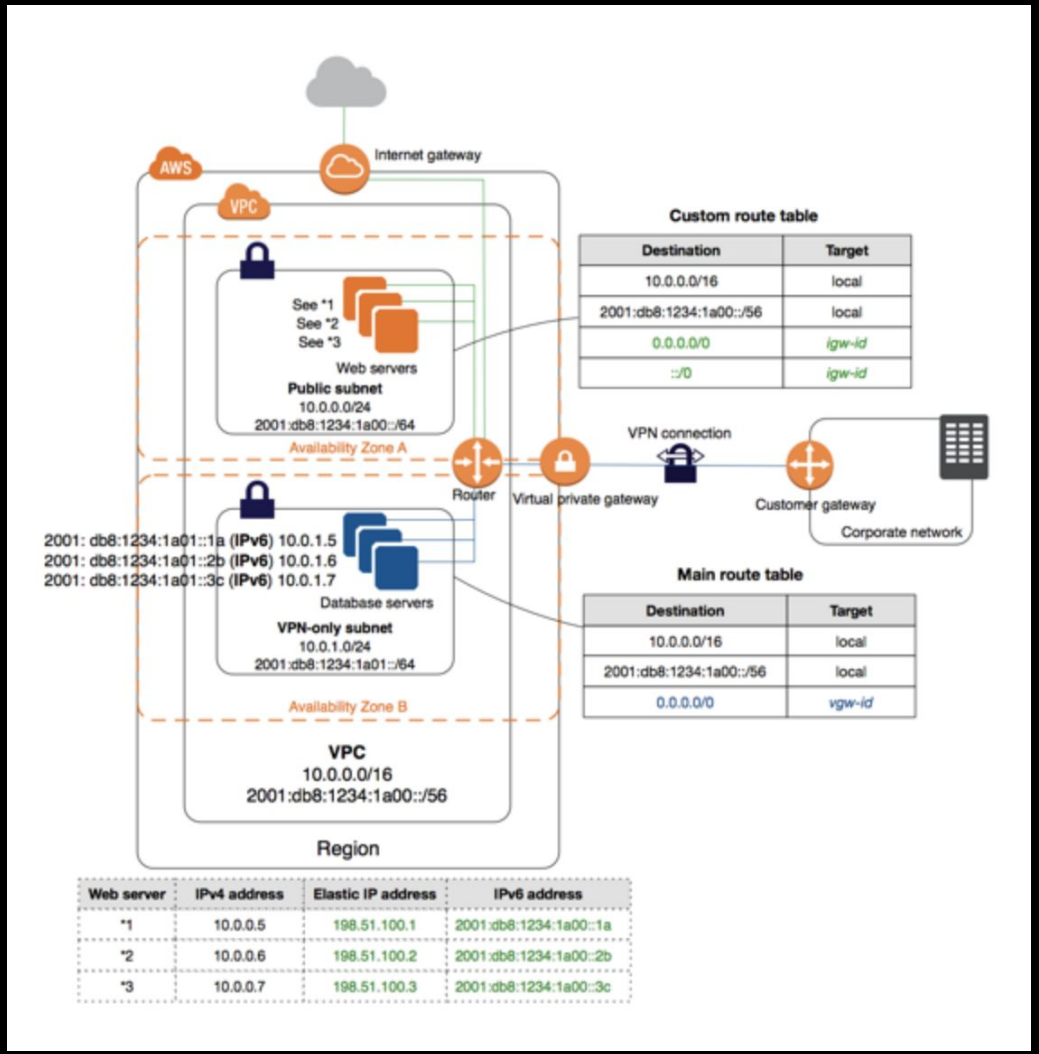
FLASK

```python
@app.route('/all')
def read_all():
    users = mongo.db.six_months.find()
    output = {'All': []}
    # cycle through users
    for user in users:
        symbol = user['symbol']
        historical = user['historical']
        predictions = user['prediction']
        # put symbol in symbol
        out_one = {'symbol': symbol, 'historical': [], 'prediction': []}
        # cycle through historical to extract data
        for h in historical:
            # append formatted data to output
            out_one['historical'].append(h)
        # cycle through predictions to extract data
        for p in predictions:
            # append formatted data to output
            out_one['prediction'].append(p)

        output['All'].append(out_one)

    # print(output)
    return output
```

Deployment (OverView)



Deployment (IP address)



https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Scenario2.html

MongoDB on aws

SSH + KeyPair + IP address

MongoDump

MongoRestore

HEROKU

+

https://uci-project3.herokuapp.com/

LIVE DEMO

https://uci-project3.herokuapp.com/

POSTMORTEM

Decision for AWS

API vs. MongoDB

Twitter Sentiment Trap

</Questions?>