



# **STOCK MARKET PREDICTION USING LSTM**

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# EXPLAINING THE DATA

## Yahoo Finance

We obtained the data from Yahoo Finance – streamlining it through a python library



## Our Choices

We chose to analyze data 60 days before the present day. We wanted to make sure the data is relevant to our model in the present time.

## Limitations

Some companies were only public after a certain year – such as 2012 – which would result in some limitations on the time length of our data.

# DATA PREPROCESSING



## SUBSETTING

We subset the data frame. Our stock market predictions will be based on the closing stock market price.



## RESCALING THE DATA

Using min and max scalar to transform data between 0 and 1



## RESHAPING

Reformatted our data to be a 3D tensor so that it is in an a

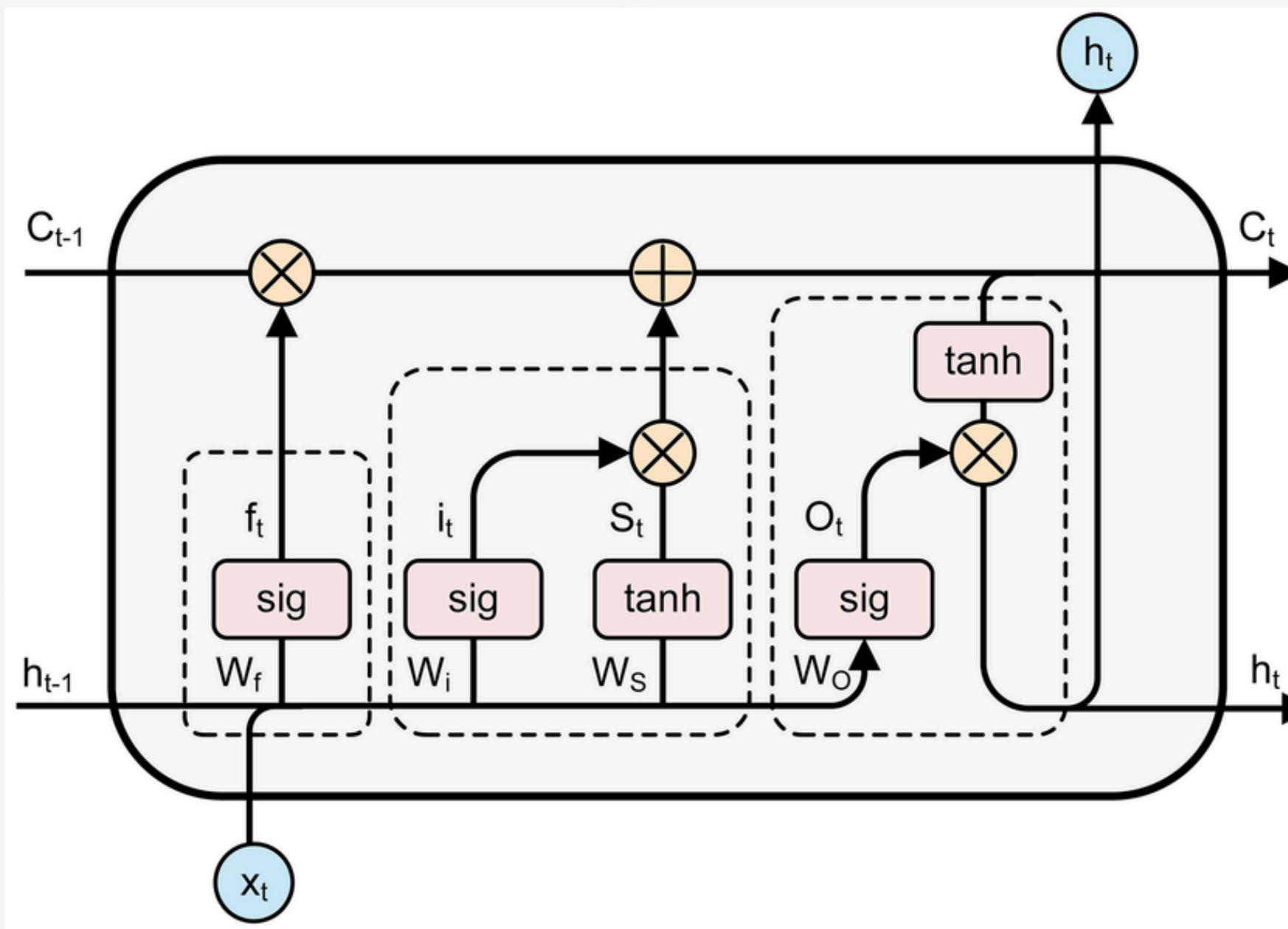


## 80-20 SPLIT

We split the data into training and test set, with 80% for training and 20% for testing

# LSTM MODEL

Single cell of an LSTM layer



Long Term Memory + Short Term Memory

Input gate determines how much of the short term memory is relevant to the long term memory and contributes its result to the long term memory

**INPUT GATE**

Forget Gate calculates how much of long term memory should be kept or forgotten

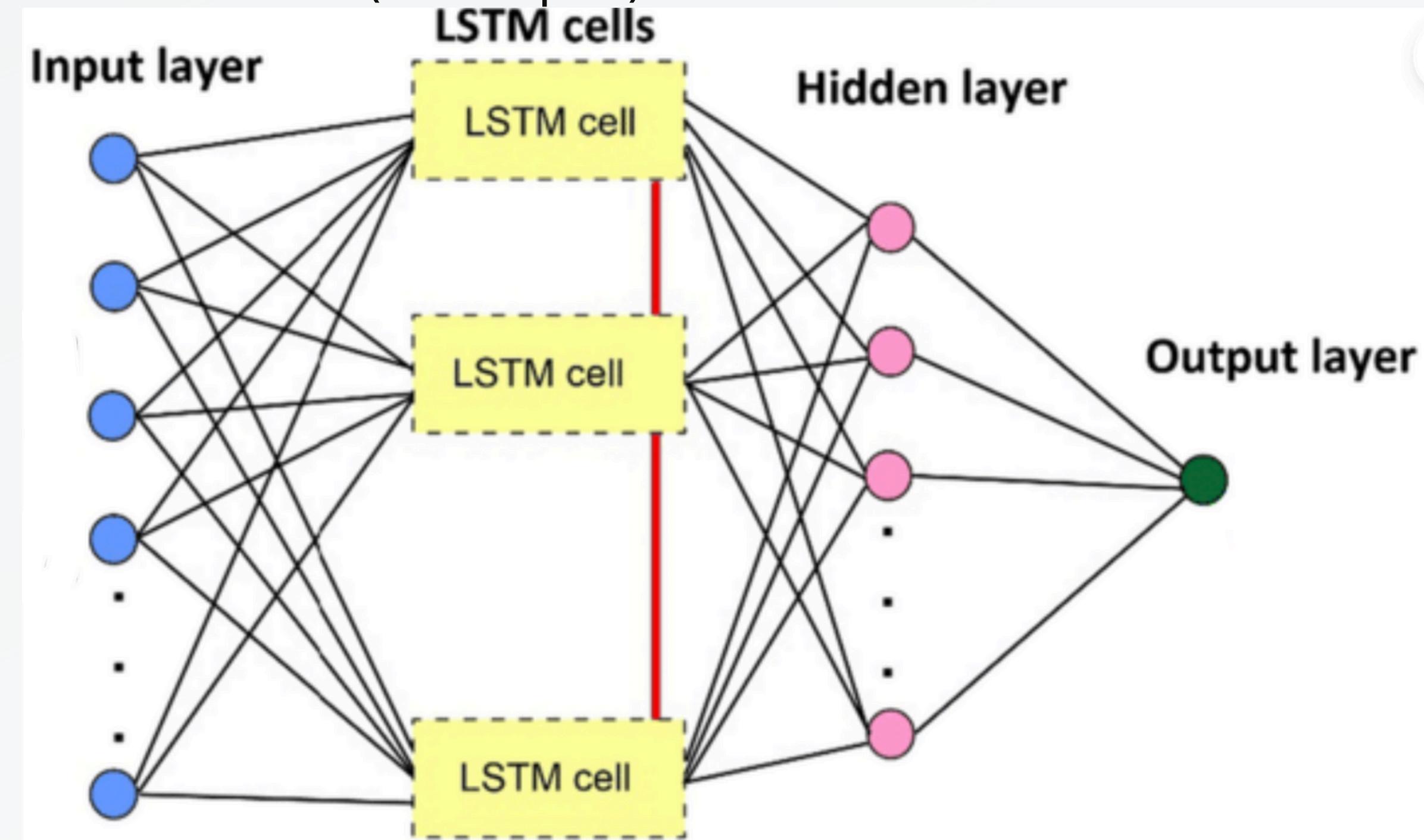
**FORGET GATE**

Output Gate determines the new short term memory based on the long term memory and short term memory

**OUTPUT GATE**

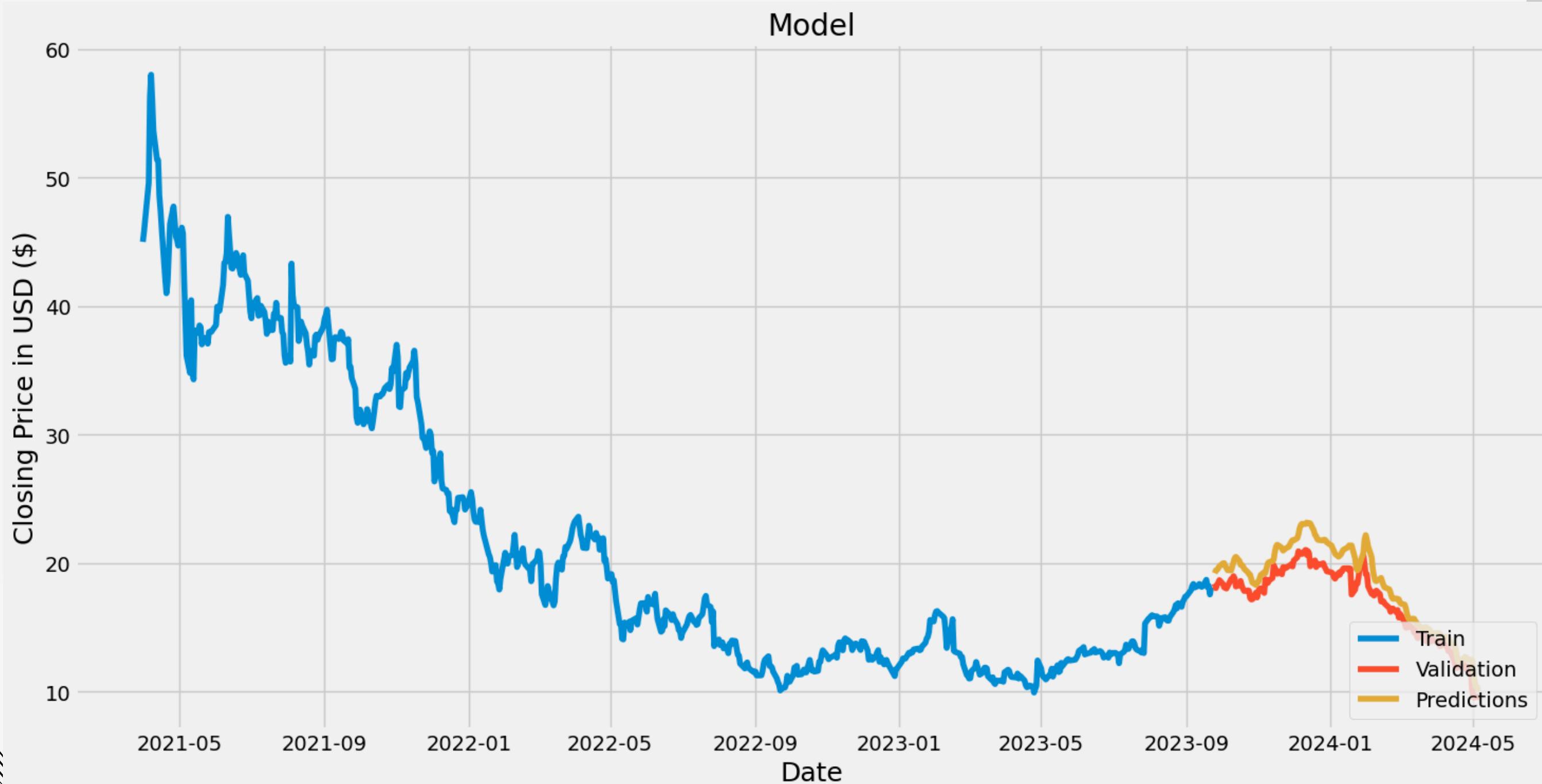
# LSTM MODEL

An entire LSTM model (example)



# COURSERA

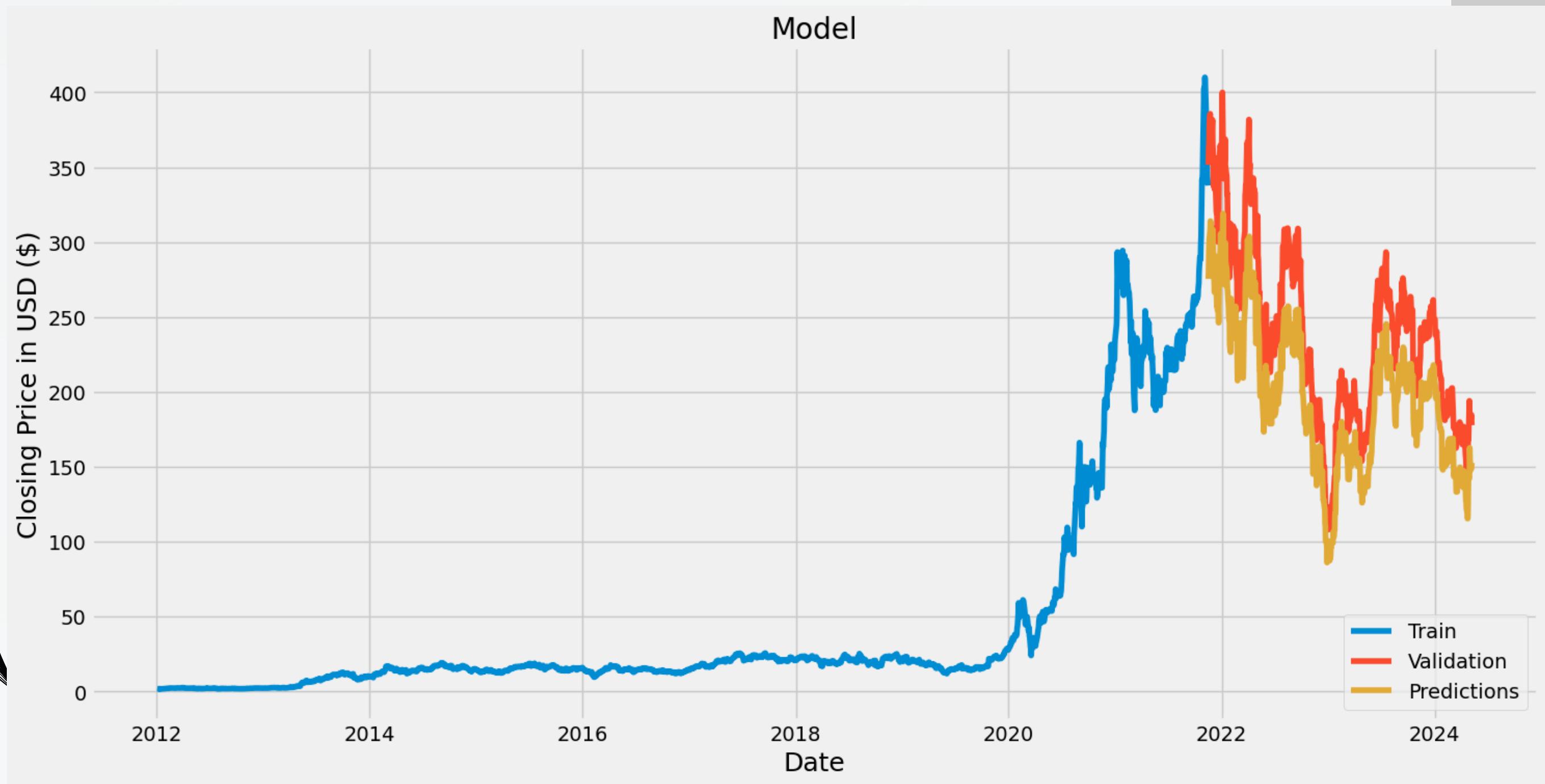
## Stock Market Prediction



coursera

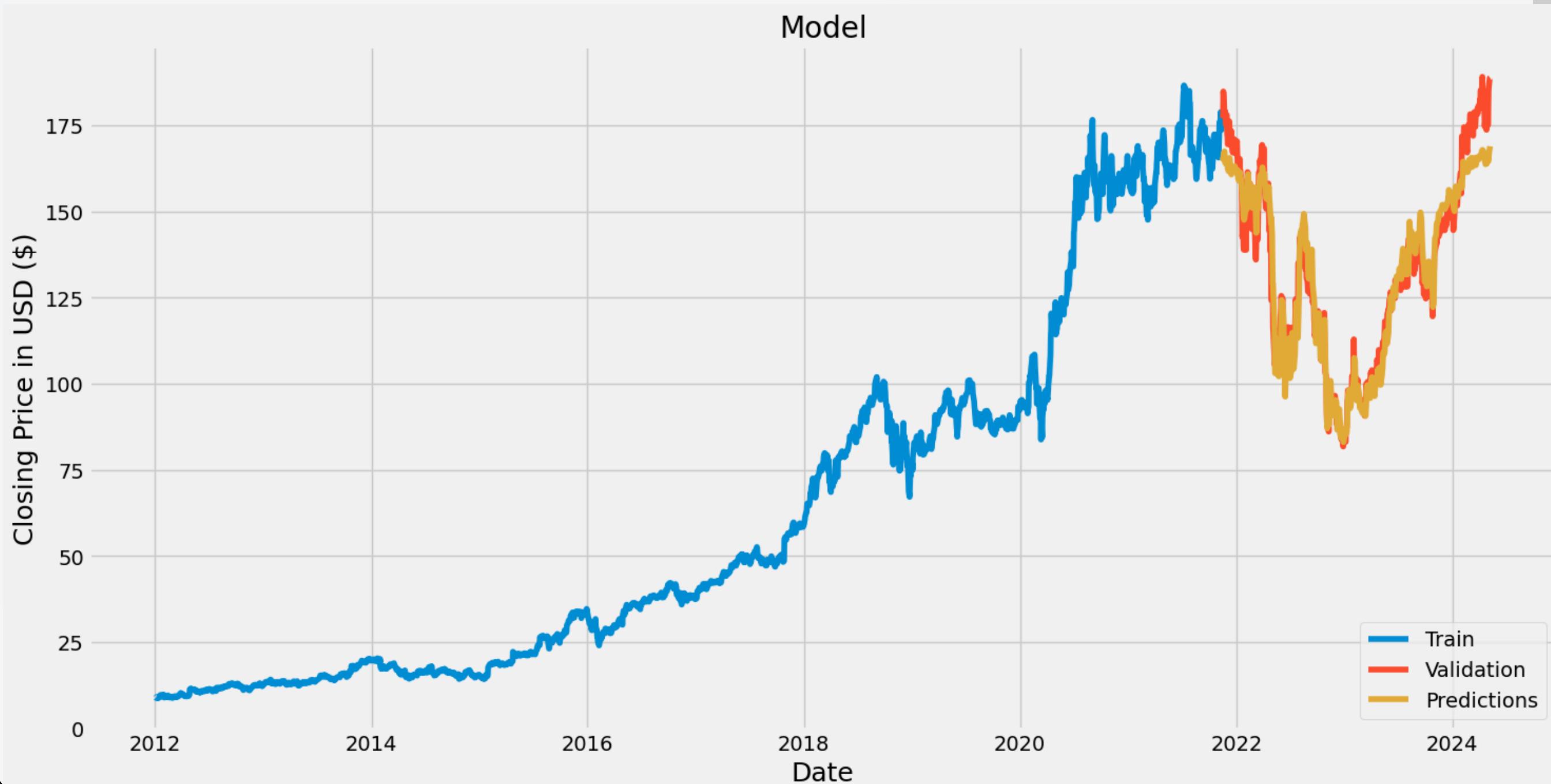
# TESLA

## Stock Market Prediction



# AMAZON

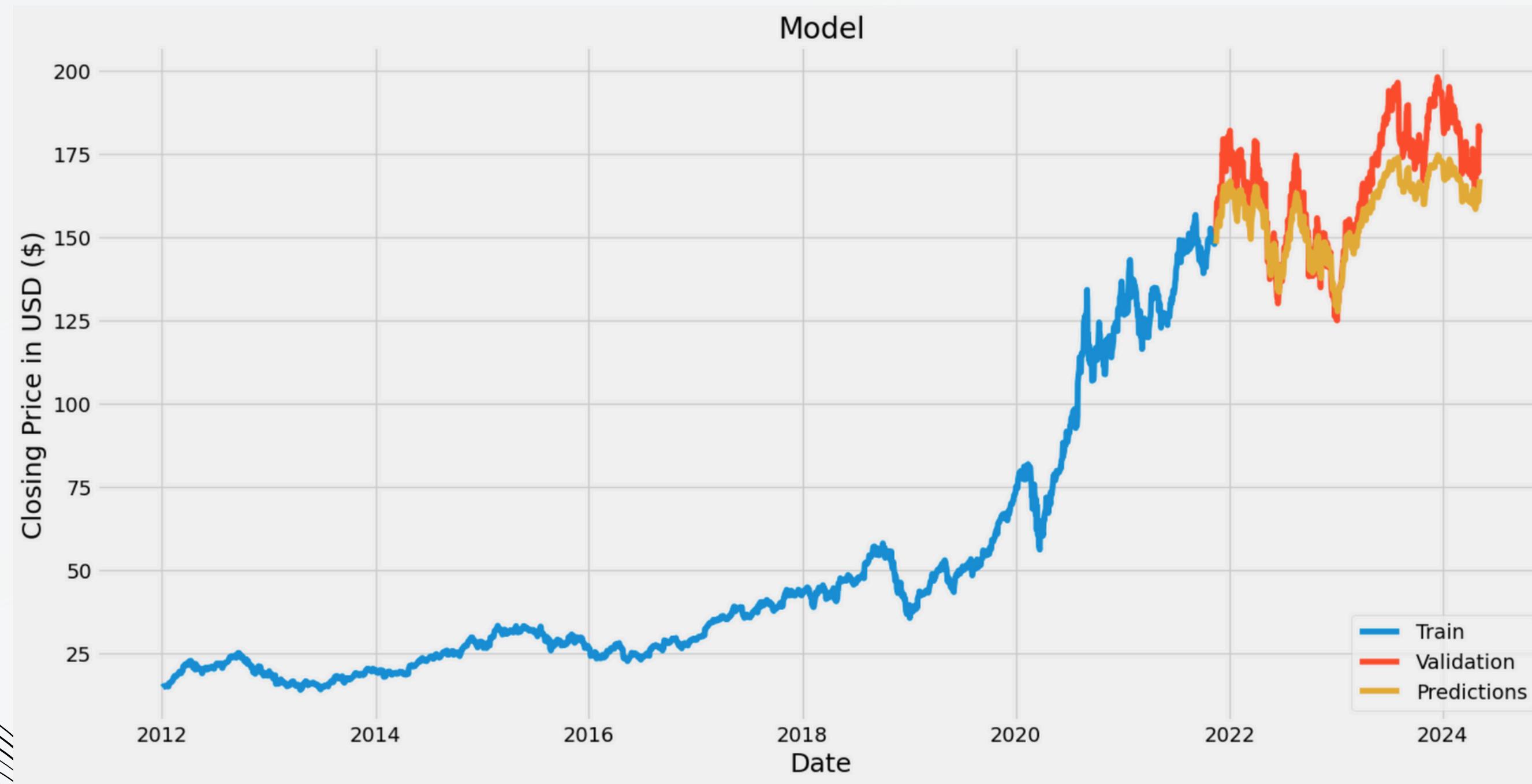
## Stock Market Prediction



amazon

# APPLE

## Stock Market Prediction



**THANK YOU**

