**CNN Model for Stock Market Prediction**

**Incorporating additional market information**

The model so trained was on information from 5 markets. In order to check the robustness of our model, we further include information from other markets and test our model on it. In this project, I have downloaded the data of NIFTY50 for the same period as other markets. For downloading the data, I have used Yahoo! Finance, and TA-lib for further formatting the data for technical indicators like: Relative Change of Volume, Return of 2 days, 3 days and 4 days before, 5 day Rate of Change, 10 day Rate of Change, 15 days Rate of Change, 20 days Rate of Change, 10 days exponential moving average, 20 days exponential moving average, 50 days exponential moving average and 200 days exponential moving average.

On applying the same model on data set including NIFTY50, I got an F1 score of 0.6973.

**Deploying model using Flask**

The model was first saved in a single H5 file. This format stores the model information as well as the model weights. After saving the H5 file, I designed a simple html interface for the user to input the data of a particular market in a certain format and then for the model to run using that input to give the prediction of whether the market index would go up or down for the next day.

A pipeline was created as a function which automates the entire process of extracting the columns from our data, and predict the output as: Positive or Negative.

A sample screenshot is attached below:

