**PROJECT REPORT**

**FINANCIAL ANALYTICS**

**SUBMITTED TO: HARPREET VIRK Date: 4th April 2020**

**SUBMITTED BY:** SEONG KYOUNG - 0725164

: TEJAS MAHESH PATEL - 0734912

: SOORYA SURESH - 0735168

: RAJWINDER KAUR - 0732989

: YI ZHOU - 0730368

: MOHSIN MEGHJANI - 0730241

**Introduction**

Since, Machine learning is widespread field which is expanding by the heaps and bounds. We as team has selected the dataset “**CRYPTOCURRENCY”.** It is virtual or digital money which takes the form of tokens or coins. It is not controlled by any central authority. Many cryptocurrencies are decentralized networks based on blockchain technology. It is designed to work as a medium of exchange that uses strong cryptography to secure the financial transactions and control the creation of additional units and verify the transfer of assets.

**Related Work**

Once, the dataset has been collected, it will be filtered and pre-processed. We selected top 3 crypto currency from the data based on market cap which are **Bitcoin, Ethereum and XRP.** In the further stage, we did work in excel file such as Moving Average, Simple Exponential Smoothing and Double Exponential Smoothing. On the other hand, we did LSTM in python.

In the moving average based on their closing price we were predicting their price for next some days such as after 9day, 15day and 21day and saw the difference with actual price. Simple Exponential smoothing we used data solver to find the alpha which give us RSME value. Double Exponential Smoothing we saw the difference with the closing price and closing forecast price.

In LSTM we did work on only Bitcoin and Ethereum prices. In the LSTM we used the epoch 15 and epoch 50 and saw the difference between the actual price and predicted price.

**Conclusion**

We worked on the models to predict the close price of market price. In LSTM epoch 50 performed better as compared to epoch 15. The cryptocurrency market working 24 hours but according to our research the most volatile period in a day is 3 to 4 pm.