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SDA FINAL PROJECT

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**Project name:** Microsoft Stocks Price Prediction

**Project goal:** Predict Microsoft stock price as accurate as possible using different models

Today we are going to present to you a data science project we have chosen to work on which is the prediction of the stock prices for Microsoft Corporation (MSFT). Microsoft Corporation is one of the most successful companies in the technology industry and has a huge influence on the global economy. By analyzing the stock prices of Microsoft, we can gain valuable insights into the market trends and potentially predict the future prices of the company’s stocks. This information can be used by investors to make informed decisions about buying or selling stocks, and ultimately maximize their profits.

**Dataset:** Microsoft stock price from 05.03.2018 till 03.03.2023 (weekdays)

<https://finance.yahoo.com/quote/MSFT/history?p=MSFT>

1. Shape of data: 1259 data rows & 7 features (columns)
   * 1. Date – the date when the transactions happened
     2. Open – opening price, the price from the first transaction of that day
     3. High – the highest price of the day
     4. Low – the lowest price of the day
     5. Close – Closing price, the price at which the share closed at the end of the day
     6. Adj Close - Adjusted closing price (closing price adjusted for corporate actions such as dividend payouts, stock splits, or the issuance of more shares)
     7. Volume – the number of shares traded that day
2. What data from that do we need to build our model
   * 1. Date – to find historical connections, patterns, trends over time, identify seasonality etc.
     2. Close – the model will predict the close price, which is important in determining the performance of a stock.

**What business problem is solving?**

Company’s stock analysts are spending time and resources on getting first evaluations on possible future stock prices of different companies. Having an automatised solution that gathers possible future evaluations on different stock prices will help analysts filter the stocks for deeper analysis. Also algorithms can better analyze complex sets of historical data, discover hidden relationships between data sets, make forecasts, and learn along the way to become even more accurate.

<https://hbr.org/2019/12/what-machine-learning-will-mean-for-asset-managers>

<https://www.itransition.com/machine-learning/stock-prediction>

Overall stock price prediction is important to businesses as it can help them make better investment decisions, manage risk, plan finances, and gain a competitive advantage in the market.

**Does the project have a social effect?**

By promoting economic growth, job creation, and financial literacy, stock price prediction can contribute to the well-being of society as a whole. Therefore, while the primary purpose of stock price prediction may be to help businesses make better investment decisions, it can indirectly impact social issues and contribute to broader social progress.

**Summary**

We will be using a variety of machine learning models to analyze this data, including regression analysis, time-series forecasting, and deep learning techniques. By combining these models, we hope to build an accurate and reliable prediction model that can help investors make informed decisions about their investments.