INVESTMENT PREDICTION

High Level Design Document

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Abstract:

Data is power in today's world. Since news organizations have terabytes of data kept on servers, everyone is trying to find insights that will benefit the company. The classification of news articles stands out among the many examples I could give of how analytics is being utilized to motivate actions. There are many sites that produce a huge amount of news every day today on the Internet. Additionally, user demand for information has been steadily increasing, thus it is critical that the news be classified to enable users to quickly and effectively obtain the information of interest. In this project, the machine learning model for automatic news classification is discussed. This technique could be used to find untracked newspaper articles and/or provide personalized recommendations based on the user's past preferences.

1. Introduction

1.1 Why this High-Level Design Document?

The purpose of this High-Level Design (HLD) Document is to add the necessary detail to the current project description to represent a suitable model for coding. This document is also intended to help detect contradictions before coding and can be used as a reference manual for how the modules interact at a high level.

The HLD will:

- Present all of the design aspects and define them in detail
- Describe the user interface being implemented
- Describe the hardware and software interfaces
- Describe the performance requirements
- Include design features and the architecture of the project
- List and describe the non-functional attributes like:
    - Security
    - Reliability
    - Maintainability
    - Portability
    - Reusability
    - Application compatibility
    - Resource utilization
    - Serviceability

1.2 Scope

The HLD documentation outlines the system's architecture, including the technology architecture, application architecture (layers), application flow, and database architecture. The HLD employs simple to moderately complex terms that system administrators should be able to understand.

1.3 Definitions:

Term	Description
ML	Machine Learning
LSTM	Long Short Term Memory
Stremlit	Application for deploying the model

2. General Description

2.1 Product Perspective

The Investment Prediction is a Time Series Model used to forecast the share price of upcoming years.

2.2 Problem Statement

The developed Investment prediction model can assist the user in forecasting the share prices for their desired number of years. The model can predict range of share price up to 5 years.

2.3 Proposed Solution:

The proposed solution uses the data from yahoo finance website. The share price of 5 organizations was taken into consideration. LSTM algorithm is used to train the model. The model was deployed in the Streamlit application.

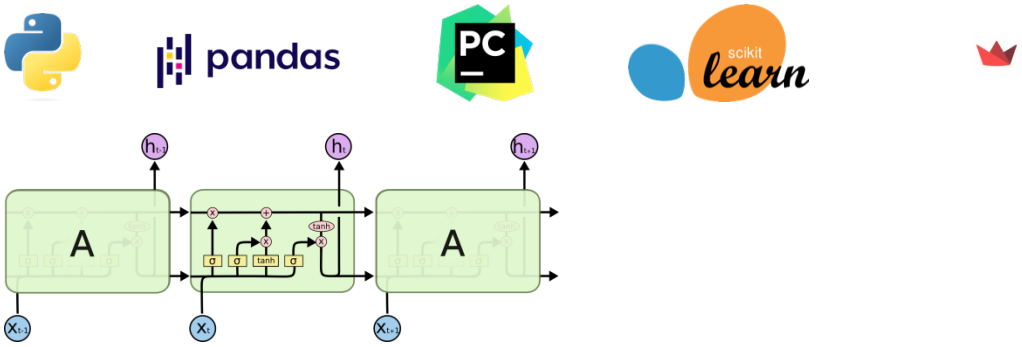
2.4 Further Improvements:

The model can be further improved by adding more organizations and number of years to do the investment prediction.

2.5 Data Requirements:

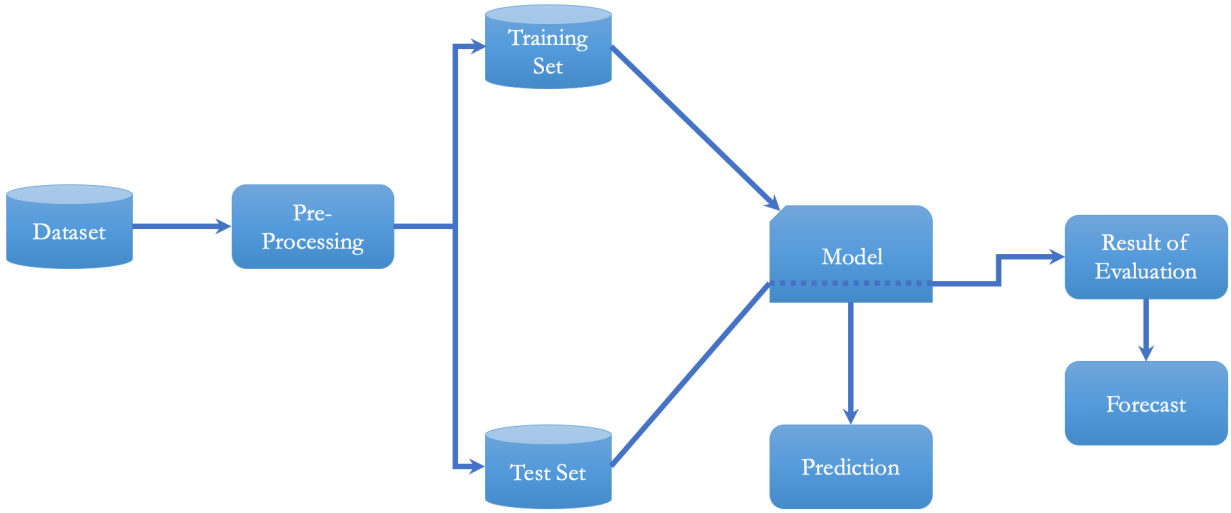
- Stock Data
- Algorithm
- Database

2.6 Tools used:

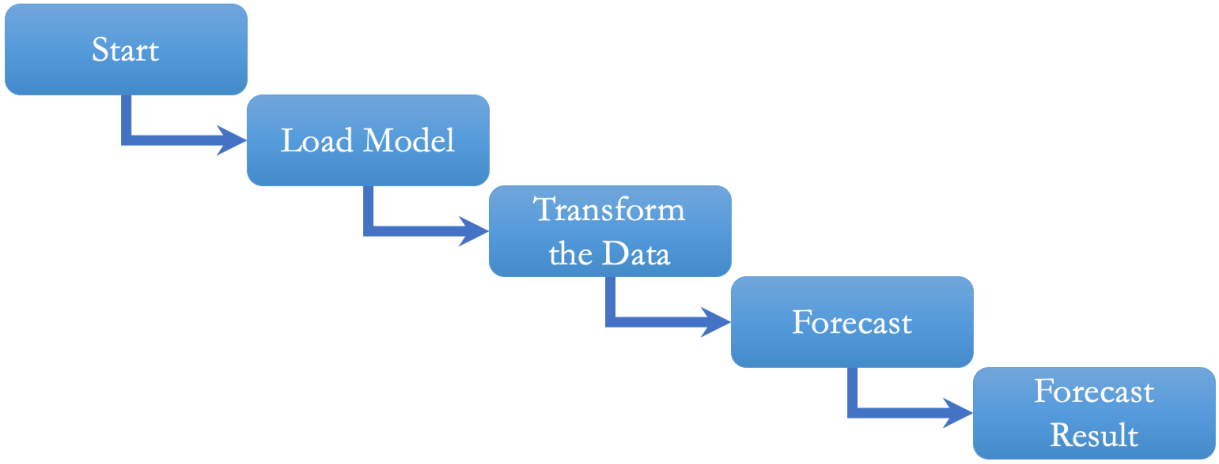


3. Design Details

3.1 Process Flow



3.2 Deployment Process



4. Performance

LSTM Algorithm predicted the results with great accuracy.

4.1 Reusability:

The code written and the components used have the reusing ability without any problems.

4.2 Resource Utilization

A performing task uses all the processing power available for its smooth performance.

5. Deployment

6. Conclusions

Investment Prediction project is based on stock market data. LSTM deep learning model is used for training the data and prediction is done. Testing is also done with a part of data and the resulted accuracy is the best. Forecast for another 5 years can also be made with the model.