Investment Prediction

Low Level Design Document

Pauline
ineuron.ai

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DOCUMENT VERSION CONTROL

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16-02-2023	1.0	LLD Document	Pauline IC
22-02-2023	2.0	LLD Document	Pauline IC

Table of Contents

1. Introduction

1.1 What is Low-Level design document?

A Low-Level Design Document (LLDD) is a technical document that provides a detailed description of how a software system, system component, or feature will be implemented. It typically includes information on the system's architecture, data structures, algorithms, interfaces, and dependencies. The purpose of the LLDD is to provide a clear and complete understanding of the software system being designed, and to serve as a guide for the implementation and testing of the system.

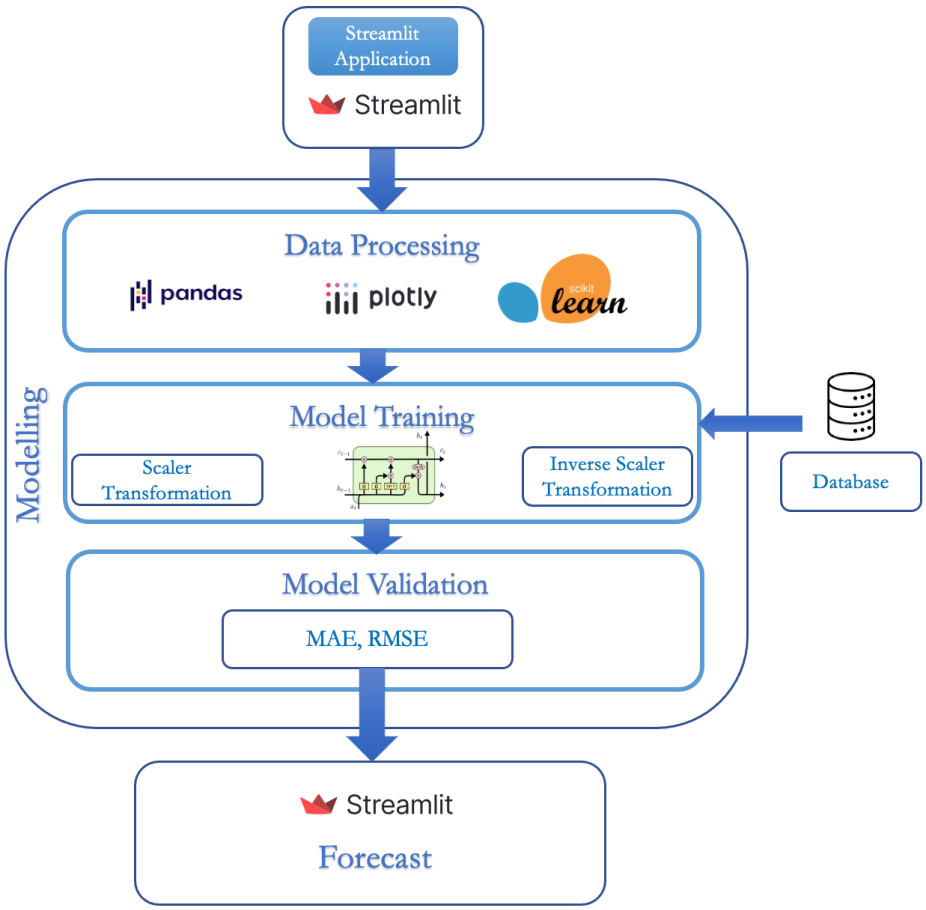
1.2 Purpose and scope of the document

Low-level design (LLD) is a component-level design process that follows a stepby-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work.

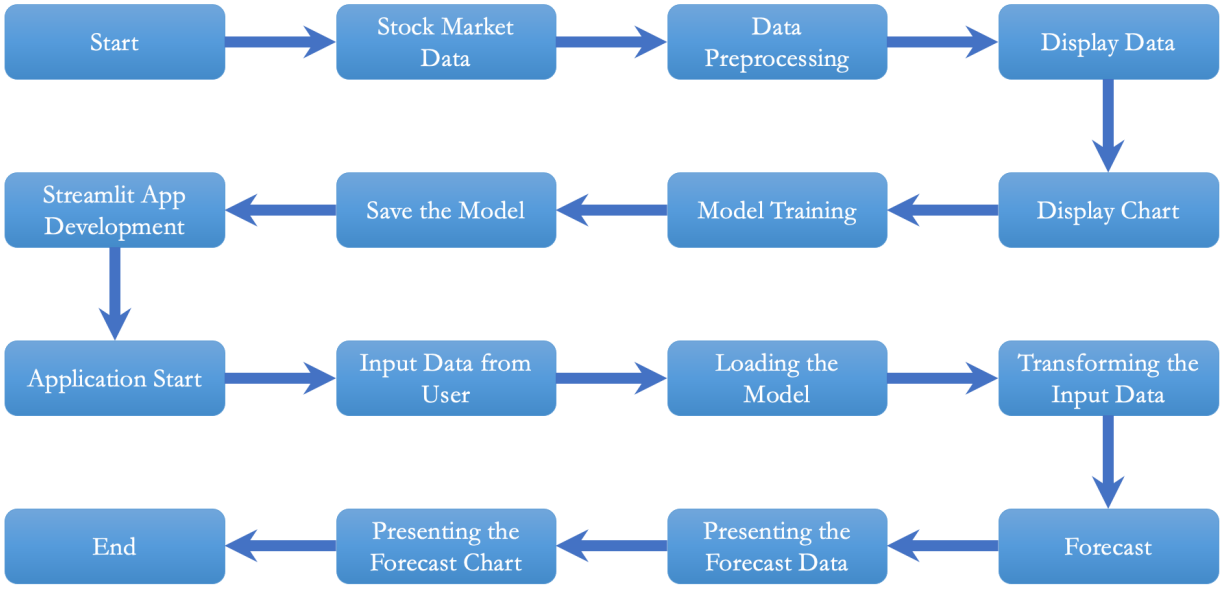
2. System requirements

- Windows 7 and above
- SQL
- PyCharm
- Streamlit

3. System Architecture

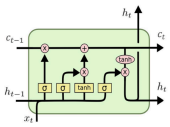


4. Detailed Design



5. Dependencies

pandas



scikit learn

6. Interfaces

- Input and output data are from stock market webpage
- Table and chart view for both raw data and forecast data
- Syntax error and logical errors are taken into consideration

7. Error Handling

The model handled getting inputs, numerical errors, model loading, and data transformations with separate exception handlers.

8. Performance

Expected response times

- The system logged every event so that the user knows which process is running internally.
- The system identifies at which step logging required.
- The system logged each and every system flow

9. Resource usage

When a task is performed, it used all the processing power available until its work done.

10. Implementation

- Python SQL
- sklearn
- Pandas
- plotly
- Stremlit
- lstm

11. Test and Evaluation

Test cases

Unit Test Cases:

Test case Description	Prerequisites	Expected Result
Verify whether the Application is accessible to the user	1. Application should be defined	Application should be accessible to the user
Verify whether the Application loads completely for the user when it is accessed	1. Application is accessible 2. Application is deployed	The Application should load completely for the user when it is accessed
Verify whether user can see dropdown fields on logging in	1. Application is accessible 2. User is signed up to the application 3. User is logged in to the application	User should be able to see input fields on logging in
Verify whether user can select the input field	1. Application is accessible 2. User is signed up to the application 3. User is logged in to the application	User should be able to select all input fields
Verify whether user gets range scroll menu to select the range	1. Application is accessible 2. User is signed up to the application 3. User is logged in to the application	User should be presented with recommended results on selecting the range
Verify whether the classified results are in accordance with the input user made	1. Application is accessible 2. User is signed up to the application 3. User is logged in to the application	The classified result should be in accordance with the selections user made

12. Conclusion

The document included a thorough description of the Investment Prediction Project. Investment Prediction will analyze the stock market data and will predict the result for another 5 years. This is done based on the learning made by the Long Short Term Memory (LSTM) model. The model is trained with past 20 year's data for better prediction. The model could predict any stock market data with the best accuracy. The developed model is deployed in a Streamlit application and can be accessed in the local host.