MINOR-1 PROJECT

SYNOPSIS

For

TradeHelp: A helping hand for the stock market

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Synopsis Report

Project Title

TradeHelp: A helping hand for the stock market

Abstract

The rapid growth of entrepreneurship scenario across the globe has made it a much more difficult task to keep up with all the past stock records of various companies. So, to help the trading enthusiasts to make their next move profitable in the market, we will be programming to build "TradeHelp".

Key Words: Regression and prediction algorithms

Introduction

Now-a-days, investing our money into stock market is a booming trend. Over the time, people have understood the worth of making their money earn for them rather than just keeping it in the bank with hardly any returns. Stock market is one of the most chosen options. Other choices can range anything like property, gold, mutual funds, etc.

Stock market has the highest potential for extremely high returns. But this comes along with the highest risk factor too. Other big problem is managing so much of past data and analysing it to crack the trend of the stock prices. This data analysis can be done by ML with much greater accuracy to that of humans.

TradeHelp project is inspired by the growing need for reliable stock market predictions and well-informed decision-making, which aims to have important consequences for monetary gain and risk management. In this project we will combine technical expertise with a strong interest in finance, and offer helpful

instructional resources for anyone looking to grasp data analysis and machine learning in a real-world setting.

Literature Review

TITLE	INFERENCE
Stock Market Analysis Using Linear Regression and Decision Tree Regression [1]	In this paper, two supervised regression machine learning algorithms are taken and a statistic formula is used to predict the better accuracy of stock price and then comparing the performance based on the size of the dataset and algorithmically.
Analysis of stock market predictor variables using linear regression [2]	In this paper, there are two models having different features. One model having all the features and the other model with two features volume and adjusted close omitted. Based on these features various accuracy methods are used to analyse the performance.
Stock Price Prediction using Linear Regression in Machine Learning [3]	The paper anticipates the stock price of the organization on any day by utilizing straight relapse and polynomial relapse based on the exactness of the various models for regression.
stock market prediction using linear regression modelling [4]	This site stated that linear regression models are gaining prominence in stock market prediction due to their potential to provide more accurate forecasts amidst the constantly changing stock prices.
Machine Learning Regression [5]	This site gives a basic introduction of Machine Learning and knowledge about linear regression from absolute basics.
Regression Analysis and the Best Fitting Line using C++ [6]	This article discusses the basics of linear regression and its implementation in the C++ programming language. It also helps to find the best fit line for the data.
Linear regression from scratch in C++ [7}	This video helped us to see the implementation of linear regression in C++ and also visualize using graph.

Problem Statement

Developing an accurate stock market prediction system is essential due to the volatility and unpredictability of financial markets. Current methods often fall short, creating risks and missed opportunities for investors.

This project aims to create a reliable predictive model to improve decision-making, managing risks, and gaining a competitive edge in the financial industry, while considering ethical and regulatory implications.

Objectives

Main Objective: The core objective of this endeavor is to help the user in increasing the profits in stock market trading.

Sub objectives:

- Finding applicable stock pricing datasets
- Preprocessing the dataset to filter out the input values
- Training the model
- Testing the model and checking accuracy
- Improving the model accuracy based on the testing results

Methodology

The methodology for our TradeHelp using deep learning techniques can be outlined as follows:

Dataset Collection: Firstly, a large dataset of stock prices is collected for training the machine learning model.

Model Selection: The next step is to select the machine learning models that will be used for prediction. Several popular prediction models are Regression, Random Forest, etc.

Model Training: The ML model learns prediction from the training data and predicts future stock prices.

Model Evaluation: After training, the model needs to be evaluated on a separate validation dataset to assess its performance.

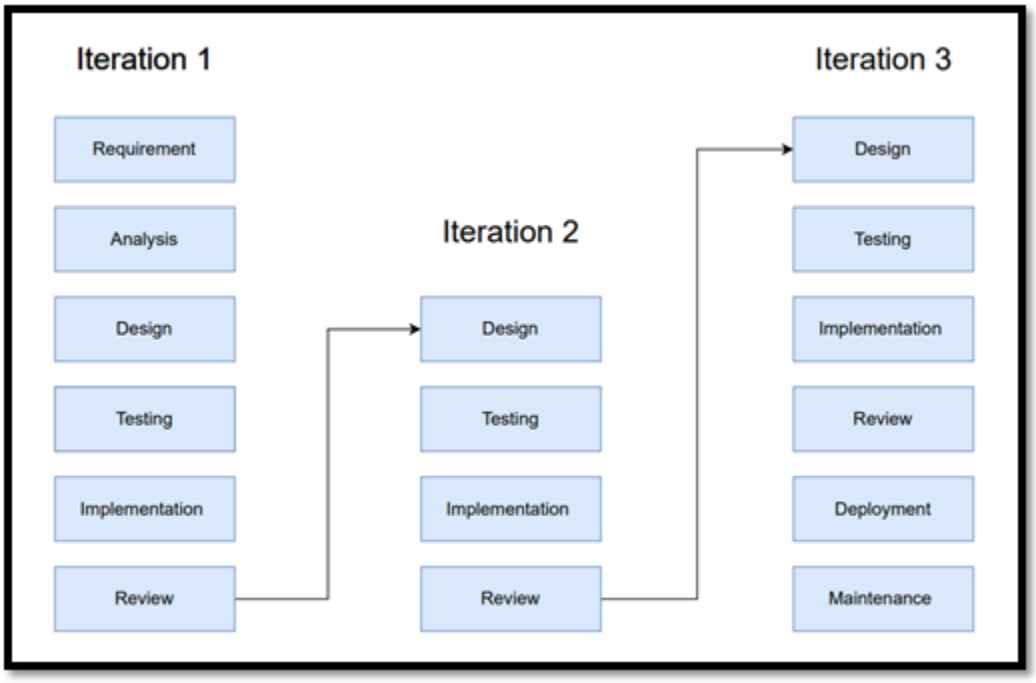
Model Optimization: Based on the evaluation results, the model can be fine-tuned and optimized to improve its performance.

SEPM Model

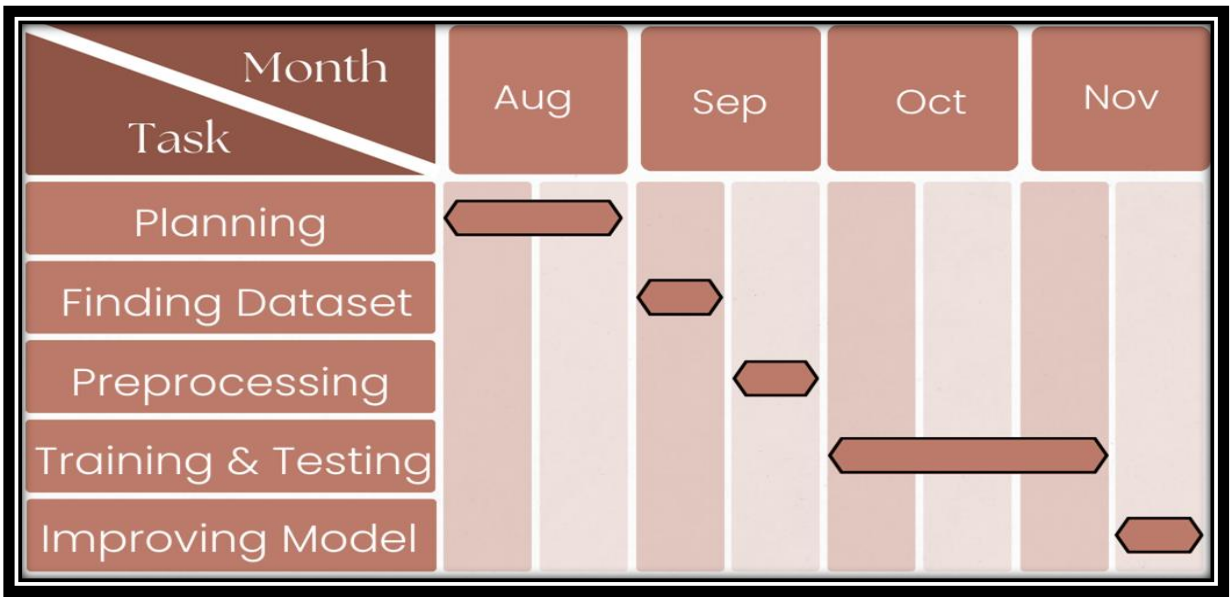
Iterative Model

We will be using the Iterative Model to implement our project. The iterative method begins with a basic implementation of a limited set of software requirements in the iterative model, then repeatedly improves the evolving versions until the entire system is built and prepared for deployment.

It is not the goal of an iterative life cycle model to begin with a complete set of criteria. Instead, just a portion of the programme is specified and implemented at the beginning, and then it is inspected to find any further requirements. After each iteration of the model, this procedure is repeated to create a new version of the programme.



Gantt Chart



References

[1] Karim, Rezaul & Alam, Md & Hossain, Rezaul. (2021). Stock Market Analysis Using Linear Regression and Decision Tree Regression.

[2] Seethalakshmi, Ramaswamy. (2018). Analysis of stock market predictor variables using linear regression. International Journal of Pure and Applied Mathematics.

[3] Amit Gupta, T.J.Nagalakshmi. (2019). Stock Price Prediction using Linear Regression in Machine Learning.

[4] https://medium.com/@isirabandarafb/stock-market-prediction-using-linear-regression-modeling-5a1c9b510254

[5] https://blog.quantinsti.com/machine-learning-trading-predict-stock-prices-regression/

[6] https://www.geeksforgeeks.org/regression-analysis-and-the-best-fitting-line-using-c/

[7] https://www.youtube.com/watch?v=hGZJtBUbnAk