# Stock Price Predictor

## PROJECT REPORT

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# BONAFIDE CERTIFICATE

Certified that this project report **"Stock Price Predictor"** is the bonafide work of "**Hardik Gaur, Ayush Mittal and Vikas Kumar Singh"** who carried out the project work under my supervision.

SIGNATURE

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# <u>ACKNOWLEDGEMENT</u>

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# ABSTRACT

Stock Price Predictor is a web-based application which can predict the stock price of a particular company based on its historical trends. It is developed using python. It uses Machine Learning to predict the Stock Price. Linear Regression has been used to accurately predict the stock price. It makes the use of many python libraries like sklear, Streamlit, pandas etc. User can simply select the name of the company for which he wants to know the stock price and the predictor will predict the price of him/her.

# ABBREVIATIONS

1. ML                       Machine Learning
2. VS                       Visual Studio Code
3. LR                       Linear Regression
4. SP                       Stock Price

# CHAPTER 1

## INTRODUCTION

# What is stock Price?

The term "stock price" refers to the current market value of a share of stock in a publicly traded company. When a company goes public and issues stocks, these stocks are bought and sold on various stock exchanges. The price of a stock is determined by the supply and demand dynamics in the market.

Several factors can influence stock prices, including the company's financial performance, economic conditions, industry trends, and investor sentiment. Stock prices can fluctuate throughout the trading day as buyers and sellers engage in transactions.

Investors often track stock prices to assess the performance of their investments and make informed decisions about buying or selling stocks. It's important to note that stock prices are subject to change and can be volatile based on various factors affecting the financial markets.

## Organization of the Report

Chapter 1 Gives the introduction to the Stock Price.

Chapter 2 Gives the goals and objectives of the project.

Chapter 3 gives details about the model and design of the project. Various constraints are also discussed here. It gives the structure of the website. It provides all the details about each section provided in the website.

Chapter 4 talks about how the design is implemented using various technologies.

Chapter 5 concludes the project and gives the future scope.

# CHAPTER 2

## GOALS AND OBJECTIVES

### Goals and Objectives

To create a user-friendly and efficient application for predicting stock price of a given company.

To arrange the datasets of such companies for prediction.

To deploy a correct ML model for the prediction

To enhance transparency and accountability in grievance resolution.

# CHAPTER 3

# DESIGN FLOW

## Hardware & Software Requirements

- Python
- VS CODE
- Version Control and Hosting: GitHub
- Minimum 4GB RAM
- Windows Operating System

## Project Design

The website has various sections such as: -

1. Select Box
2. Stock Price Description
3. Predicted Stock Price

The roles of the sections are as follows:

Select Box:



**Fig. 3.1 Select Box**

**Select Box:** Here the user can select a company for which he wants to know the stock price. UI is very clean and is made with Streamlit library of python.

The design and layout of a home page may vary depending on the publisher's preferences and the journal's audience, but most home pages prioritize ease of use, readability, and accessibility. This may involve organizing content into sections or tabs, using clear headings and labels, and providing search functions and navigation menus to help users find what they're looking for quickly.
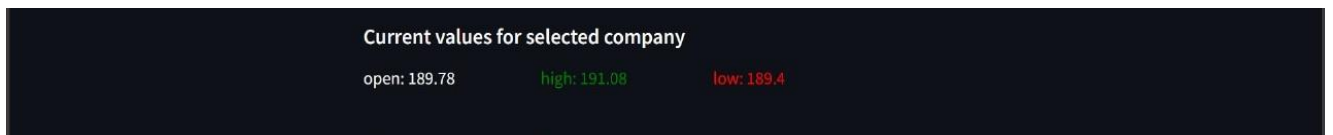
Price Description:



**Fig. 3.2 Select Box**

It shows the open, high and low strategy of the company.
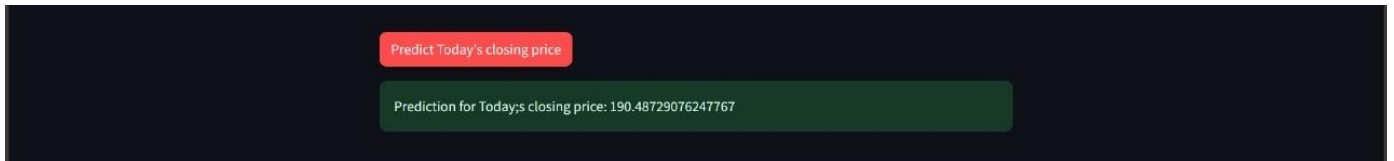
Predicted Price:



**Fig. 3.2 Predicted Price**

It displays the predicted price of the selected company. The Price is predicted using linear regression. It makes the use of AlphaAdvantange API to provide the historical stock price dataset of companies

# CHAPTER 4

# IMPLEMENTATION AND VALIDATION

## 4.1 Implementation

### Frontend

Front end development refers to the part of web development that deals with the user interface and user experience of a website or application. It involves the use of various programming languages, frameworks, and tools to create visually appealing and interactive interfaces that allow users to interact with the website or application.

In addition to technical skills, front end developers must also have a good understanding of user experience (UX) design principles and be able to create interfaces that are intuitive and easy to use. They must also be familiar with web standards and accessibility guidelines to ensure that their interfaces are accessible to all users.

Overall, front end development is a critical component of web development, as it directly affects the way users interact with and perceive a website or application.

### Python

Python is a high-level, interpreted programming language renowned for its readability and versatility. Designed with a focus on code simplicity, Python utilizes indentation for defining code blocks, promoting readability and reducing maintenance complexity. It is dynamically typed, enabling developers to write code without explicit variable type declarations, and it supports object-oriented programming principles. Python's interactive and interpreted nature facilitates quick development and debugging. Its extensive standard library provides modules for diverse tasks, and the language is well-supported by a thriving community. With a cross-platform nature, Python is suitable for applications ranging from small scripts to large-scale projects. Open source and backed by a rich ecosystem of libraries and frameworks, Python has become a cornerstone in areas such as web development, data science, and artificial intelligence.

**Machine Learning**

Machine Learning (ML) is a subfield of artificial intelligence (AI) that focuses on the development of algorithms and statistical models that enable computer systems to learn and make predictions or decisions without explicit programming. The core idea behind machine learning is to give computers the ability to learn from data and improve their performance over time. Instead of being explicitly programmed to perform a task, a machine learning system uses algorithms that can analyze and interpret data, identify patterns, and make informed decisions.

**Linear Regression**

Linear regression is a statistical method used to model the relationship between a dependent variable and one or more independent variables by fitting a linear equation to the observed data. The goal is to find the best-fitting line (or hyperplane in the case of multiple independent variables) that minimizes the difference between the predicted values and the actual values in the training dataset. In simple linear regression, there is one independent variable, while multiple linear regression involves multiple independent variables. The equation for simple linear regression is $y=mx+b$, where $y$ is the dependent variable, $x$ is the independent variable, $m$ is the slope of the line, and $b$ is the y-intercept. In multiple linear regression, the equation extends to include multiple independent ariables and their respective coefficients.

# CHAPTER 5

# CONCLUSION AND FUTURE WORK

## Conclusion:

The Stock Price Predictor can accurately predict the stock price of the company by using the dataset of any company.

## Future work:

In Future work we can also implement visuals like graphs, charts etc , which comes under the part of deep-learning.

# REFERENCES

1. **Documentations :** Python , Streamlit, Linear Regression

2. **Websites:**
   a. W3Schools
   b. GeeksForGeeks
   c. Javatpoint
   d. AlphaAdvantage

3. **Faculty:** Mr. Anik AcharJee  (Technical Trainer in GLA

University)

4. **GitHub Repository link:**

https://github.com/ayushmittal0212/mini_project_sem5