

## Project Report

# ***Stock Prediction Web Application Using Python***

### **Objective:**

The objective of this project is to develop a user-friendly web application that enables users to forecast stock prices using cutting-edge algorithms and data visualization techniques.

### **Scope:**

The project covers the development of a web application that utilizes Facebook Prophet, an open-source algorithm for time series forecasting, to predict stock prices. The application is built using Python, Streamlit, and Plotly for data processing, user interface, and data visualization, respectively.

### **Methodology:**

The project was conducted using the following steps:

- 1. Data Collection:** Historical stock price data was collected from various sources, including Yahoo Finance
- 2. Data Preprocessing:** The collected data was preprocessed to remove outliers and ensure data integrity.
- 3. Model Training:** Facebook Prophet was trained on the preprocessed data to build forecasting models for individual stocks.

**4. Web Application Development:** The web application was developed using Streamlit, an open-source app framework for Python. The application provides a user-friendly interface for inputting stock symbols, adjusting forecasting parameters, and visualizing the predicted stock prices.

**5. Data Visualization:** Plotly was used to create interactive and publication-quality graphs that dynamically update as users adjust parameters or filter datasets.

## Results:

The developed web application successfully forecasts stock prices using Facebook Prophet. Users can input stock symbols, adjust forecasting parameters, and instantly view predicted trends and potential future prices. The application provides an intuitive and interactive user interface, making it accessible to both novice investors and experienced financial analysts.

## Conclusion:

The Stock Prediction Web Application is a powerful tool that combines the predictive power of Facebook Prophet with the interactive capabilities of Streamlit and the sophisticated visualization tools of Plotly. It enhances accessibility and insight into the complex world of stock market investments, aiding users in making better investment decisions.

## Recommendations:

To further enhance the application, the following improvements can be considered:

**1. Expanding Data Sources:** Incorporating additional data sources and alternative forecasting algorithms can further enhance the accuracy and reliability of the predictions.

**2. Advanced Visualization Techniques:** Exploring more advanced data visualization techniques can provide deeper insights into stock market trends and patterns.

**3. User Feedback and Refinement:** Continuously gathering user feedback and iteratively refining the application based on user needs can improve the overall user experience and effectiveness of the tool.