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BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT



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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

A Project Report

On

“STOCK FORECASTER”

Submitted By

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that the project work entitled "**STOCK FORECASTER**" has been successfully presented by **M SAI REVANTH** bearing USN **3BR18CS082** student of VIII semester B.E. for the partial fulfillment of the requirements for the award of Bachelor Degree in Computer Science & Engineering of the VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI during the academic year 2021-2022. It is certified that all corrections and suggestions indicated for internal assessment have been incorporated in the report deposited in the library. The project has been approved as it satisfies the academic requirements in respect of project work prescribed for Bachelor of Engineering Degree.

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The satisfactions that accompany the successful completion of our final year project phase-2 on "**STOCK FORECASTER**" would be incomplete without the mention of people who supported to make it possible, whose noble gesture, affection, guidance, encouragement and support crowned our efforts with success. It is our privilege to express our gratitude and respect to all those who inspired us in the completion of our final year project phase-2.

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ABSTRACT

In stock market prediction, the aim is to predict the future value of the financial stocks of a company. The recent trend in stock market prediction technologies uses Machine Learning which makes predictions based on the values of current stock market indices by training on their previous values. Machine learning itself employs different models to make prediction easier and more authentic. The paper focuses on the use of ARIMA, LSTM, LINEAR REGRESSION, and TWITTER SENTIMENT ANALYSIS-based Machine learning algorithms to predict stock values. Factors considered are open, close, low, high, and volume. Data is accessed from Yahoo Finance until the current date to achieve greater results. The successful prediction of the stock market will have a very positive impact on the stock market institutions and the investors also.

To view the results, we have provided a user interface for investors to know the predictions of all listed companies in yahoo finance by using company tickers by that we can predict stock prices along with RMSE(Root Mean Square Error) that users can view recent trends in stock market time-series trends along with that Machine Learning models accuracy time-series graphs. Company tickers have been listed in the dashboard in our web application itself. Users can access this interface by using their login credentials.

TABLE OF CONTENTS

Chapter No	Chapter Name	Page No
	Abstract	I
	Table of Contents	II
1	Introduction	1
1.1	Vision	2
1.2	Mission	2
1.3	Objectives	2
2	Literature Survey	3
3	Problem Statement	9
4	Scope of the Project	10
5	Requirements	
5.1	Software and Hardware Requirements	11
5.2	Functional requirements and Non-Functional requirements	12
6	Design	
6.1	Architecture Diagram	13
6.2	Use Case Diagram	14
6.3	Block Diagram	14
6.4	Sequence Diagram	14
6.5	Flow Chart	15
7	Implementation	
7.1	Programming language selection	16
7.2	Selection of platform	16
7.3	Description of Modules	16

8	Testing	
8.1	Testing Process	17
8.2	Testing Objective	17
8.3	Levels of Testing	17
8.3.1	Unit Testing	18
8.3.2	Integration Testing	18
8.3.3	System Testing	19
9	Results	20
10	Conclusion	23
11	References	24
12	Annexure	26

List of Figures

Sl No	Figure Name	Page No
1	Fig6.1 System Architecture	13
2	Fig6.2 Use case diagram	13
3	Fig6.3 Block diagram	14
4	Fig6.4 Sequence Diagram	14
5	Fig6.5 Flowchart	15
6	Fig9.1 Login Page	19
7	Fig 9.2 Home page	20
8	Fig 9.3 Our services	21
9	Fig9.4 Dash board	21
10	Fig9.5 Prediction Graph	21
11	Fig9.6 Model Prediction	22
12	Fig9.7 Day Prediction	22
13	Fig9.8 Contact form	22

CHAPTER 1

INTRODUCTION

The stock market consists of various buyers and sellers of the stock. Stock market prediction means determining the future scope of the market. Frequently, it is brought out that prediction is chaotic rather than random, which means it can be predicted by carefully analyzing the history of the respective stock market. Apart from the history of the respective stock market external factors also affect the stock market for that we are using Twitter sentiment analysis by Machine Learning. Machine learning is an efficient way to represent such processes. It predicts a market value close to the tangible value, thereby increasing the accuracy. The introduction of machine learning to the area of stock prediction has appealed to many researchers because of its efficient and accurate measurements. The vital part of machine learning is the dataset used. The dataset should be as concrete as possible because a little change in the data can perpetuate massive changes in the outcome. In this project, datasets were obtained from Yahoo Finance.

This dataset includes the following five variables: open, close, low, high, and volume. Open, close, low, and high are different bid prices for the stock at separate dates with nearly direct names. The volume is the number of shares that passed from one owner to another during the period. The model is then tested on the test data. ARIMA, LSTM, LINEAR REGRESSION, and TWITTER SENTIMENT ANALYSIS models are engaged for this prediction which is the current latest model used for prediction. Algorithms such as LSTM-GRU and LSTM-ARIMA are very efficient but those algorithms lag to give accurate predictions when they are trained only once. Hence if these algorithms undergo continuous training, they might end up giving very efficient results. So, LSTM [15] model outperforms all the other algorithms which are already implemented by continuous training of the data by running the algorithm by schedule to the LSTM model along with this we are adding two more ML models that are ARIMA and LINEAR REGRESSION. These two also can give us greater results.

TWITTER SENTIMENT ANALYSIS is a Machine Learning method to analyze the tweets regarding any company which is provided as an input by the user. By tweets we are analyzing that tweet whether the tweet is positive, negative, or neutral by using Natural Language Processing with the use of NLTP libraries and representing that in the UI

Stock Forecaster

The results will be displayed on the interface provided which can be accessed using login credentials. The prediction of the company's stock prices along with RMSE will be displayed by taking the company's ticker from the user. Users can view market time-series trends, and Machine Learning model accuracy time-series graphs with that user can view all the tweets positive or negative regarding that company which is provided by the user.

1.1 Vision: To develop real time website to predict the stock price for a specific company stock using Specific tools with best possible accuracy.

1.2 Mission: To design a website for stock price prediction by using ML & Deep Learning algorithms with the help of website hosting providers.

1.3 Objectives:

- To implement ARIMA, LSTM, LINEAR REGRESSION model by providing continuous training of the data to achieve efficient results.
- To implement TWITTER SENTIMENT ANALYSIS using NLP(Natural Language Processing) by taking tweets from twitter to achieve efficient results.
- Develop an interface in which company ticker is taken by user to predict the following day closing price of that company.
- Design the interface to plot the actual prices with predicted prices by certain ML models.
- Design the interface which shows the previous data of stock price in time series plot format.

CHAPTER 2

LITERATURE SURVEY

[1]A moving-average filter-based hybrid ARIMA-ANN model for forecasting time series data, C. Narendra Babu and B. Eswara Reddy.

A suitable combination of linear and nonlinear models provides a lot of correct prediction model than a individual linear or nonlinear model for foretelling statistic knowledge originating from numerous applications. The linear autoregressive integrated moving average (ARIMA) and nonlinear artificial neural network (ANN) models s explored during this paper to plan a brand-new hybrid ARIMA-ANN model for the prediction of your time series knowledge.

[2]A Naïve SVM-KNN based stock market trend reversal analysis for Indian benchmark indices, RudraKalyanNayak, Debahuti Mishra, Amiya Kumar Rath.

This paper proposes a hybridized framework of Support Vector Machine (SVM) with K-Nearest Neighbor approach for Indian stock market indices prediction. The objective of this paper is to get in-depth knowledge in the stock market in Indian Scenario with the two indices such as, Bombay Stock Exchange (BSE Sensex) and CNX Nifty using technical analysis methods and tools such as predicting closing price, volatility and momentum of the stock market for the available data. This hybrid model uses SVM with different kernel functions to predict profit or loss, and the output of SVM helps to compute best nearest neighbor from the training set to predict future of stock value in the horizon of 1 day, 1 week and 1 month. The proposed SVM and KNN based prediction model is experienced with the above-mentioned distinguished stock market indices.

[3] Dynamic Business Network Analysis for Correlated Stock Price Movement Prediction, Wenping Zhang, Chunping Li, Yunming Ye, Wenjie Li and Eric W.T. Ngai.

This paper discusses about a novel business network-based model can help predict directional stock price movements by considering both influential business relationships and Twitter sentiment.

[4] Stock Market Prediction Using Hybrid Approach, Vivek Rajput, Sarika Bobde.

The objective of this paper is to construct a model to predict stock value movement using the opinion mining and clustering method to predict National Stock Exchange (NSE). It used domain specific approach to predict the stocks from each domain and taken some stock with maximum capitalization. Topics and related opinion of shareholders are automatically extracted from the writings in a message board by utilizing our proposed strategy alongside isolating clusters of comparable sort of stocks from others using clustering algorithms. Proposed methodology will give two output set i.e. one from sentiment analysis and another from clustering based prediction with respect to some specialized parameters of stock exchange. By examining both the results an efficient prediction is produced. In this paper stocks with maximum capitalization within all the important sectors are taken into consideration for empirical analysis.

[5] A Hybrid Fuzzy Time Series Model Based on ANFIS and Integrated Nonlinear Feature Selection Method for Forecasting Stock, Chung-Ho Su, Ching-Hsue Cheng.

Forecasting stock price is a hot issue for stock investors, dealers and brokers. However, it's difficult to find out the best time point to buy or to sell stock, due to many variables will affect the stock market, and stock dataset is time series data. Therefore, many time series models have been proposed for forecasting stock price, furthermore the previous time series methods still have some problems. Hence, this paper proposes a novel ANFIS (Adaptive Neuro Fuzzy Inference System) time series model based on integrated nonlinear feature selection (INFS) method for stock forecasting.

[6] Hybrid nonlinear adaptive scheme for stock market prediction using feedback FLANN and factor analysis, C.M. Anish, BabitaMajhi.

Accurate and effective stock price prediction is very important for potential investors in deciding investment strategy. Data mining techniques have been applied to stock market prediction in recent literature. Factor analysis (FA), a powerful statistical attributes reduction technique, is chosen to select the inputs of the model from the raw data. A feedback type of the functional link artificial neural network (FFLANN) with recursive least square (RLS) training is proposed as a potential prediction model.

[7] Artificial Neural Networks architectures for stock price prediction: comparisons and applications, L. Di Persio and O. Honchar.

Artificial Neural Network (ANN) approach to predict stock market indices, particularly with respect to the forecast of their trend movements up or down. Exploiting different Neural Networks architectures, this paper provides numerical analysis of concrete financial time series. In particular, after a brief resume of the existing literature on the subject, it considers the Multi-layer Perceptron (MLP), the Convolutional Neural Networks (CNN), and the Long Short-Term Memory (LSTM) recurrent neural networks technique.

[8] Optimizing Stock Market Price Prediction using a Hybrid Approach Based on HP Filter and Support Vector Regression, Ouahilal, Mohammed El Mohajir, Mohamed Chahhou, BadrEddine El Mohajir.

Predicting stock prices is an important task of financial time series forecasting, which is of great interest to stock investors, stock traders and applied researchers. Many machine learning techniques have been used in recent times to predict the stock price, including regression algorithms which can be useful tools to provide good accuracy of financial time series forecasting. In this paper, a novel hybrid approach which combines Support Vector Regression and HodrickPrescott filter in order to optimize the prediction of stock price has been proposed.

[9] Hybrid ARIMA-BPNN Model for Time Series Prediction of the Chinese Stock Market, Li Xiong, Yue Lu.

Stock price prediction is a challenging task owing to the complexity patterns behind time series. Autoregressive integrated moving average (ARIMA) model and back propagation neural network (BPNN) model are popular linear and nonlinear models for time series forecasting respectively. The integration of two models can effectively capture the linear and nonlinear patterns hidden in a time series and improve forecast accuracy. In this paper, a new hybrid ARIMA-BPNN model containing technical indicators is proposed to forecast four individual stocks consisting of both main board market and growth enterprise market in software and information services sector.

[10] Short term stock price prediction using deep learning, Khare, Kaustubh.

Short - term price movements, contribute a substantial live to the unpredictability of the securities exchanges. Accurately predicting the price fluctuations available market may be a huge economical advantage. The aforesaid task is mostly achieved by analyzing the corporate, this can be known as fundamental analysis. Another technique, that is undergoing tons of analysis work recently, is to form a predictive algorithmic model using machine learning.

[11] Classification-based Financial Markets Prediction using Deep Neural Networks, Matthew Dixon, Diego Klabjan, JinHoon Bang.

Deep neural networks (DNNs) are powerful types of artificial neural networks (ANNs) that use several hidden layers. They have recently gained considerable attention in the speech transcription and image recognition community for their superior predictive properties including robustness to overfitting. However, their application to algorithmic trading has not been previously researched, partly because of their computational complexity. This paper describes the application of DNNs to predicting financial market movement directions. In particular, we describe the configuration and training approach and then demonstrate their application to back testing a simple trading strategy over 43 different Commodity and FX future mid-prices at 5-minute intervals. All results in this paper are generated using a C++ implementation on the Intel Xeon Phi co-processor which is 11.4x faster than the serial version and a Python strategy back testing environment both of which are available as open-source code written by the authors.

[12] Deep Learning for Stock Market Prediction Using Technical Indicators and Financial News Articles, Manuel R. Vargas, Carlos E. M. dos Anjos, Gustavo L G. Bichara, Alexandre G. Evsukoff.

This work uses deep learning models for daily directional movement's prediction of a stock price using financial news titles and technical indicators as input. Accumulation/Distribution (A/D) oscillator and Disparity set Exponential Moving Average, Moving Average Convergence-Divergence, Relative Strength Index, On Balance Volume and Bollinger Bands.

Deep learning methods can detect and analyze complex patterns and interactions in the data allowing a more precise trading process. Experiments has shown that Convolutional Neural Network (CNN) can be better than Recurrent Neural Networks (RNN) on catching semantic from texts and RNN is better on catching the context information and modeling complex temporal characteristics for stock market forecasting. So, there are two models compared in this paper: a hybrid model composed by a CNN for the financial news and a Long Short-Term Memory (LSTM) for technical indicators, named as SIRCNN and a LSTM network only for technical indicators, named as IRNN. The output of each model is used as input for a trading agent that buys stocks on the current day and sells the next day when the model predicts that the price is going up, otherwise the agent sells stocks on the current day and buys the next day. The proposed method shows a major role of financial news in stabilizing the results and almost no improvement when comparing different sets of technical indicators.

[13] Financial Indices Modelling and Trading utilizing deep learning techniques, Marios Mourelatos, Thomas Amorgianiotis, Christos Alexakos, Spiridon Likothanassis.

Prediction and modelling of the financial indices is a very challenging and demanding problem because it's dynamic, noisy and multivariate nature. Modern approaches have also to challenge the fact that they are dependencies between different global financial indices. All this complexity in combination with the large volume of historic financial data raised the need for advanced machine learning solutions to the problem. This article proposes a Deep Learning approach utilizing Long Short-Term Memory (LSTM) Networks for the modelling and trading of financial indices.

[14] Hybrid Deep Learning Models for Stock Prediction, Mohammad Asiful Hossain, Rezaul Karim, Ruppa Thulasiram, Neil D. B. Bruce, Yang Wang.

Stock market prediction has always caught the attention of many analysts and researchers. Popular theories suggest that stock markets are essentially a random walk and it is a fool's game to try and predict them. Predicting stock prices is a challenging problem in itself because of the number of variables which are involved. This paper reviews all these points.

[15] Applied attention-based LSTM neural networks in stock prediction, Cheng, Li-Chen, Yu-Hsiang Huang, and Mu En Wu.

Prediction of stocks is complex due to dynamic, complex, and chaotic environment of the stock market. Several studies predict that stock value movements are using deep learning models. Though the main mechanism has gained quality recently in neural computational translation, little focus has been dedicated to attention-based deep learning models for stock prediction.

CHAPTER 3

PROBLEM STATEMENT

Investments in shares include taking high risk and less profit we need tools to make predictions and help in gaining profit with low risk.

CHAPTER 4

SCOPE OF THE PROJECT

To design and develop an interface to predict stock prices of company's listed in Yahoo Finance by taking company ticker to predict the following day closing price, which help Day and Swing traders or RII investors (Retail Individual Investor).

CHAPTER 5

SOFTWARE AND HARDWARE REQUIREMENTS

5.1 HARDWARE REQUIREMENTS:

- RAM: 8GB
- Processor: 2.5 GHz, i5
- Hard disk drive: 500GB
- Input: Keyboard
- Monitor: LCD

5.2 SOFTWARE REQUIREMENTS:

- Operating System: Windows8
- Language: Python, HTML, CSS, JavaScript, Flask Framework
- Platform: Microsoft Azure
- Datasets: Yahoo Finance

FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS

5.3 FUNCTIONAL REQUIREMENTS:

- **Register user:** In this module new user will be able to register into the system, to register user need to provide Name, Email id. Email is verified by generating a link to the user entered mail, on click user mail will be authorized.
- **Log in:** The user logs into the application with their Email and password. If the user id and password entered is valid, user will be redirected to next process else error message will be displayed.
- **Forgot password:** Here user will be able to reset his/her password. User should enter his/her registered email and click on forgot password. By doing this user will get a reset link for a mail in which users can reset their password.
- **Prediction:** Here user can enter the ticker of a stock and get prediction of that particular stock.

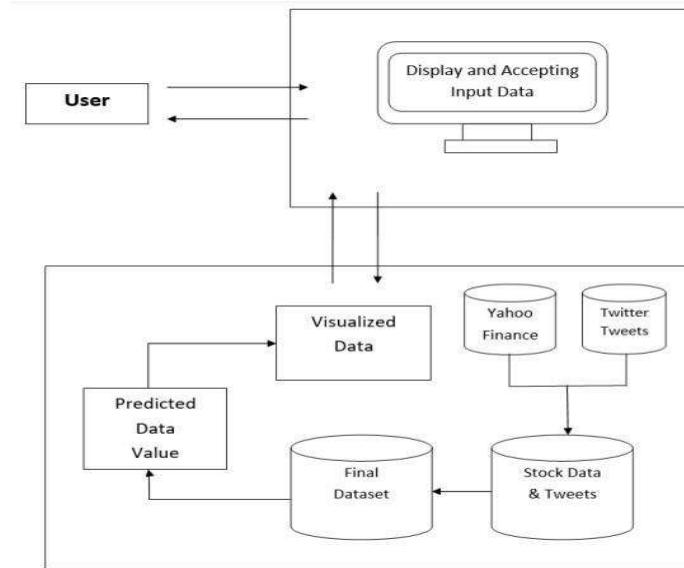
5.4 NONFUNCTIONAL REQUIREMENTS

- **Performance:** The web system performs according to the standards and the task is performed at the rate of few minutes depending on the host website server i.e., output for the given input is generated within few minutes according to network. So that performance is achieved.
- **Completeness:** Refer to features available that are listed in the requirements. The proposed web system implements all the features listed in the requirements.
- **Correctness:** Refer to the correct operations of the program. For tester it is with respect to requirements, for admin. Here system shall achieve correctness by performing each operation.
- **Availability:** This includes running a web application for a planned period of time, collecting failure events. Our system will work whenever it's required.

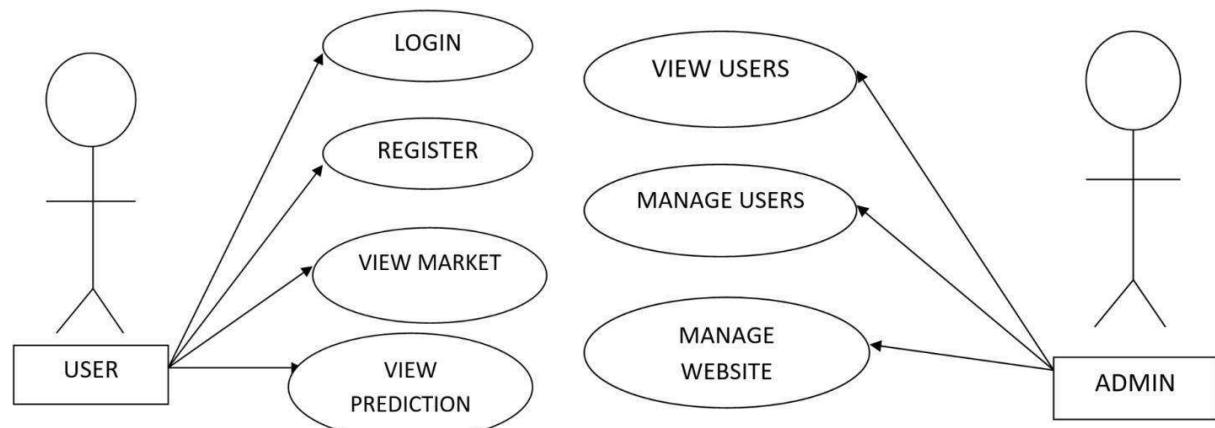
CHAPTER 6

DESIGN

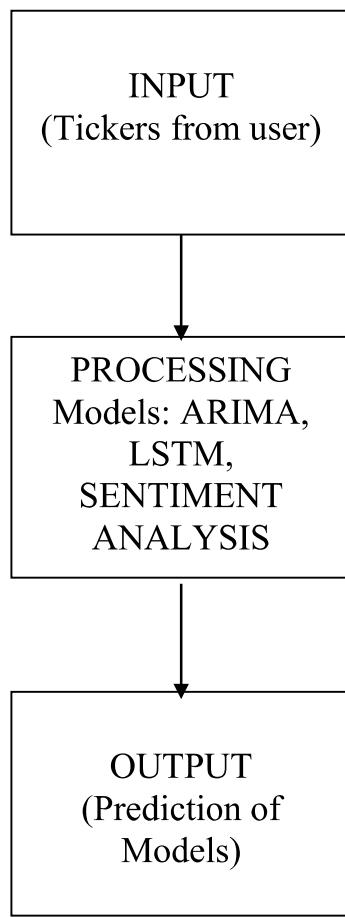
6.1 Architecture Diagram



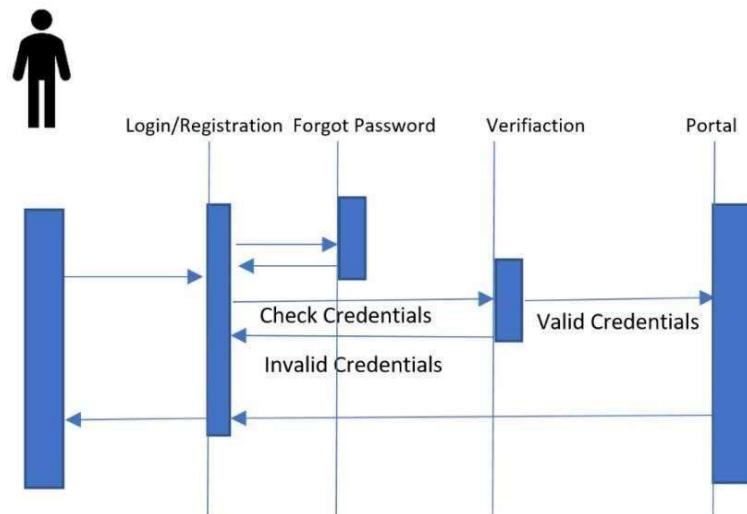
6.2 Use Case Diagram



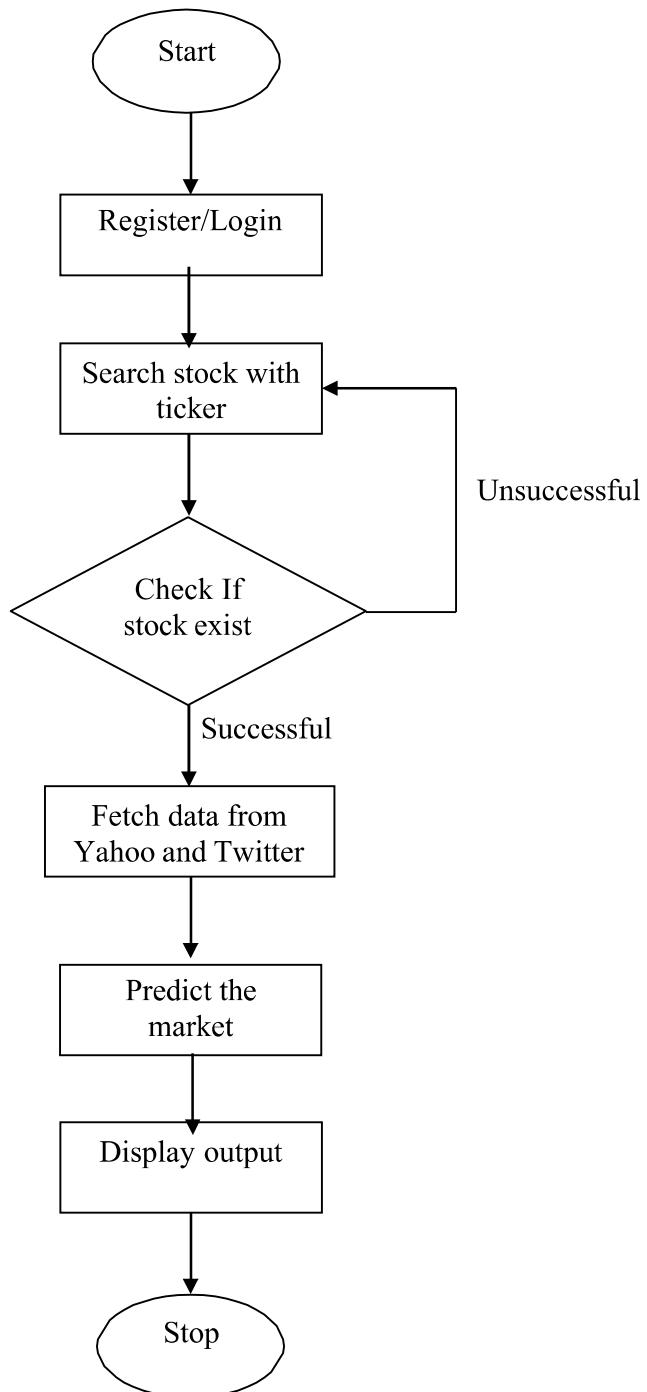
6.3 Block Diagram



6.4 Sequence Diagram



6.5 Flow Chart



CHAPTER 7

Implementation

7.1 Programming Language Selection

Python is much easier to blend it with other AI projects written in other languages. Also, since it is extensible and portable, Python can be used to perform cross languages tasks. The adaptability of Python makes it easy for data scientists and developers to train machine learning models.

7.2 Selection of Platform

The web platform is a platform which is suitable for all devices. Websites can be accessed by anyone from any part of the world all they would need is internet connection.

Websites reach to public more easily when compared to any other platform because people will just need a browser to access website.

7.3 Description of Modules

Register Module: Create a new account to access the web application.

Login Module: User can login with login credentials.

View Market/Predictions Module: User can view live stock prices and can make their analysis based on the trend to invest. User can predict prices of any stock by providing stock's ticker and view the predictions in the form of graph chart.

CHAPTER 8

Testing

8.1 Testing Process

Testing is an integral part of software development. Testing process, in a way certifies, whether the product, that is developed, compiles with the standards, that it was designed to. Testing process involves building of test cases, against which, the product has to be tested. In some cases, test cases are done based on the system requirements specified for the product/software, which is to be developed.

8.2 Testing Objectives

The main objectives of testing process are as follows:

- Testing is a process of executing a program with the intent of finding an error.
- A good test case is one that has high probability of finding an as yet undiscovered error.
- A successful test is one that uncovers an as yet undiscovered error

8.3 Levels of Testing

Different levels of testing are used in the testing process; each level of testing aims to test different aspects of the system. The basic levels are unit testing, integration testing, system testing and acceptance testing.

8.3.1 UNIT TESTING

Unit testing focuses verification effort on the smallest unit of software design the module. The software built, is a collection of individual modules. In this kind of testing exact flow of control for each module was verified. With detailed design consideration used as a guide, important control paths are tested to uncover errors within the boundary of the module.

Module	Input	Expected Output	Actual Output
Email Id Verification	Email Id	To generate link and validate account.	Generates the link and validates the account
Forgot Password	Registered Email Id	To generate and send a reset password link to the entered email.	Generates the password reset link to the entered mail.
Search Stock	Stock ticker	Should fetch details related to stock if the entered ticker is valid.	Fetches details related to stock if the entered ticker is valid
Predict Stock	Stock ticker	To generate graph and predict future.	Generates graph and predicts future.

6.3.2 INTEGRATION TESTING

The second level of testing is called integration testing. In this, many class-tested modules are combined into subsystems, which are then tested. The goal here is to see if all the modules can be integrated properly. We have been identified and debugged.

Module	Input	Expected Output	Actual Output
Registration	Email Id Username	Register user if given details are valid.	User registered successfully.
Login	Email Id Password	Login into the system if credentials are valid or error message if credentials are invalid.	Successfully login into the system if credentials are valid else error messages are shown.

8.3.3 System Testing

Here the entire application is tested. The reference document for this process is the requirement document, and the goal is to see IF the application meets its requirements. Each module and component of ethereal was thoroughly tested to remove bugs through a system testing strategy. Test cases were generated for all possible input sequences and the output was verified for its correctness.

Steps	Action	Expected Output
Register	Provide valid details and register	Register the user successfully if valid details are provided.
Login	Enter valid credentials and login into the system for further steps	If entered credentials are valid user logs in into the system.
Search Stock	Collects details related to stock if the entered ticker is valid.	Should collect details of stock if the entered ticker is valid.
Predict Stock	Displays graph and predicts future.	To display graph and predict future.

RESULTS

The results of this project are as expected and have met all the requirements specified. Users are able to register themselves into the website. They are also able to access the site only after verifying email and using login credentials which were given by them. They are able to view graphical predictions made on stocks by simply providing the thicker of the particular stock.

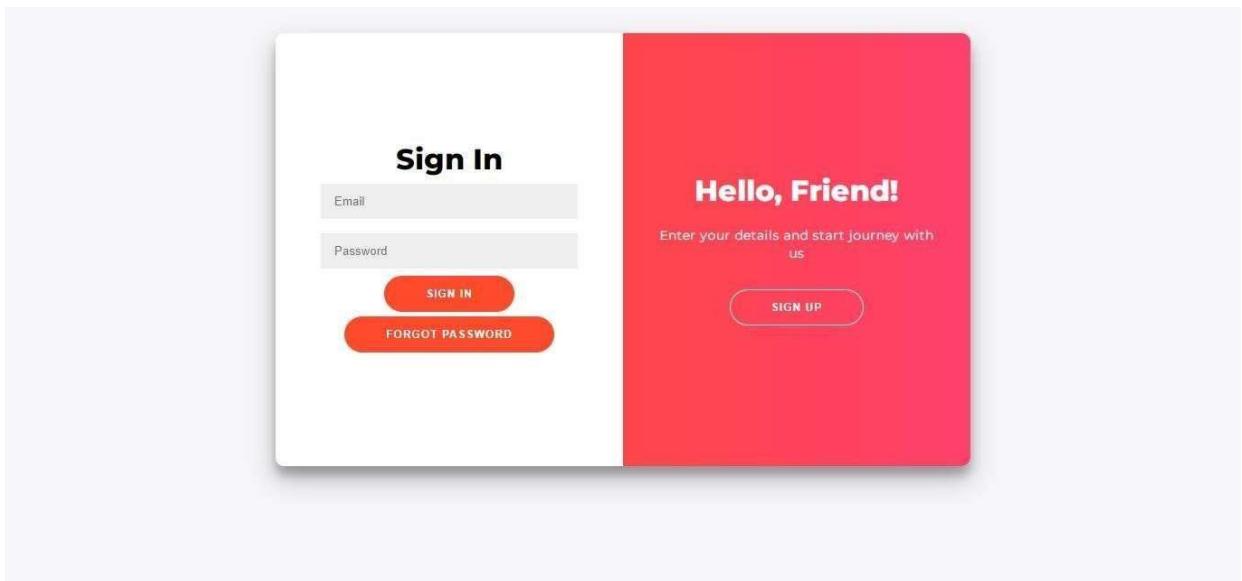


Fig 9.1: Login Page

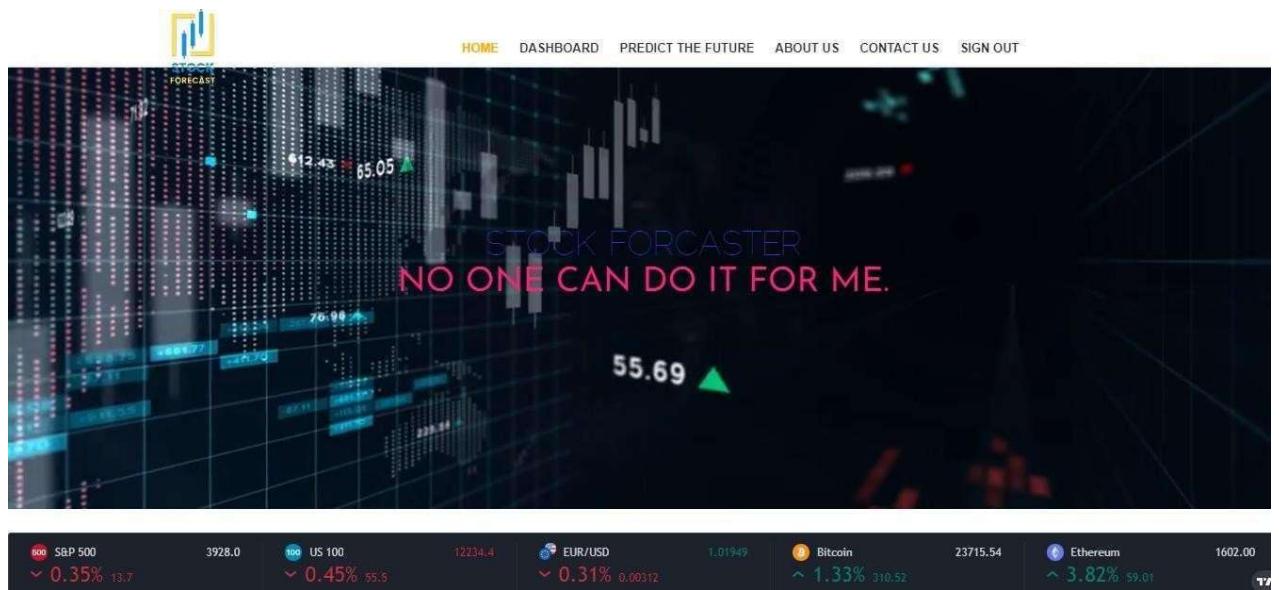


Fig 9.2: Home Page

Stock Forecaster



Fig 9.3: Our Services

Ticker	Name	Exchange	Category Name	Country
BHARTIARTL.NS	Bharti Airtel Limited	NSI	Wireless Communications	India
ASHOKLEY.NS	Ashok Leyland Limited	NSI	Auto Manufacturers - Major	India
AUROPHARMA.NS	Aurobindo Pharma Limited	NSI	Drugs - Generic	India
AREXMIS.BO	Arex Industries Ltd.	BSE	nan	India
SANWARIA.NS	Sanwaria Agro Oils Limited	NSI	Farm Products	India
ALMONDZ.NS	Almondz Global Securities Limited	NSI	Investment Brokerage - National	India

Fig 9.4: Dashboard Page

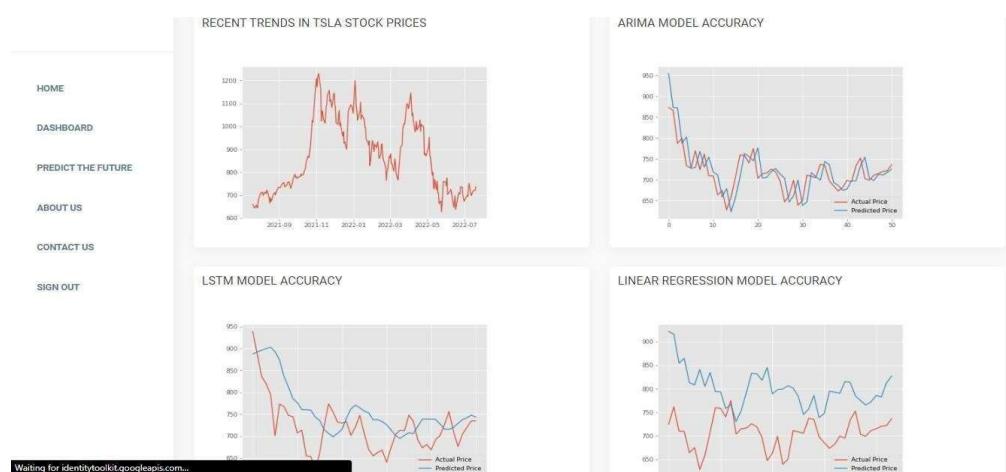


Fig 9.5: Prediction Graph

Stock Forecaster

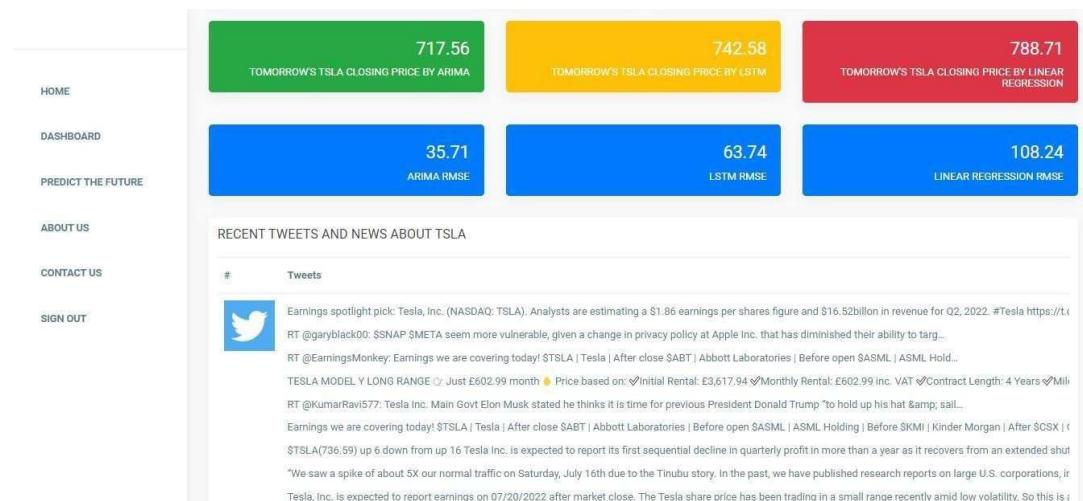


Fig 9.6: Model Predictions

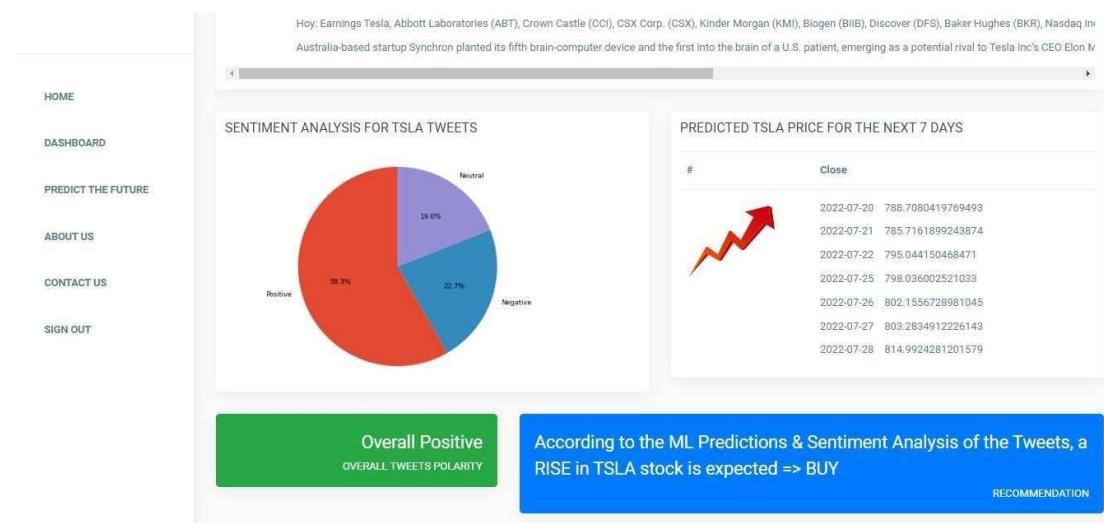


Fig 9.7: Days Prediction

The contact form is titled "CONTACT FORM #01". It has two main sections:

- GET IN TOUCH:** Contains fields for Name, Email, Subject, and Message, along with a "Send Message" button.
- CONTACT US:** Contains address, phone number, email, and website information.

Fig 9.8: Contact Form

CHAPTER 10

CONCLUSION

Predicting the stock market was a time-consuming and laborious procedure a few years or even a decade ago. However, with the application of machine learning for stock market forecasts, the procedure has become much simpler. Machine learning not only saves time and resources but also outperforms people in terms of performance. It is always preferred to use a trained computer algorithm since it will advise you based only on facts, numbers, and data and will not factor in emotions or prejudice.

CHAPTER 11

REFERENCES

- [1] C. Narendra Babu and B. Eswara Reddy (2014). "A moving-average filter-based hybrid ARIMA-ANN model for forecasting time series data". Applied Soft Computing, vol. 23, pp. 27-38.
- [2] RudraKalyanNayak, Debahuti Mishra, and Amiya Kumar Rath, "A Naïve SVM-KNN based stock market trend reversal analysis for Indian benchmark indices," Applied Soft Computing, vol. 35, pp. 670-680, October 2015.
- [3] Wenping Zhang, Chunping Li, Yunming Ye, Wenjie Li and Eric W.T. Ngai, "Dynamic Business Network Analysis for Correlated Stock Price Movement Prediction", IEEE Intelligent Systems Volume: 30, Issue: 2, Mar.-Apr. 2015.
- [4] Vivek Rajput, SarikaBobde. "Stock Market Prediction Using Hybrid Approach". International Conference on Computing, Communication and Automation (ICCCA2016).
- [5] Chung-HoSu and Ching-HsueCheng, "A hybrid fuzzy time series model based on ANFIS and integrated nonlinear feature selection method for forecasting stock," Neurocompting, vol. 205, pp. 264-273, September 2016.
- [6] C. M. Anish and BabitaMajhi, "Hybrid nonlinear adaptive scheme for stock market prediction using feedback FLANN and factor analysis," Journal of the Korean Statistical Society, vol. 45, pp.64-76, March 2016.
- [7] L. Di Persio and O. Honchar, "Artificial neural networks architectures for stock price prediction: Comparisons and applications," International Journal of Circuits, Systems and Signal Processing, vol. 10, pp. 403–413, 2016.

- [8] Ouahilal, Mohammed El Mohajir, MohamedChahhou,BadrEddine El Mohajir, B. E. "Optimizing stock market price prediction using a hybrid approach based on HP filter and support vector regression". 2016 4th IEEE International Colloquium on Information Science and Technology (CiSt).
- [9] Li Xiong, Yue Lu (2017). "Hybrid ARIMA-BPNN Model for Time Series Prediction of the Chinese Stock Market". 2017 3rd International Conference on Information Management.
- [10] Khare, Kaustubh, et al. "Short term stock price prediction using deep learning." 2017 2nd IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology (RTEICT). IEEE, 2017.
- [11] Matthew Dixon, Diego Klabjan, and JinHoonBang, "Classification-Based Financial Markets Prediction Using Deep Neural Networks,", June 2017.
- [12] Manuel R. Vargas,Carlos E.M. dos Anjos,Gustavo L.G. Bichara,Alexandre G. Evsukoff (2018). "Deep Learning for Stock Market Prediction Using Technical Indicators and Financial News Articles". 2018 International Joint Conference on Neural Networks (IJCNN).
- [13] Marios Mourelatos, Thomas Amorgianiotis, Christos Alexakos, Spiridon Likothanassis (2018). "Financial Indices Modelling and Trading Utilizing Deep Learning Techniques". 2018 Innovations in Intelligent Systems and Applications (INISTA).
- [14] Mohammed Asiful, Hossain, Rezaul Karim, Ruppa THulasiram, Neil D.B Bruce, Yang Wang (2018). "Hybrid Deep Learning Model for Stock Price Prediction". 2018 IEEE Symposium Series on Computational Intelligence (SSCI).
- [15] Cheng, Li-Chen, Yu-Hsiang Huang, and Mu-En Wu. "Applied attention-based LSTM neural networks in stock prediction." 2018 IEEE International Conference on Big Data (Big Data). IEEE, 2018.

ANNEXURE A

PUBLICATION PAPER IN IRJMETS



STOCK FORECASTER

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ABSTRACT

In stock market prediction, the aim is to predict the future value of the financial stocks of a company. The paper focuses on the use of ARIMA, LSTM, LINEAR REGRESSION, and TWITTER SENTIMENT ANALYSIS-based Machine learning algorithms to predict stock values. Factors considered are open, close, low, high, and volume. Data is accessed from Yahoo Finance until the current date to achieve greater results.

Keywords: Stocks, Predicting values, Sentiment Analysis, ARIMA, LSTM, Linear Regression.

I. INTRODUCTION

The stock market consists of various buyers and sellers of the stock. Stock market prediction means determining the future scope of the market. Prices of stocks can be predicted by carefully analyzing the history of the respective stock market. Apart from the history of the respective stock market external factors also affect the stock market for that we are using Twitter sentiment analysis by Machine Learning. So, we can develop a real time website to predict the stock price with best possible accuracy for a specific company stock using tools which include ML algorithms and data set from Yahoo Finance.

II. METHODOLOGY

System Architecture

An architecture diagram is used to define the structure, behavior of a system. The below diagram represents both the structural and behavioral concepts of the system.

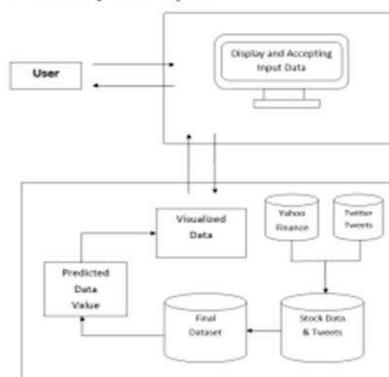


Figure 1: System Architecture

Predicted Data Values: They are generated by the models which are been specified.

Visualized data: It include the original prices with predicted prices plotted on the same graphs.

Use Case Diagram

This diagram represents the modules and the functionalities which are been given to the user and the admin.

PAPER PUBLICATION:

Mr. Srisailanath,M Sai Reventh, Tarun Madamanchi, M Likith Kumar , M Jeevankumar

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**BALLARI INSTITUTE OF TECHNOLOGY AND
MANAGEMENT, BALLARI DEPARTMENT OF COMPUTER
SCIENCE & ENGINEERING**



**Project CO-PO Mapping
ACADEMIC YEAR
2021-22**



U.S.N.	Student Name	Guide Name	Project Title
3BR18CS082	M SAI REVENTH	MR. SRISAILANATH (Asst Prof)	STOCK FORECASTER
3BR18CS084	TARUN MADAMANCHI		
3BR18CS089	M LIKITH KUMAR		
3BR18CS093	M JEEVANKUMAR		

COURSE OUTCOMES(CO'S)

Course Outcome sCOx	Description of Course Outcomes
CO1	Identify the problem in the present stock market prediction system.
CO2	Analyze the problem in the present stock market prediction system
CO3	Design the web application for predicting stocks.
CO4	Write technical Project report by following professional ethics.
CO5	Create and publish the outcome of the thesis into an article

CO-PO MAPPING

CO-PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	1			1									
CO2		3		1										
CO3		1	3		1									
CO4									3		1	1		
CO5								1	1	2		1		1

Signature of Guide
SRISAILANATH