

# FARMERS BRO – WEATHER PREDICTION AND FARMER SUPPORT SYSTEM

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**Abstract:** - Weather forecasting is a most important application in meteorology and has been one of the most scientifically and technologically challenging problems around the world for Farmers. A wide variety of rainfall forecast methods are available. There are mainly two approaches to predict rainfall. They are empirical method and dynamical method. This Application provides information such as humidity, minimum temperature, maximum temperature, wind speed and direction. The existing system uses decision tree algorithm which provides lesser accuracy in weather prediction. This application provides better accuracy in weather prediction and meet the real-time needs of farmers and contribute to weather-based crop/livestock management strategies by providing the scheduling details of preferred crops.

**Index Terms** – Farmers Bro, Management, Structure, Co-curricular Activities.

## I. INTRODUCTION

Weather forecasting is mainly concerned with the prediction of weather condition in the given future time. Weather forecasts provide critical information about future weather. There are various approaches available in weather forecasting, from relatively simple observation of the sky to highly complex computerized mathematical models. The prediction of weather condition is essential for various applications. Some of them are climate monitoring, drought detection, severe weather prediction, agriculture and production, planning in energy industry, aviation industry, communication, pollution dispersal, and so forth. The selection of variables is dependent on the location for which the prediction is to be made. The variables and their range always vary from place to place.

## II. RELATED WORKS

[1] "Rainfall prediction using Data Mining Techniques" by Jyothis Joseph, Ratheesh.T.K on International journal of Computer Applications, Dec, 2013, Vol-83.No-8.

The Empirical approach is based on analysis of historical data of rainfall and its relationship to a variety of atmospheric and oceanic variables over different parts of the world. The most widely used empirical approaches used for climate prediction are regression, artificial neural network, fuzzy logic and group method of data handling. This paper uses data mining techniques such as clustering and classification techniques for rainfall prediction

## III. PROBLEM IDENTIFICATION

Climate predictions of precipitation and temperature during various stages of the growing season can be especially helpful to farmers producing crops under irrigation. These predictions allow farmers to more efficiently plan the timing of water application and apply the amount of water needed to optimize crop yields.

Climate prediction is in its infancy. However, the payoff from the research and development of reliable climate prediction information can be substantial for the agricultural industry. This is especially important considering the increased frequency of the extreme weather events that we are experiencing and will experience in the Midwest in coming decades.

## IV. PROBLEM SOLUTION

Climate prediction of seasonal weather patterns help farmers decide which crops are most likely to flourish in the predicted growing season. This will impact their decisions of which crops to grow and how much of each crop to grow on their farms and whether to purchase crop insurance. This is especially relevant in regions of the country where farmers traditionally grow a variety of crops. In areas of the country where crop mix does not change, climate predictions help farmers decide on the relative proportions of each crop to grow.

## V. FLOW DIAGRAM

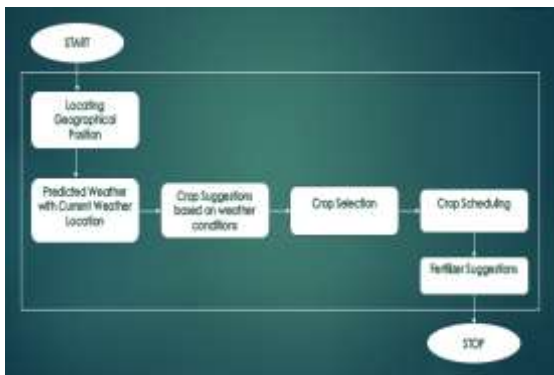


Figure 1.Flow Diagram

Diagram explains the flow of the app. The farmers can interact with the website efficiently with user friendly design. The only input from the farmer is their location that even gets fetched by GPS.

## VI.SOFTWARE USED

Sublime Text is a cross-platform source code editor with a Python application programming interface (API). It is always natively supports many programming languages, markup languages, functions can be added by users with plugins, typically community-built and maintained under free-software licenses. The list of features in sublime text is "Goto Anything," quick navigation to files, symbols, or lines "Command palette" uses adaptive matching for quick keyboard invocation of arbitrary commands, Simultaneous editing simultaneously make the same interactive changes to multiple selected areas, Python-based plugin API, Project-specific preferences, Extensive customizability via JSON settings files, including project-specific and platform-specific settings, Cross platform (Windows, macOS, and Linux), Compatible with many language grammars from TextMate.



Figure 2.SublimeText 3

**Xamarin** is a Microsoft-owned San Francisco, California-based software company founded in May 2011 by the engineers that created Mono, Mono for Android and Mono Touch, which are cross-platform implementations of the Common Language Infrastructure (CLI) and Common Language Specifications (often called Microsoft .NET).

With a C#-shared codebase, developers can use Xamarin tools to write native Android, iOS, and Windows apps with native user interfaces and share code across multiple platforms, including Windows and macOS According to Xamarin, over 1.4 million developers were using Xamarin's products in 120 countries around the world as of April 2017.

On February 24, 2016, Microsoft announced it had signed a definitive agreement to acquire Xamarin.



Figure 4.Xamarin

## VII.PROGRAM OUTCOME

### MODULE 1- WEATHER FORECAST

A live weather report which gives minimum temperature, maximum temperature, Rainfall, moisture, humidity ,wind speed etc., These details are fetched from the Open Weather Map ,with forecast of weather condition.

With the help of 100 years weather data and a week weather forecast details using data collection, day, time maximum temperature, probabilities of precipitation, Quantitative precipitation, wind speed and wind direction, the accuracy of the weather prediction is enhanced.

### MODULE 2- CROP INFORMATION

Provides suggestions for crops that can able to produce maximum yield based on climatic condition and past crop success rate.

#### Crop Status:

It provides the information such as  
- Crop details such as name, size of plantation

- Crop growth information
- Pesticides to be used.
- Amount to be invested.

Environmental and Computer Science IPCBEE vol.19(2011) © (2011) IACSIT Press, Singapore.

[5] “Decision tree for the weather forecasting” by Rajesh Kumar in International Journal of Computer Applications (0975 – 8887) vol.2, August 2013.

### Module 3- Crop Scheduling

#### Overall Scheduling Details

-Provides complete scheduling for the activity that is needed to be done for the planted crop. The Scheduling Includes

- Land preparation
- Seed sowing
- Irrigation
- Crop growth
- Harvesting

### Module 4- FERTILIZER SUGGESTIONS

Crop based suggestion for fertilizers are provided to increase the quality of production.

Fertilizers based on crops are gathered from websites South Indian Fertilizers (<http://sif.in/>).

Agromet Advisory Bulletins also provides forewarning system for major pest and diseases of principal crops and advises on plant protection measures.

#### VIII.CONCLUSION

This provides effective weather and climate information. Advisory services such as decision making of crop to cultivate on critical situations is provided. It helps in irrigation scheduling and further other activities.

#### IX.REFERENCE

[1] “Rainfall prediction using Data Mining Techniques” by Jyothis Joseph, Ratheesh.T.K in International Journal of Computer Applications - Vol 83(8), 2013.

[2] “Weather Prediction Based on Decision Tree Algorithm Using Data Mining Techniques” by Siddharth S.Bhatkande, Roopa G.Hubballi in International Journal of Advanced Research in Computer and Communication Engineering – Vol 5(May 2016).

[3] “Rainfall Forecasting using Data mining technique” by M.Kannan, S.Prabhakaran, P.Ramachandran in International Journals of Engineering and Technology Vol.2(6),2010, pp.397-401.

[4] “Daily Rainfall Forecasting for Mashhad Synoptic Station using Artificial Neural Networks” by Najmeh Khalili , Saeed Reza Khodashenas on 2011 International Conference on

