Project Design Phase-I

PROPOSED SOLUTION

Date	November 2, 2022
Team ID	PNT2022TMID47651
Project Name	Project - Exploratory Analysis Of RainFall Data In India For Agriculture
Marks	

Proposed Solution :

S.No.	Parameter	Description
•	Problem Statement (Problem to be solved)	• Rainfall has been a major concern these days. • Rainfall is a key part of the hydroogical cycle and alteration of its patterns directly affects the water resources. Changes in the pattern have become a major issue for harvesting crops. • This has paved the way for drastic changes in patterns of rainfall. • The factors that have been affecting rainfall are temperature, humidity, wind speed, pressure, and precipitation. These are primary factors that affect rainfall. It is highly important to study the behavior of rainfall against the factors that have been affecting it. • Only then we will be able to predict the rainfall accurately.
•	Idea / Solution description	• Technology is much more advanced now. **Machine Learning** has become trending for predictions. • It contains various algorithms that can help us in predicting our required value.

		• The proposed system forecasts rainfall with machine learning technique: 1. Random Forest 2.Decision Tree 3.XGbost 4.K-nearest neighbors
•	Novelty / Uniqueness	• The use of machine learning techniques has increased the accuracy of rainfall prediction systems by exploring the hidden patterns of historical weather data • This application is usefel for begineers in agriculture.
•	Social Impact / Customer Satisfaction	• Helps in producing fields and healthy crops. • Any type of malfunction in the weather sensor can also compromise the accuracy of the proposed rainfall prediction system.
•	Business Model (Revenue Model)	• This comparative study is conducted concentrating on the following aspects: modeling inputs, Visualizing the data, modeling methods, and pre-processing techniques. • The results provide a comparison of various evaluation metrics of these machine learning techniques and their reliability to predict rainfall by analyzing the weather data.
•	Scalability of the Solution	• Machine learing used for accurate prediction in which the given dataset is cleaned and normalized before the

		classification process begins. • Timely and accurate forecasting can proactively help reduce human and financial loss.