Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID08829
Project Name	Exploratory Analysis of Rainfall Data in India for Agriculture
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Irregular rainfall can have many impacts like the destruction of crops and farms, damage of property. So a better forecasting model is required for an early warning that can reduce the risks to life and property also helps to manage the agricultural farms in a better way. This tool is developed to evaluate the rainfall and for predicting the likeliness of rain.
2.	Idea / Solution description	Building an ML-based model to predict the rainfall of places in India with a high concentration of agricultural activities while taking care of the trends and analysis done already.
3.	Novelty / Uniqueness	ML tools are applied to make predictions on the available data, the input data is usually pre-processed to reformat the data into a form that will make training of prediction by, the ML tool(s) easier and faster based on their accuracy, reliability, and sustainability.
4.	Social Impact / Customer Satisfaction	These results highlight the challenges farmers face in anticipating seasonal rainfall, which has implications for crop diversification and choices to adopt drought tolerant cultivars. The results suggest that farmers' expectations of upcoming seasonal climate are important measures of farm decision-making.
5.	Business Model (Revenue Model)	Rainfall prediction is an important task due to the dependence of many people on it, especially in the agriculture sector. Prediction is difficult and even more complex due to the dynamic nature of rainfalls.
6.	Scalability of the Solution	To this end, this study presents a comparative analysis using simplified rainfall estimation models based on conventional Machine Learning algorithms and Deep Learning architectures that are efficient for these downstream applications. Any feature or module could be easily included into the application to expand the user functionalities.