Ideation Phase
List of Problem Statements

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Team ID	PNT2022TMID40831
Project Name	Exploratory Analysis of RainFall Data in India for Agriculture

Abstract:

Rain is usually seen as a benefit to crops and fields, but **there is an "ideal" amount of rainfall in any given growing season for most crops**. If the average rainfall is much lower or higher than the ideal, it can lead to significant problems, from drowned crops to lower yields. Rainfall forecasting or prediction gained research relevance due to its persistent applications such as disaster management, agriculture, pollutant concentration levels. But accurate rainfall prediction has become very complicated in recent times due to drastic variability in climatic changes. So a better forecasting model based on the classification models such as SVM, XGBoost, KNN, Decision Treewith high accuracy is needed.

Customer Problem Statement:

1) Generally the maturity period of there crop coincide with less rainfall conditions. Which causes severe economic losses and low yield of their crop.

2) The property of soil get changed because of low rainfall and accumulation of used insecticides and pestcidies on upper surface. Because sufficient water is not present to leach these chemical down.

3) Farmers use faulty irrigation system which also leads to accumulation of salt on the soil.

4) Crust formation on soil surface

5) Poor growth of crops.

6) Also cost of production increased due to low rainfall condition because it become farmers necessity o use other artificial irrigation method.

I am	Farmers – whose main occupation is agriculture, will be affected most by the irregular rainfall.
I'm trying to	• Get the reliable data of past rainfall information over the desired region for prediction. • Predict the accurate rainfall over a region on a particular period.
But	• The wrong prediction results in the action of choosing the wrong crops which may lead to massive loss and wastage. • The correct predictions but after a delay of certain hours may also lead to a problem.

Because	• Improper collection of data of rainfall could lead to affect the accuracy of prediction. • Sudden change in weather such as tornado which can occur immediately after the prediction is done.
Which makes me feel	The trust on the tool or product will not be full of integrity.
What solution to solve the issue	The machine learning algorithms can be used for predicting rainfall data using important atmospheric features by describing the relationship between those atmospheric variables that affect the rainfall.