**Ideation Phase**
**Brainstorm & Idea Prioritization Template**

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| Date | 12 oct 2022 |
| Team ID | PNT2022TMID20403 |
| Project Name | ESTIMATE THE CROP YIELD USING DATA ANALYTICS |
| Maximum Marks | 4 Marks |

IDEA 1:

In India, Agricultural yield is mainly depends on whether condition. A vast amount of agricultural data is created continuously. This leads to the big data era has brought with it agricultural data. To predict the future crop productivity ,an analysis needs to be made in order to help the farmers to maximize the crop yield production.

By utilizing electronics devices for data collection benefits from smart technologies. So in our project using technology like Data Analytics and Machine learning we'll analyse the agriculture data and obtain the results. For such kind of data analytics in crop prediction, there are several different algorithms are available by using that we can analyze the data and predict the result. By using algorithm like K means clustering, Apriori Algorithm, Naïve Byes Algorithm and with the help of inter-relation between those, we can analyze the data and get the result. This result will be provided to farmers for a higher crop yield productivity.

IDEA 2:

Agriculture is very important for humans,it is one of the basic needs in human life. When we consider india and indians ,majority of the Indian population is in to

agriculture. There are barriers to boosting agriculture yield because of change in like the factors like climatic changing, geographical conditions, economic conditions are to be considered for the impact on the production of the crops. Before planting, farmers need to know about the crop yield so that they can increase the productivity.

Crop yield prediction is important to predict the yield. By using Maching learning technology we can predict Agriculture crop yield. WEKA a java based dialect programming for less challenging assistance with information data sets, assigning design outcomes tool was applied for dataset processing and the overall methodology includes 1) Pre-Processing the dataset 2) building the predicition model utilizing WEKA 3) Analyzing the outcomes.

IDEA 3:

Analyzing the yields of crop is necessary to update the policies to ensure food security. A research group conducted a study with the aim in suggesting a novel data mining method to predict the yields of crop depends on agricultural big data analytics methodologies, which were progressively contrast with conventional data mining methodologies in the process of handling data and modeling designs.

Nearest neighbors modeling is one such novel data mining technique which works on the results collected based on data processing structures form the farmers and suggest a well unbiased result on the base of accuracy and prediction time in advance.

Simulation models based on field experiment are valuable technologies for studying and understanding crop yield gaps, but one of the critical challenge remain with these methods is scaling up of these approach to assess the data collated between different time intervals from the broader geographical regions. Satellite

retrieved data have frequently been revealed to present data sets that, by itself or in grouping with other information and model designs, can precisely determine the yields of crop in agricultural lands.

The yield maps developed shall provide an unique opportunity to overcome both spatial and temporal based scaling up challenges and thus improve the ideology of crop yield gaps prediction.

First method works closely with the constructive maps representing the average crop yields, it can be used directly to accesses specific crop yield influencing factors for further studies whereas the second method use the remote sensing technology to retrieve the data for providing the useful information regarding the crop yield prediction and estimation.

IDEA 4:

The main objective is collecting agricultural dataset which can be used to analyzed for useful crop yield forecasting. To predict the crop yield with the help of data mining technique, and it is also helps the farmer to choose the most suitable crop, thereby improving the value and gain of the farming area. Firstly the data set should collect and it is subjected to preprocess for noise removing and computational methods.

From that dataset, it is subjected to Feature selection for make a predictive modeling. In this proposed approach it is mainly focused on Regression Techniques. Various regression analysis should be performed and it was compared and tested.

Regression analysis is a form of predictive modeling technique which investigates the association between a dependent and independent variable. This technique is used for forecasting, time series modeling and discovers the causal effect

relationship between the variables. Regression analysis indicates the significant relationships between dependent variable and independent variable and it indicates the strength of impact of multiple independent variables on a dependent variable. Yield gaps can be defined as the difference between the expected crop yields with respect to the actual crop yield and accurate, spatially unambiguous awareness and information about the yield gaps is necessary to achieve sustainable amplification of agricultural yields.