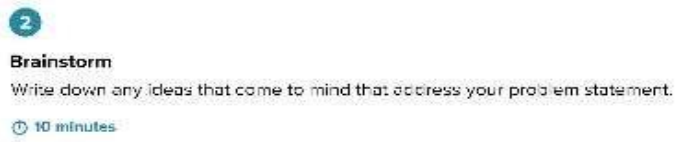
Ideation Phase
Brainstorm & Idea Prioritization Template

Team ID	PNT2022TMID1456
Project Name	Smart Farmer - IoT Enabled Smart Farming Application
Maximum Marks	4 Marks

Step-1: Team Gathering, Collaboration and Select the Problem Statement

Step-2: Brainstorm, Idea Listing and Grouping



DEEPAK KUMAR A

Team Lead

- Can identify nutrient levels and deficiency in the soil using sensors and intimate the farmer about the counter action required.
- Controlling water pump remotely through mobile app using relay, microcontroller and api key.
- Can use GSM module for transferring the data from the edge device to the cloud database.
- Machince learning can be used to analyse crop growth and predict the harvest time.

GANESH AS

- Adding an artificial intelligent system to predict the production of goods.
- Using the App, the farmer can control the water pump through various options based on the requirement.
- The Real time data analyzer could be connected to the databases to obtain the results.
- The CCTV cameras, infrared cameras, weather monitoring systems can be used to monitor the farm.

AKSHYA KUMAR S

- Monitering animal movements using sensors/camera and preventing them from entering the field
- Notification could be sent to farmer's phone about environmental conditions and water levels of the crop field with the help of an App.
- The LoRa technology can be used to transmit sensor readings from the device and update the data in the cloud.
- Prediction of water scarcity/drought situations and forewarning the farmer with the aid of AI

GUNA DEEPAN G

- Control irrigation, saves water using GreenIQ smart sprinklers controllers
- Monitor the water tank level in real time to avoid scarcity and make the irrigation process more efficient
- Data can be collected from environment using sensors and sent to cloud database to monitor the climatic condition
- Soil sensors measure soil moisture, temperature ,pH and electric conductivity enabling farmers to approach each crop's unique needs individually

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes

Awareness

Should intimate the recommended chemical levels in the soil for crop growth.

Should inform the farmer about the soil's suboptimal moisture level

Notify the farmer of any changes in weather conditions.

Sensor

NPK sensor
Soil moisture
Temperature sensor
pH sensor
Rain sensor
Humidity
LDR

Report

Alert messages in case of abnormality in the parameters and suggestion of ideal counter actions

Notify the farmer about the weather conditions , fertilizer requirements, how much water the crops will need to be provided with.

Display details analysis of the sensor data in the form of graphs/ charts and the implication of current readings

Actuations

Climatic condition can be monitored with the help of rain sensor,LDR,temperature sensor and notify the farmer incase of emergency

Based on NPK,pH chemical nutrients and acidity of the soil can be determined and suitable action can be taken .

Based on soil moisture level and rain sensor readings appropriate amount of water can be supplied to the field using relaywith water pump

Data Analysis

Based on scientific data, determining the minimal water/moisture level in the soil needed by the specific type of crop sowed

Recommedation of suitable crop variety to be sown based on environmental conditions determined with the help of sensor data

Determination of chemicals level in the soil required by the particular variety of crop sown based on scientific data

Alert

Notification is shown in farmer's phone using Wi-Fi about environmental condition,health and water levels of the crop field

Step-3: Idea Prioritization