<h1 style="text-align:center">Ideation Phase
Brainstorm & Idea Prioritization Template</h1>

Ideation Phase
Brainstorm & Idea Prioritization Template

Team ID	PNT2022TMID14625
Project Name	SmartFarmer - 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

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

⏱ 10 minutes

KAVIARASU D
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.

Machine learning can be used to analyse crop growth and predict the harvest time.

AKASH V

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.

RAVALA DHANUSH

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

MOHAMMED ASHLAM

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

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

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

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

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

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

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

④

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

🕐 20 minutes

Importance

If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

Based on the water levels of the farm measured by the sensors , control the water pump remotely through the mobile app

To the farmer, suggest the use or prohibition of fertilisers based on the chemical levels identified in the soil.

Notify the farmer of any changes in weather conditions.

Prediction of water scarcity/drought situations and forewarning the farmer with the aid of AI

Adding an artificial intelligent system to predict the production of goods.

Monitoring animal movements using sensors/camera to preventing from entering the field

Machine learning can be used to analyse crop growth and predict the harvest time.

Feasibility

Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)