


## Ideation Phase

### Brainstorm & Idea Prioritization Template

Team ID	PNT2022TMID04737
Project Name	SmartFarmer - IoT Enabled Smart Farming Application
Maximum Marks	4 Marks




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

Template



## Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.


 10 minutes to prepare  
 1 hour to collaborate  
 2-8 people recommended

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**Define your problem statement**

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

 5 minutes

Problem

1)How might we provide efficient decision support system using wireless sensor network?

2)How might we help the farmers to ease their work?

3)How might we identify nutrients and deficiency in the soil?

4)How might we monitor the crops and control pump(irrigation) remotely?

5)How might we save energy with less effort?

## Step-2: Brainstorm, Idea Listing and Grouping

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### Brainstorm

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

🕒 10 minutes

#### TIP



You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

#### VIVEKA VARATHAN

Providing timely weather update

Should have interactive interface

Alert indication when temperature rises

#### SARAVANAN

Excess water indication

Crop suggestion based on other users' input

nbuilt planner for planning

#### SHIVANAND

Historical weather data archive

Using a cloud service for sync

Create a Web Application

#### SUDHAN

Weather risk assessment

Notification for watering the crops

To use Cloud Database for storing all the data about the field and crop

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### 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 can break it up into smaller sub-groups.

🕒 20 minutes

## Awareness

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

Notify the farmer of any changes in weather conditions.

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

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

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

## 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

Recommendation 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

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#### 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

