

Ideation Phase


Brainstorm & Idea Prioritization Template

Date	19 September 2022
Team ID	PNT2022TMID34075
Project Name	IoT Based Smart Crop Protection System for Agriculture
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization Template:




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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Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

 10 minutes

A

Team gathering

Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B

Set the goal

Think about the problem you'll be focusing on solving in the brainstorming session.

C

Learn how to use the facilitation tools


Use the Facilitation Superpowers to run a happy and productive session.

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1


Problem Statement

To help the farmers in protecting the crops from animals and birds and also monitor the soil moisture levels, temperature and humidity values.

 5 minutes


PROBLEM


Farmers are facing problem in protecting their crops from animals and birds and they are not aware of the soil moisture levels, temperature and humidity values.





Key rules of brainstorming


To run an smooth and productive session


 Stay in topic.

 Encourage wild ideas.

 Defer judgment.

 Listen to others.

 Go for volume.

 If possible, be visual.

Step-2: Brainstorm, Idea Listing and Grouping

2

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!

AATHIRA. S

IOT device is used to indicate the farmer by a message while someone enter into the farm and we can use SD card module that helps to store a specified sound to fear the animals

To develop intruder alert to farm, to avoid losses due to animals and fire. These intruder alert protect the crop from damaging that indirectly increase the yield of the crop

Atmospheric conditions and soil conditions can be detected through mobile application

We can use a smoke sensor to identify the smoke produced from the fire

We can use a soil moisture sensor to detect the volumetric water content in the soil

We can build a virtual fence instead of making a physical fence. It is safe for the farmers and for the wild animals as well

Sense fly agriculture done eBee sQ uses multispectral image analyses to estimate the health of crops

CropX and Mothive sensors helping farmers to reduce waste, improve yields and increase farm sustainability

ATHIRA I

The irrigation scheme helps in protecting the farms from animals and pests

MaxBotix ultrasonic sensors solve the common problem of sensing human presence

EOSDA Crop Monitoring is suitable for assessing soil moisture and comparing the change in water level with the vegetation indices

SCR by allflex and Coelar are used to measure the temperature, health activity of crops and nutritio insights

allMETEO, Smart Elements and Pycno are used to monitoring the climate conditions

Reducing Flood Damage with Wireless Water leak sensors

AKSHAYA .I

SoilScout enable farmers to save upto 50% irrigation water, reduce the loss of fertilizers and deliver actionable insights regardless if seasons or weather conditions

Farmapp and Growlink sensors enables them to get accurate real-time information on greenhouse conditions such as lighting, temperature, soil condition and humidity

UAVs (unmanned aerial vehicles) and drones are better equipped than airplanes and satellites to collect agricultural data

Arable and Semios can monitor the crop growth and prevent any diseases or infestations that can harm our yield

PIR and Ultrasonic sensors to detect the animals and send signal to the controller

This gadget will be controlled and monitored from far off region and it is carried out in agricultural fields, grain shops and bloodless stores for protection purpose

ABHIRAMI J.S

Alarm system can be made if any animals are detected around the field and also we can measure humidity, temperature and soil moisture through sensors

Sensors can be used to detect the presence of animals or birds or some unknown persons around the farm and also can monitor humidity, temperature and soil moisture

Any kind of damage to the crop can be detected and can be informed to the farmer through a mobile application and at the same time atmospheric condition and soil conditions can also be measured

Fencing around the crop and sprinklers can be made against animals or birds that are trying to enter into the crop and can also monitor humidity, temperature and soil moisture too

We can use ultrasonic sensors for monitoring purposes and motion sensors together to detect any presence of animals or birds or any unknown persons around the farm land

We can prevent the entering of animals or birds or any other intruders by giving an alert to the farmers along with the sound of a dog via speakers

ANU L. S

Use motion signal to detect wild animals approaching near the field

The water will be allowed to supply to the crop field based on the moisture content in farm field using moisture sensor for controlling heavy water supply

When there is any fire on farm then we receive a fire message by the smoke sensor that detect the fire

Area conditions about the farm circumstances is given to the farmer through GSM technology

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 can break it up into smaller sub-groups.

🕒 20 minutes

The sticky notes are organized into several clusters of related ideas:

- Security and Intrusion Detection (Purple and Green notes):**
 - Alarm system can be made if any animals are detected around the field and also we can measure humidity, temperature and soil moisture through sensors
 - We can prevent the entering of animals or birds or any other intruders by giving an alert to the farmers along with the sound of a dog via speakers
 - To develop intruder alert to farm, to avoid losses due to animals and fire. These intruder alert protect the crop from damaging that indirectly increase the yield of the crop
 - IOT device is used to indicate the farmer by a message while someone enters into the farm and we can use SD card module that helps to store a specified sound to fear the animals
 - We can use a smoke sensor to identify the smoke produced from the fire
 - We can use a soil moisture sensor to detect the volumetric water content in the soil
 - Use motion signal to detect wild animals approaching near the field
 - Sensors can be used to detect the presence of animals or birds or some unknown persons around the farm, and also can monitor humidity, temperature and soil moisture
 - When the fire on our farm then we have received a fire message by the smoke sensor that detect the fire
 - We can use ultrasonic sensors for monitoring purposes and motion sensors together to detect any presence of animals or birds or any unknown persons around the farm land
 - PIR and Ultrasonic sensors to detect the animals and send signal to the controller
 - Cropx and Mothive sensors helping farmers to reduce waste, improve yields and increase farm sustainability
 - The water will be allowed to supply to the crop field based on the moisture content in farm field using moisture sensor for controlling heavy water supply
 - MaxBotix ultrasonic sensors solve the common problem of sensing human presence
- Virtual Fencing and Protection (Yellow and Orange notes):**
 - We can build a virtual fence instead of making a physical fence. It is safe for the farmers and for the wild animals as well
 - Fencing around the crop and sprinklers can be made against animals or birds that are trying to enter into the crop and can also monitor humidity, temperature and soil moisture too
- Monitoring and Data Collection (Blue and Teal notes):**
 - This gadget will be controlled and monitored from far off region and it is carried out in agricultural fields, grain shops and bloodless stores for protection purpose
 - The irrigation scheme helps in protecting the farms from animals and pests
 - Arable and Semios can monitor the crop growth and prevent any diseases or infestations that can harm our yield
 - UAVs (unmanned aerial vehicles) and drones are better equipped than airplanes and satellites to collect agricultural data
 - EOSDA Crop Monitoring is suitable for assessing soil moisture and comparing the change in water level with the vegetation indices
 - Reducing Flood Damage with Wireless Water leak sensors
 - Farmapp and Growlink sensors enable them to get accurate real-time information on greenhouse conditions such as lighting, temperature, soil condition and humidity
 - Sense fly agriculture done eBee sQ uses multispectral image analyses to estimate the health of crops
 - allMETEO, Smart Elements and Pycno are used to monitor the climate conditions
 - SCR by allflex and Coelar are used to measure the temperature, health activity of crops and nutrition insights
 - SoilScout enable farmers to save up to 50% irrigation water, reduce the loss of fertilizers and deliver actionable insights regardless of seasons or weather conditions
- Environmental and Crop Health (Pink and Red notes):**
 - Atmospheric conditions and soil conditions can be detected through mobile application
 - Area conditions about the farm circumstances are given to the farmer through GSM technology
 - Any kind of damage to the crop can be detected and can be informed to the farmer through a mobile application and at the same time atmospheric condition and soil conditions can also be measured

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

