Ideation Phase
Brainstorm & Idea Prioritization

Date	5 November 2023
Team ID	Team-592127
Project Name	Tea leaf disease detection using Deep Learning
Maximum Marks	4 Marks

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

Brainstorm & idea prioritization

Deep Learning Model For Detecting Diseases In Tea Leaves

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

Done By:
Medi Pavan Teja
R LokeshKanna

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.

Open article →

1 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

How can we detect the Tea leaf disease more accurately in early stage

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

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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!

Pavan Teja

Collect a larger and more diverse image dataset and train a Deep learning model to detect the disease	Incorporate explainable AI techniques to provide clear explanations for why the model made a particular disease detection decision
Use geospatial data to identify disease clusters in specific regions and understand the spatial patterns of disease outbreaks	Identify and study early warning indicators specific to various tea leaf diseases, such as changes in leaf texture, color, or size
Develop automated reporting mechanisms to deliver real-time or periodic disease status updates to farmers	Integrate disease detection with precision agriculture technologies, allowing targeted treatment of affected areas

Lokesh Kanna

Use drones to continuously capture the image of leaves of entire crop and pass to model in regular intervals	By continuously monitoring using CCTV
Develop machine learning models that can recognize subtle patterns and anomalies in tea leaf images, which are often early indicators of disease.	Investigate thermal imaging to detect variations in leaf temperature that could be indicative of diseases before visible symptoms appear.
Classification of plant leaf diseases using texture features.	Implement a network of IoT sensors in tea plantations to continuously monitor environmental conditions

Done By:
Medi Pavan Teja
R LokeshKanna

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, 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

TIP
Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

Collect a larger and more diverse image dataset and train a Deep learning model to detect the disease	Incorporate explainable AI techniques to provide clear explanations for why the model made a particular disease detection decision
Develop automated reporting mechanisms to deliver real-time or periodic disease status updates to farmers	Use drones to continuously capture the image of leaves of entire crop and pass to model in regular intervals

Step-3: Idea Prioritization

Done By:
Medi Pavan Teja
R LokeshKanna

(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.
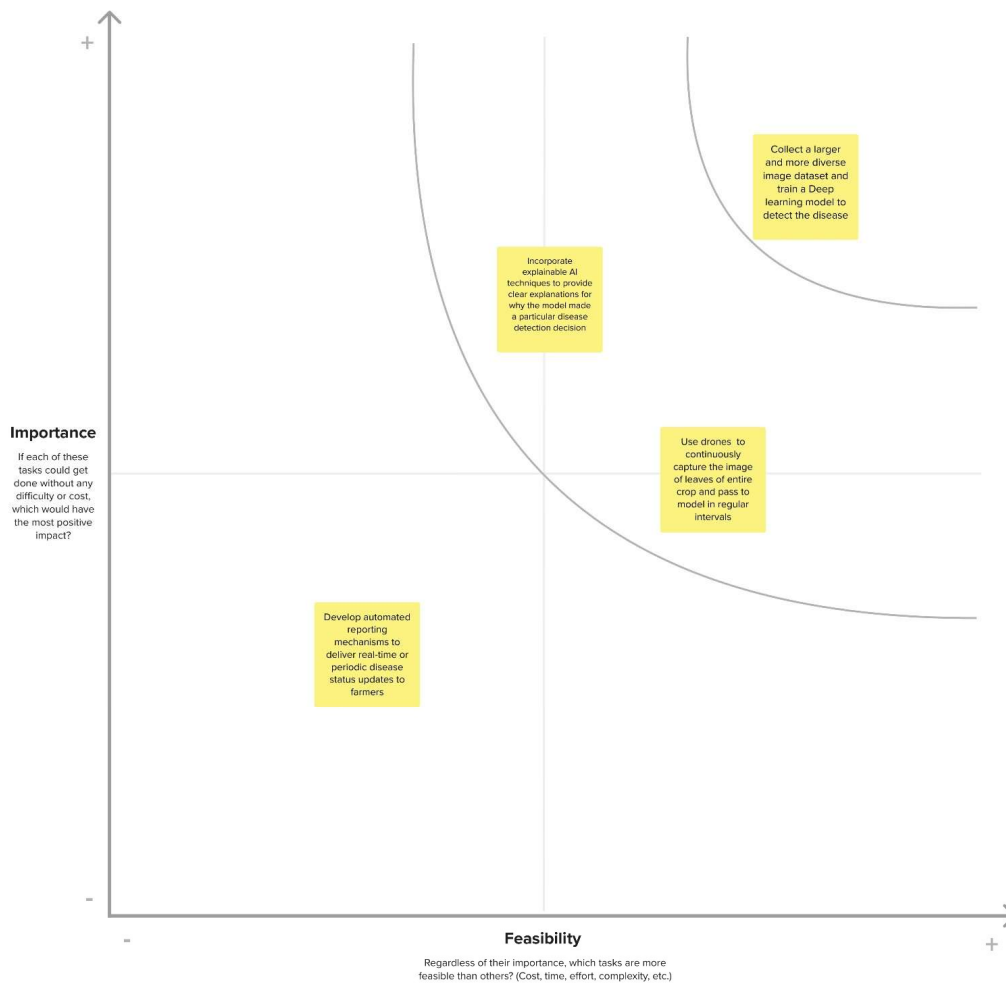
⏱ **20 minutes**

TIP 💡

Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the **H key** on the keyboard.

+

Collect a larger and more diverse image dataset and train a Deep learning model to detect the disease

Incorporate explainable AI techniques to provide clear explanations for why the model made a particular disease detection decision

Importance

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

Use drones to continuously capture the image of leaves of entire crop and pass to model in regular intervals

Develop automated reporting mechanisms to deliver real-time or periodic disease status updates to farmers

-

- **Feasibility** **+**

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

In conclusion, the selection of Deep learning model as our top priority is a strategic decision based on its high impact potential, feasibility, and alignment with our goals. We are confident that this choice will propel us towards early detection of tea leaf disease in future.