**1. INTRODUCTION**

**Overview:**

This project aims to help poultry farmers identify diseases in chickens early using Artificial Intelligence (AI). Farmers in rural areas often struggle to recognize symptoms in time due to a lack of veterinary access and awareness. As a result, many chickens die from common but undiagnosed diseases, leading to financial loss and emotional stress.

To solve this, our team built a simple AI-powered web application. Farmers can upload a photo of their sick chicken, and the app will analyze the image using a pre-trained deep learning model (VGG16) to detect possible disease. The system then displays the disease name along with basic information and suggested actions.

**Key Features:**

* Image-based disease detection using Transfer Learning (VGG16)
* Simple and user-friendly web interface
* Disease name and prevention tips shown after prediction
* Potential for multi-language support (e.g., Telugu)
* Useful even in rural areas with minimal tech skills

**1.1 Ideation Phase**

**Define the Problem Statements**

|  |  |
| --- | --- |
| Date | 16th June 2025 |
| Team ID | LTVIP2025TMID34447 |
| Project Name | Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management |
| Maximum Marks | 2 Marks |

**✅ Problem Statement:**  
Poultry farmers often lack access to veterinary professionals and the technical knowledge required for early diagnosis of poultry diseases. This delay results in high mortality rates and substantial economic losses.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Problem Statement (PS)** | **I am (Customer)** | **I’m trying to** | **But** | **Because** | **Which makes me feel** |
| PS-1 | A poultry farmer | Keep my chickens healthy | I can't identify diseases early | I don’t have veterinary knowledge or expert help nearby | Worried and helpless |
| PS-2 | |  | | --- | | A rural chicken seller | |  | | Avoid losing chickens to disease | I don’t know the symptoms | Sick chickens often look normal at first | Frustrated and at a loss |

# **1.2 Ideation Phase: Empathize & Discover**

|  |  |
| --- | --- |
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| Project Name | Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management |
| Maximum Marks | 4 Marks |

## **Empathy Map Canvas**

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user’s behaviors and attitudes. It is a useful tool to help teams better understand their users.  
  
Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user’s perspective along with his or her goals and challenges.

### **Example: Food Ordering & Delivery Application**

User: Busy Working Professional

Says: I want quick and fresh meals without long wait times.

Thinks: I don't want to cook after work. I need fast and reliable delivery.

Does: Orders food online regularly, prefers apps with offers.

Feels: Relieved when food arrives on time. Frustrated by delays or wrong orders.

### **Empathy Map: Poultry Farmer (User of Our Project)**

User: Rural Poultry Farmer

Says: I don't know what disease my chickens have.

Thinks: If I can detect the disease early, I can save my chickens.

Does: Observes sick chickens, sometimes isolates them, tries home remedies.

Feels: Worried, helpless, and sometimes frustrated due to loss and no vet access.

# **1.3 Ideation Phase: Brainstorm &**

# **Idea Prioritization Template**

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

Team Members:  
- Team Leader: B Navya Sai Sree  
- Team Member: Anagani Siva Babu  
- Team Member: Anand Kumar Chelli  
- Team Member: Ampolu Triveni

Selected Problem Statement:  
Farmers are unable to detect poultry diseases early due to lack of expert knowledge and resources. This leads to high bird mortality and economic loss.

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

Ideas Generated:

* 1. Build a mobile/web app to detect poultry diseases using image input
* 2. Use a pre-trained AI model (Transfer Learning – VGG16) to classify diseases
* 3. Create a simple and user-friendly interface for farmers
* 4. Include voice guidance in regional languages
* 5. Add options for disease prevention tips and remedies
* 6. Alert system for nearby vets (in future)
* 7. Offline feature or SMS support for remote areas
* 8. Show confidence level of prediction
* 9. Use QR codes to access the tool without downloading
* 10. Educate farmers about common symptoms via the app

Grouped Ideas:

A. AI Technology: Idea 2, Idea 8

B. User Interface & Accessibility: Idea 1, Idea 3, Idea 4, Idea 7, Idea 9

C. Education & Awareness: Idea 5, Idea 10

D. Expansion & Support: Idea 6

## **Step 3: Idea Prioritization**

Using priority filters: Value to User, Feasibility, Time to Implement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Idea | Value | Feasibility | Time | Priority |
| Web app for disease detection | High | High | Short | High |
| Use VGG16 AI model | High | Medium | Medium | High |
| User-friendly interface | High | High | Short | High |
| Voice guidance in Telugu | Medium | Medium | Medium | Medium |
| Disease tips and remedies | Medium | High | Short | High |
| Vet alert system | High | Low | Long | Low |
| Offline or SMS feature | Medium | Low | Long | Low |
| Show prediction confidence | Medium | Medium | Medium | Medium |
| QR code access | Medium | High | Short | Medium |
| Education on common symptoms | High | High | Medium | High |