**Ideation Phase**

**Brainstorm & Idea Prioritization Template**

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| Date | 26 June 2025 |
| Team ID | LTVIP2025TMID33880 |
| Project Name | Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management |
| Maximum Marks | 4 Marks |

**Brainstorm & Idea Prioritization Template:**

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

Use this

Reference: <https://www.mural.co/templates/brainstorm-and-idea-prioritization>

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

| **Section** | **Details** |
| --- | --- |
| **Session Title** | Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management |
| **Time to Prepare** | 10 minutes |
| **Collaboration Time** | 1 hour |
| **Recommended Participants** | 2–8 people |
| **Team Members** | Gopi, Swathi, Balacharishma, Durgaprasad |
| **Team Gathering** | Invite selected members and share basic information about poultry diseases and transfer learning a few days prior. |
| **Set the Goal** | Focus on building an AI-based system using transfer learning to detect poultry diseases accurately and automatically. |
| **Learn the Tools** | Use collaborative tools (whiteboard apps, sticky notes, online sketch boards) and AI/ML frameworks (TensorFlow, PyTorch, etc.). |
| **Problem Statement** | *How might we automate and improve the accuracy of poultry disease classification using deep learning and transfer learning techniques?* |
| **Key Brainstorming Rules** | ✅ 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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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | **Gopi** | **Swathi** | **Balacharishma** | **Durgaprasad** | | --- | --- | --- | --- | | Use a pre-trained model like ResNet50 or EfficientNet to classify poultry diseases. | Train a model to detect lesions, discoloration, or abnormal patterns in poultry images. | Develop a web or mobile interface for farmers to upload chicken images for diagnosis. | Build a hardware prototype using Raspberry Pi and a camera module for real-time poultry monitoring. | | Apply data augmentation (rotation, flip, contrast adjustment) to improve model accuracy and dataset diversity. | Use Grad-CAM or similar techniques to visualize model decision areas on poultry images. | Integrate the trained model into a health management system for poultry farms. | Add a feedback mechanism where farmers can flag incorrect diagnoses for future improvement. | | Build a mobile app that uses a phone camera to detect and classify poultry diseases. | Collect real-world poultry disease images from veterinary centers or farms for better training data. | Compare different transfer learning models (e.g., InceptionV3, DenseNet, VGG) for optimal accuracy. | Use explainable AI methods to improve trust and transparency in disease detection decisions. | |

**Step-3: Idea Prioritization**

| **Idea** | **Impact (High/Medium/Low)** | **Feasibility (High/Medium/Low)** | **Priority (High/Medium/Low)** | **Assigned To** |
| --- | --- | --- | --- | --- |
| Use pre-trained CNN models like ResNet50, InceptionV3, or EfficientNet for disease detection | High | High | High | Gopi |
| Build a mobile/web app to capture images and classify poultry diseases in real-time | High | Medium | High | Swathi |
| Apply data augmentation to increase training dataset diversity and model performance | Medium | High | High | Balacharishma |
| Develop Grad-CAM based visual explanations for disease localization | Medium | Medium | Medium | Durgaprasad |
| Collect real poultry disease image datasets from farms/veterinary hospitals | High | Medium | High | Swathi & Durgaprasad |
| Integrate AI model into a health management system for poultry farms | High | Medium | Medium | Gopi & Balacharishma |
| Use Raspberry Pi and camera module for live disease detection at farms | Medium | Low | Medium | Durgaprasad |
| Add a feedback loop where farmers validate or reject predictions for future training | Medium | Medium | Medium | Team |