Project Design Phase-II

**Solution Requirements (Functional & Non-functional)**

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| Date | 27 June 2025 |
| Team ID | LTVIP2025TMID43995 |
| Project Name | Transfer Learning-based Classification of Poultry Diseases for Enhanced Health Management |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | Login & Authentication | |  | | --- | |  |  |  | | --- | | - Login with Email/Password - OAuth with Gmail/LinkedIn | |
| FR-2 | Image & Symptom Submission | |  | | --- | |  |  |  | | --- | | - Upload poultry image - Select/enter symptoms - Form validation | |
| FR-3 | Disease Prediction | - Send data to ML model - Receive classification & confidence score |
| FR-4 | Visual Explanation | - Generate Grad-CAM heatmap - Overlay on uploaded image |
| FR-5 | Display Output | - Show predicted disease, treatment, and visualization |
| FR-6 | Language Preference | - Switch between English, Telugu, Hindi |
| FR-7 | Role-Based Dashboard | - Farmer view - Vet/Student view - Admin view |

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | The application should be simple, intuitive, and mobile-friendly for rural users. |
| NFR-2 | **Security** | Secure authentication, encrypted communication (HTTPS), role-based access control. |
| NFR-3 | **Reliability** | The system should maintain 99% uptime and ensure consistent behavior under expected loads. |
| NFR-4 | **Performance** | Model prediction must return results within 3 seconds for uploaded images. |
| NFR-5 | **Availability** | Web app should be accessible 24/7 on mobile and desktop, even in low-bandwidth conditions. |
| NFR-6 | **Scalability** | Should scale to support additional diseases, users, and multilingual support over time. |