**Project Design Phase**

**Problem – Solution Fit Template**

|  |  |
| --- | --- |
| Date | 15 February 2026 |
| Team ID | LTVIP2026TMIDS82253 |
| Project Name | **Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy** |
| Maximum Marks | 2 Marks |

**Problem – Solution Fit Template:**

**Problem – Solution Fit Template**

The Problem–Solution Fit in this context means that we have identified a critical challenge faced by patients, doctors, and healthcare providers — the difficulty of accurately and quickly diagnosing diseases from medical images, especially in resource-limited environments — and developed an AI-based medical image analysis solution using transfer learning (Xception model).  
This solution automates disease detection, reduces diagnosis time, minimizes human error, and supports early and reliable medical decision-making.

**Purpose:**

❑ Help patients, doctors, and diagnostic centers address the critical problem of disease identification from medical images using an accurate, fast, and easy-to-use AI system that integrates smoothly into existing healthcare workflows.

❑ Accelerate adoption by leveraging familiar devices such as smartphones and computers and simple actions like uploading medical images, making the solution accessible even in rural clinics and low-resource healthcare settings.

❑ Strengthen trust and communication by providing clear, instant predictions that support medical professionals, reduce uncertainty, and improve confidence in diagnosis outcomes.

❑ Build stronger relationships with end-users by addressing real-world healthcare challenges such as delayed diagnosis, shortage of specialists, high consultation costs, and manual interpretation errors, while offering a reliable, AI-assisted alternative that improves efficiency and patient care.

**Template:**

