Project Design Phase
Problem – Solution Fit Template

Date	24 June 2025
Team ID	LTVIP2025TMID35409
Project Name	HematoVision: Advanced Blood Cell Classification Using Transfer Learning
Maximum Marks	2 Marks

Problem – Solution Fit Template:

HematoVision addresses a critical gap in the healthcare diagnostics domain—**the need for fast, accurate, and accessible blood cell classification**. In many clinics and diagnostic labs, especially in resource-constrained settings, **manual microscopy** remains the norm. This approach is **time-consuming**, depends heavily on expert availability, and is susceptible to **human error**, which can delay diagnosis and affect treatment outcomes.

By applying **transfer learning with MobileNetV2**, HematoVision automates the classification of blood cells (eosinophils, lymphocytes, monocytes, and neutrophils) with high precision. This AI-powered solution **reduces diagnostic time**, supports overburdened pathologists, and enhances diagnostic accuracy—**even in clinics with minimal infrastructure**.

Customers such as **medical labs, hospitals, and research institutions** benefit by streamlining their workflows, reducing error margins, and enabling early detection of blood-related disorders. The solution fits seamlessly into existing lab setups and is deployable via a **Flask-based web application**, making it **cost-effective and user-friendly**.

Ultimately, HematoVision delivers a **problem-solution fit** by aligning clinical needs with an intelligent, scalable, and accessible technology—enhancing healthcare delivery where it's needed most.

Template: