Project Design Phase

Solution Architecture
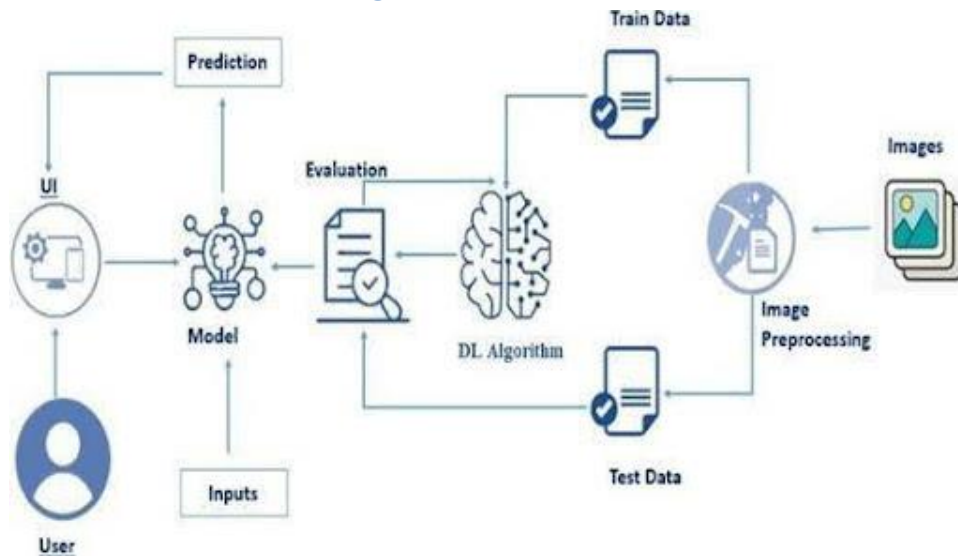
Date	28 JUNE 2025
Team ID	LTVIP2025TMID43759
Project Name	HematoVision: Advanced Blood Cell Classification Using Transfer Learning
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture bridges the gap between clinical diagnostic needs and AI technology. Its goals are:

● Identify optimal AI solutions for accurate blood cell classification.
● Describe software structure, processes, and data flow to medical stakeholders.
● Define features, development phases, and technical requirements.
● Provide clear specifications for implementation, testing, and delivery.

Solution Architecture Diagram:

Implementation Phases:

Phase	Activity
1.	Data Collection: Collect blood cell images dataset (e.g., Kaggle blood cell dataset)

2.	Data Pre-processing: Resize, normalize, and clean images.
3.	Data Augmentation: Improve dataset variability.
4.	Data Splitting: Divide data into training, validation, and testing sets.
5.	Model Building: Import necessary libraries and define the transfer learning model architecture.
6.	Training & Testing: Train the model and evaluate performance.
7.	Model Saving: Save trained model for future inference.
8.	Application Development: Build web app with HTML, Python (Flask), integrate model.
9.	User Interaction: Provide UI to upload images and display predictions.