Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	25 June 2025
Team ID	LTVIP2025TMID35506
Project Name	CleanTech:Transforming Waste Management with Transfer Learning
Maximum Marks	4 Marks

Technical Architecture

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2.

Example: AI-powered system for waste categorization and optimization using Transfer Learning.

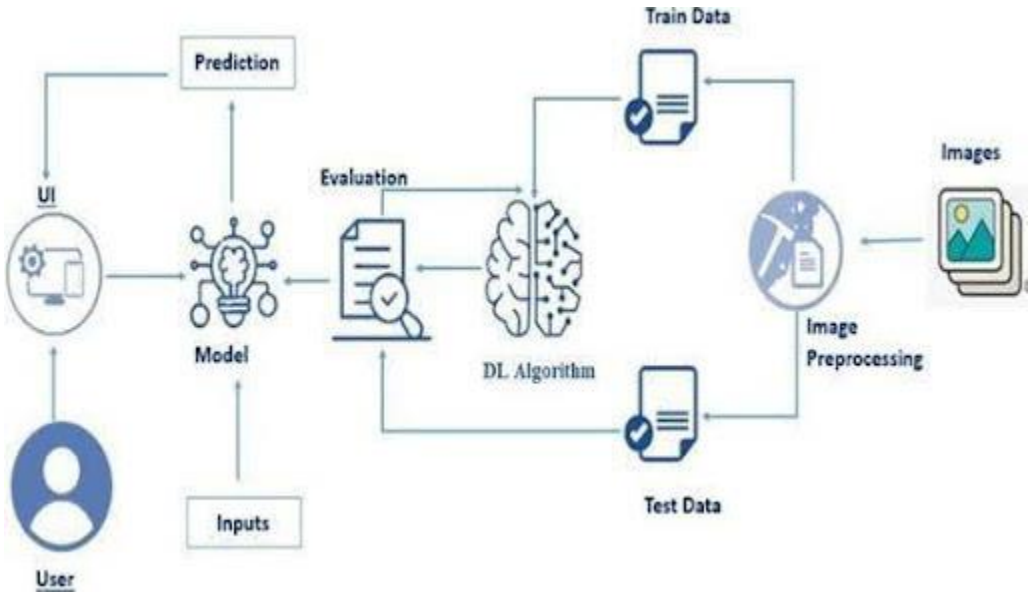

Table-1 : Components & Technologies:

S.No	Component Description	Technology
1	User Interface	HTML, CSS, JavaScript
2	Application Logic-1	Python
3	Application Logic-2	Transfer Learning Module
4	Application Logic-3	Waste Type Classification Algorithm
5	Database	MySQL
6	Cloud Database	AWS RDS / Firebase (optional)
7	File Storage	AWS S3 / Local Filesystem
8	External API-1	Geolocation API for waste tracking (optional)

9	External API-2	Municipal Integration API (optional)
10	Machine Learning Model	Transfer Learning Model (e.g., ResNet, MobileNet)
11	Infrastructure (Server / Cloud)	Local / AWS EC2

Table-2 : Application Characteristics:

S.No	Characteristics Description	Technology
1	Open-Source Frameworks	TensorFlow, Keras, Flask/Django
2	Security Implementations	SHA-256, HTTPS, IAM (Cloud)
3	Scalable Architecture	Microservices / Modular Design
4	Availability	Cloud Load Balancers / Redundant Servers
5	Performance	CDN, Caching, Efficient Model Loading

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d