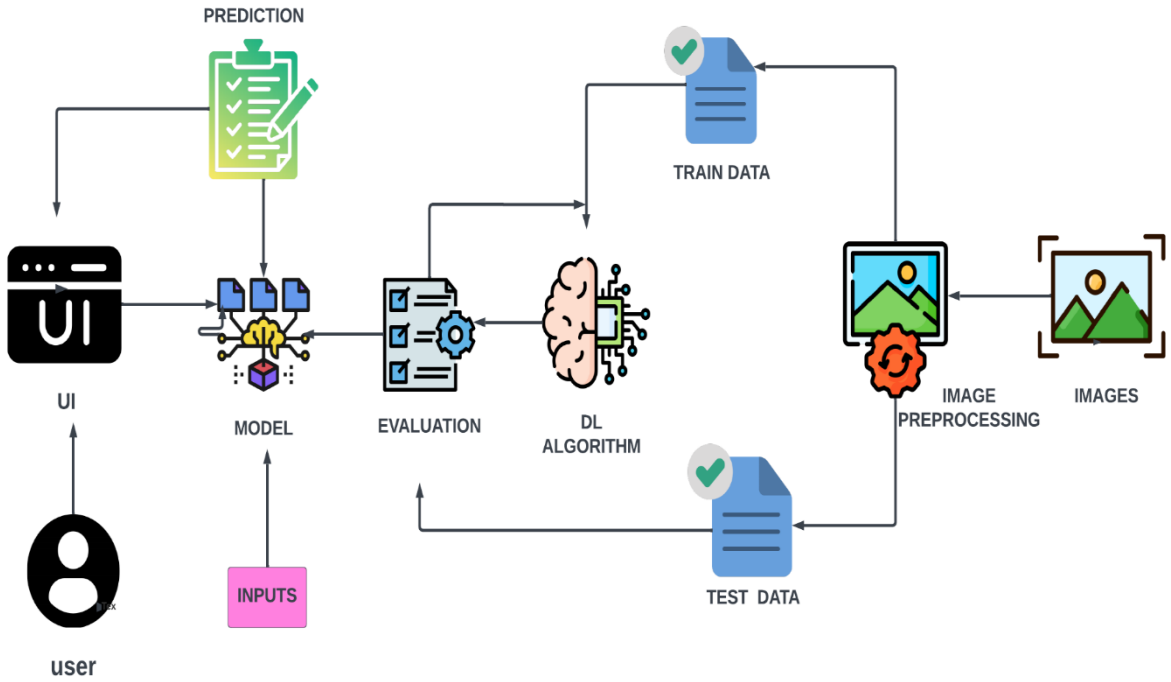
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	13 May 2023
Team ID	NM2023TMID01947
Project Name	Intelligent Garbage Classification Using Deep Learning
Maximum Marks	4 Marks

Technical Architecture:



Guidelines:

1.Data set collection.

2.Data set preprocessing.

3.Deep Learning Model Selection.

4.Model Training & Evaluation.

6.Model Deployment.

7.Classification of the waste based image processing.

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript .etc
2.	Application Logic-1	Logic for a process in the application	Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL
6.	Cloud Database	Database Service on Cloud	IBM Cloud,Cloud platforms like AWS,Azure.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application	Wastes are detected by the image processing.
9.	External API-2	Purpose of External API used in the application	Classify the wastes.
10.	CNN Algorithm	Purpose of Deep Learning Model	Image Preprocessing,DL Algorithms,ResNet,Inception or VGGNet.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table 2 :Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Python Flask,Tensor Flow
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	IBM cloud DB
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Client side : Flask(python) Web Server : IBM Watson Assistant Cloud Server:IBM Cloud
4.	Availability	Detects the waste by the image processing using DL and CNN algorithms.	IBM Cloud,Flask(python),CNN
5.	Performance	Detects and classifies the wastes into the categories.	IBM cloud