

## Project Design Phase-II

### Data Flow Diagram & User Stories

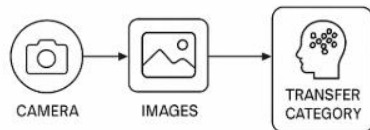
Date	19 June 2025
Team ID	LTVIP2025TMID32454
Project Name	Clean Tech:Transforming Waste Management with Transfer learning
Maximum Marks	4 Marks

#### Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

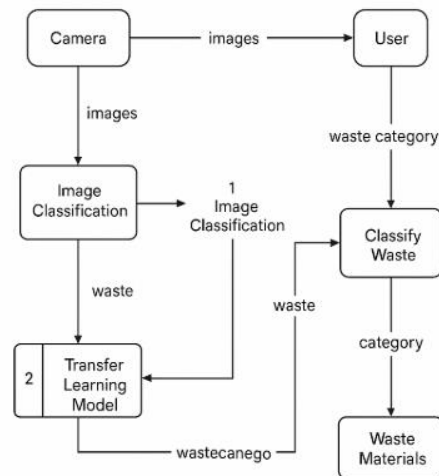
#### Clean Tech - Transforming waste management with transfer learning

Example: (Simplified)



1. Cameras capture images of the waste materials.
2. Captured images serve as input to deep learning model
3. A pre-trained model uses transfer learning
4. Model analyzes and classifies the waste
5. Waste is categorized into specific types

Example: DFD Level 0 (Industry Standard)



Example: [\(Simplified\)](#)

## User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
System (Smart Sorter – Recycling Center)	Waste Image Capture & Classification	USN-1	As a system, I want to capture images of waste from conveyor belts so that the classification process can begin..	Images are captured every 2 seconds and stored for processing.	High	Sprint-1
System	Waste Classification using Transfer Learning	USN-2	As a system, I want to identify waste items from images as recyclable or non-recyclable.	Images are classified with 90%+ accuracy into defined waste categories.	High	Sprint-1
Operator (Recycling Center Worker)	Sorting Feedback	USN-3	As a user, I can register for the application through Facebook	Corrections are logged and used in model retraining.	Low	Sprint-2
City Admin (Smart City)	Public Bin Monitoring	USN-4	As a user, I can register for the application through Gmail	Bin camera captures and classifies waste into Organic, Recyclable, or General.	Medium	Sprint-1
System	Alerting & Bin Overflow Detection	USN-5	As a user, I can log into the application by entering email & password	Alert is sent to admin dashboard or app when threshold is reached.	High	Sprint-1
Factory Supervisor	Waste Monitoring	USN-6	As a factory supervisor, I want the system to classify industrial waste like plastic, metal, or hazardous waste.	Industrial waste is categorized and compliance is logged.	Low	Sprint-3
System	Compliance Reporting	USN-7	As a system, I want to generate weekly reports of waste classification accuracy and segregation logs.	Report available in dashboard by end of week.	Medium	Sprint-4
Admin	Model Training & Tuning	USN-8	As an admin, I want to retrain the classification model periodically using corrected data.	Retrained model shows improved accuracy in subsequent runs..	High	Sprint-4