**Project Name**: CleanTech  
**Project Description**:  
An AI-powered waste classification system using transfer learning with VGG16 to identify biodegradable, recyclable, and trash images. Integrated into a Flask web application for real-time image classification.

**Project Version**: v1.0

### ****Testing Scope****

Image upload and classification interface

Accuracy of predictions for all 3 classes

Integration of Vgg16.h5 model with Flask backend

Output visualization and prediction label accuracy

### ****User Stories or Requirements to be Tested****

**US-001**: As a user, I should be able to upload an image and receive a class prediction.

**US-002**: The model should return correct predictions for most input images.

**US-003**: The UI should display results clearly.

### ****Testing Environment****

**URL/Location**: [http://localhost:5000](http://localhost:5000" \t "_new) (Flask Localhost)  
**Credentials**: Not Applicable

### ****Test Cases****

| **Test Case ID** | **Test Scenario** | **Test Steps** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- |
| TC-001 | Upload biodegradable image | Upload sample biodegradable image | Shows 'biodegradable' | Shows 'biodegradable' | Pass |
| TC-002 | Upload recyclable image | Upload sample recyclable image | Shows 'recyclable' | Shows 'recyclable' | Pass |
| TC-003 | Upload trash image | Upload sample trash image | Shows 'trash' | Shows 'trash' | Pass |
| TC-004 | Upload invalid format | Upload .txt instead of image | Shows error message | Shows error message | Pass |

### ****Bug Tracking****

| **Bug ID** | **Bug Description** | **Steps to Reproduce** | **Severity** | **Status** | **Additional Feedback** |
| --- | --- | --- | --- | --- | --- |
| BG-001 | UI not responsive on mobile | Open web app on mobile | Medium | Open | Suggest responsive mobile view |

### ****Notes****

All test cases include both positive and negative scenarios

One UI bug identified

Model accuracy meets expectations

Ready for deployment pending approval