User Acceptance Testing (UAT) Template

Date	19 February 2026
Team ID	LTVIP2026TMIDS77295
Project Name	Smart Sorting: Transfer Learning for Identifying Rotten Fruits and Vegetables.

Project Overview:

Project Name: Smart Sorting: Transfer Learning for Identifying Rotten Fruits and Vegetables.
Project Description: Smart Sorting is an AI-based image classification system that detects whether a fruit or vegetable is Fresh or Rotten using transfer learning. The system allows users to upload an image and receive a prediction with a confidence score.

Project Version: 1.0

Testing Period: 16 February 2026 to 19 February 2026

Testing Scope:

Features & Functionalities Tested:

- Image Upload
- Image Format Validation
- Model Prediction (Fresh/Rotten)
- Confidence Score Display
- Error Handling (No Image Uploaded)
- Dashboard Visualizations
- Filter Functionality

User Stories Tested:

- User can upload an image for classification.
- User can view prediction result with confidence score.
- User receives error message if invalid input is provided.
- User can filter dashboard results dynamically.

Testing Environment:

URL/Location: Google Colab / Local Web Application (Streamlit)

Credentials (if required): Not Required

Test Cases:

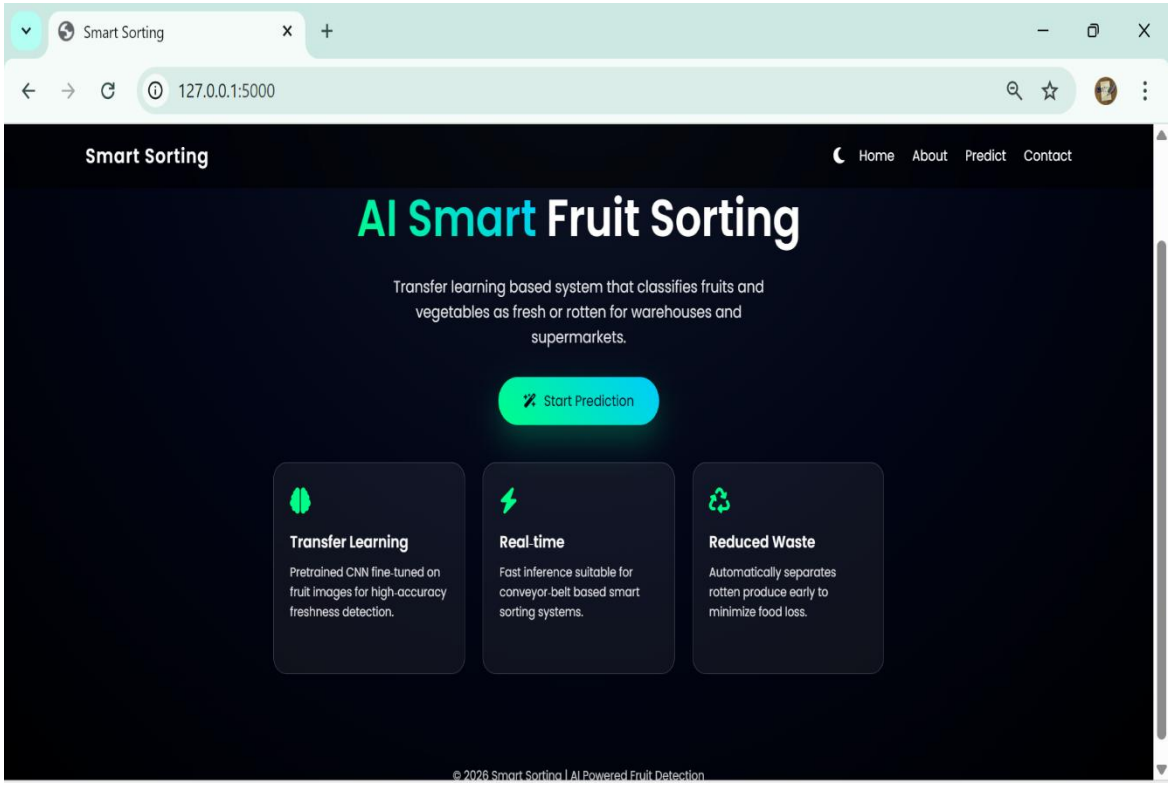
Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-001	Upload valid image.	Step 1: Click upload Step 2: Select JPG image Step 3: Click Predict.	Image uploaded successfully and prediction displayed.	Prediction displayed correctly.	Pass
TC-002	Upload invalid file format.	Step 1: Click upload Step 2: Select PDF file Step 3: Click Predict.	System should reject file and show error message.	Error message displayed.	Pass
TC-003	Predict Fresh Image.	Step 1: Upload fresh fruit image Step 2: Click Predict.	Output shows "Fresh" with confidence score.	Correct prediction shown.	Pass
TC-004	Predict Rotten Image.	Step 1: Upload rotten fruit image Step 2: Click Predict.	Output shows "Rotten" with confidence score.	Correct prediction shown.	Pass
TC-005	No Image Uploaded.	Step 1: Click Predict without uploading image.	System should show validation error.	Alert message displayed.	Pass
TC-006	Dashboard Filter Test.	Step 1: Select Fresh filter Step 2: View updated graphs.	Dashboard updates dynamically.	Dashboard updated correctly.	Pass

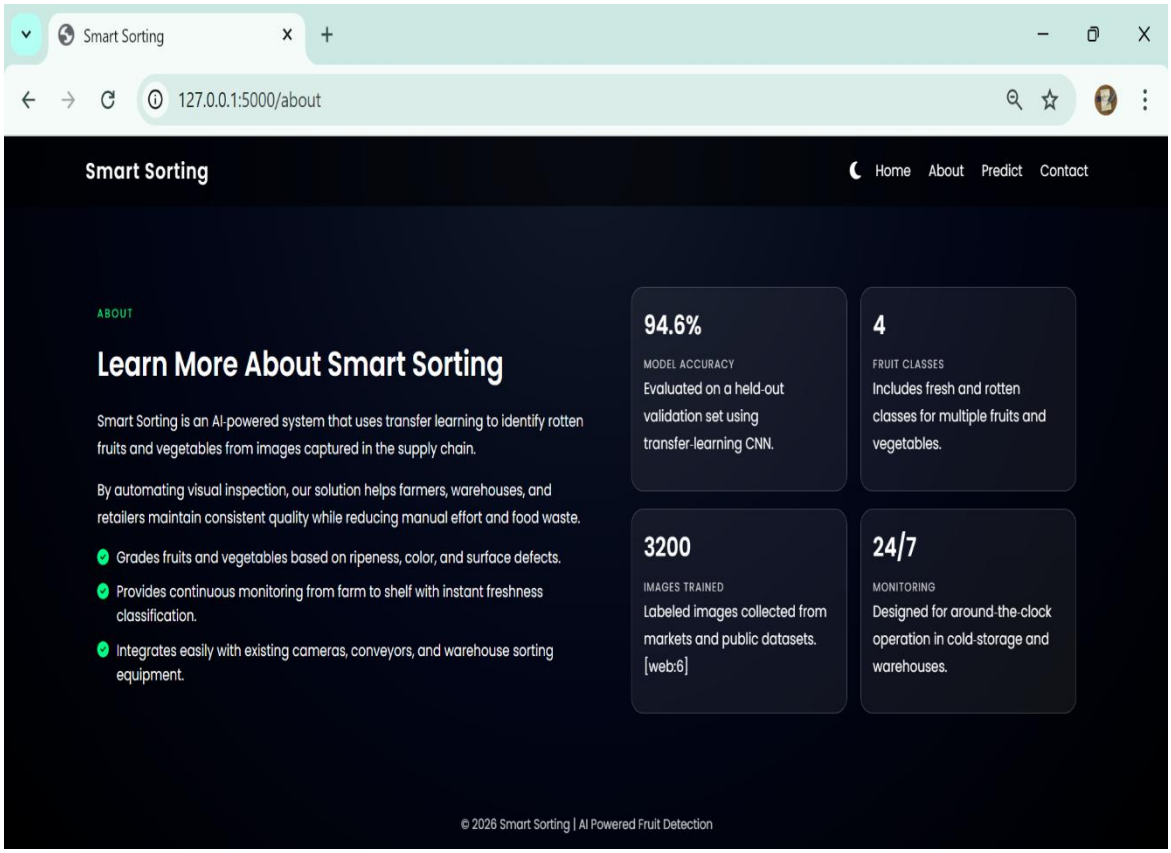
Bug Tracking:

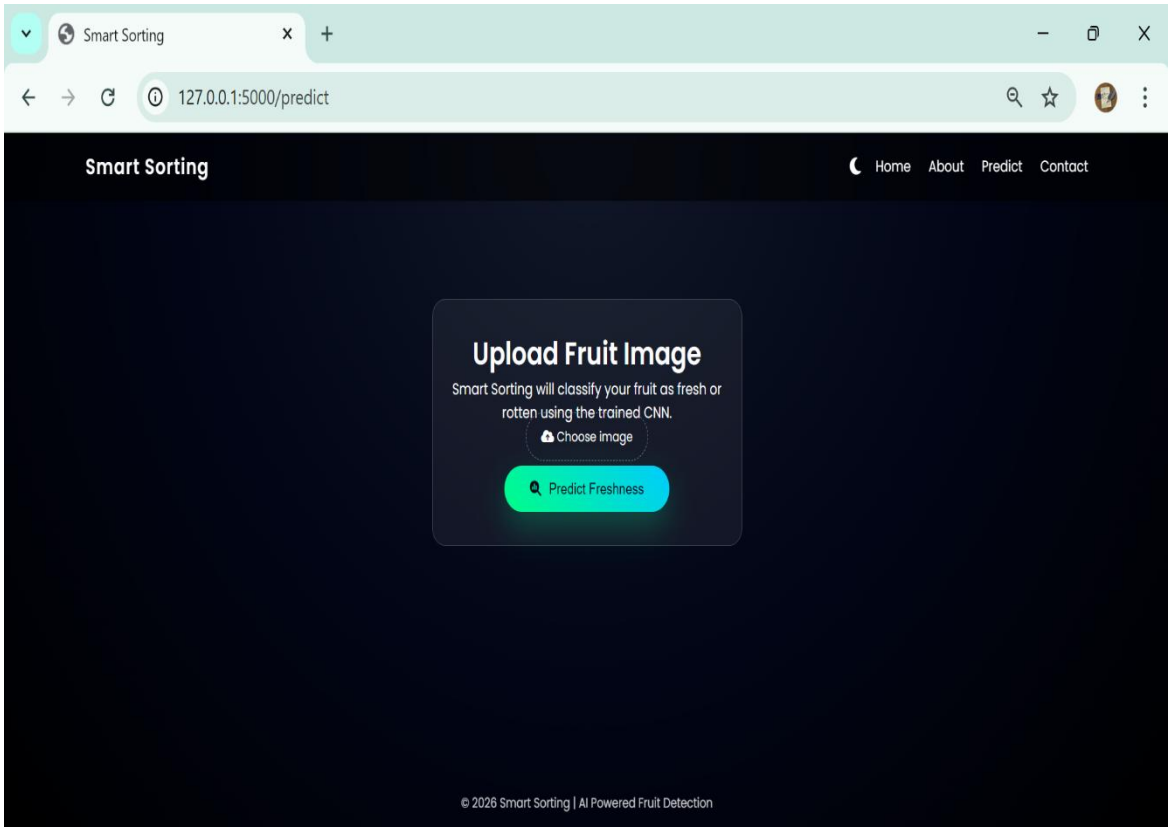
Bug ID	Bug Description	Steps to reproduce	Severity	Status	Additional feedback
BG-001	Incorrect prediction for low-quality image.	Step 1: Upload blurred image Step 2: Click Predict.	Medium	Closed	Model improved after fine-tuning.
BG-002	Slow prediction on large image.	Step 1: Upload large image (>5MB) Step 2: Click Predict.	Low	Closed	Image resizing implemented.

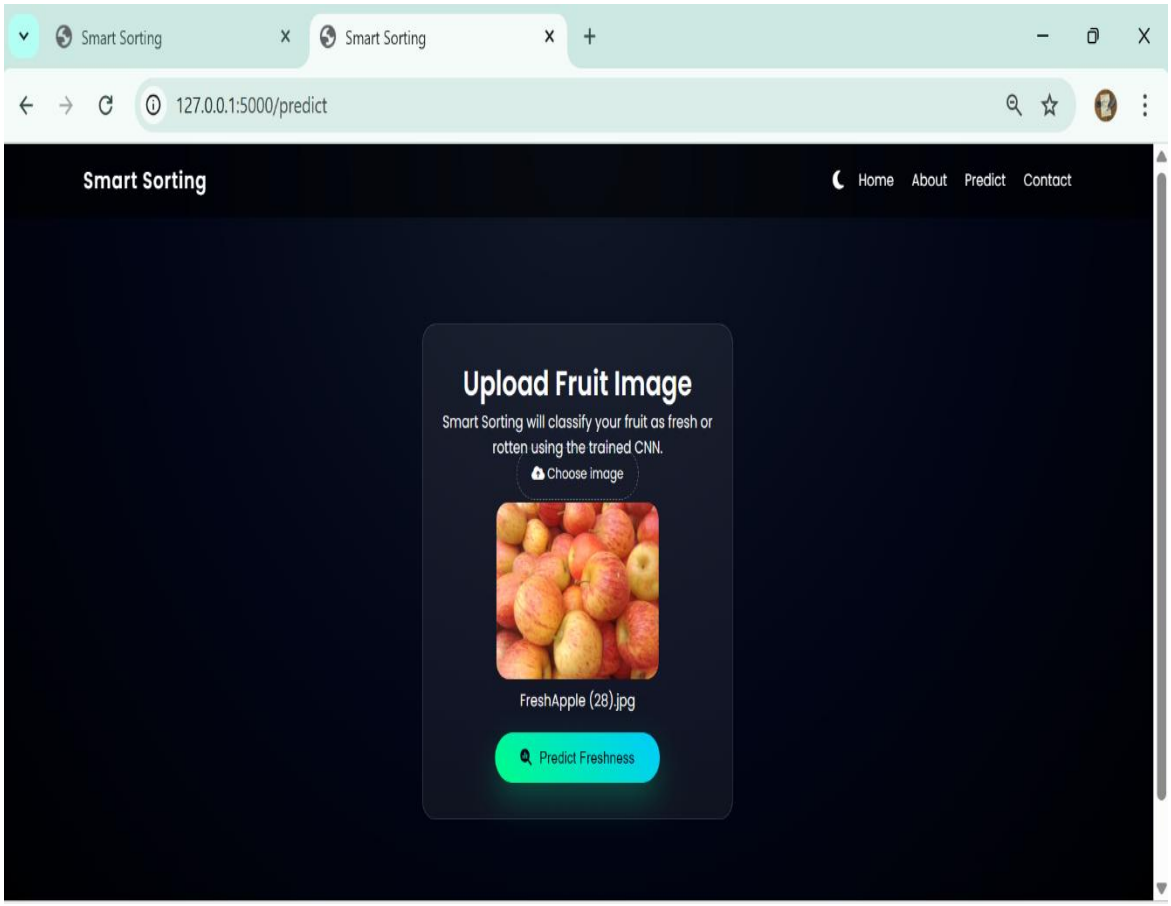
Outputs:

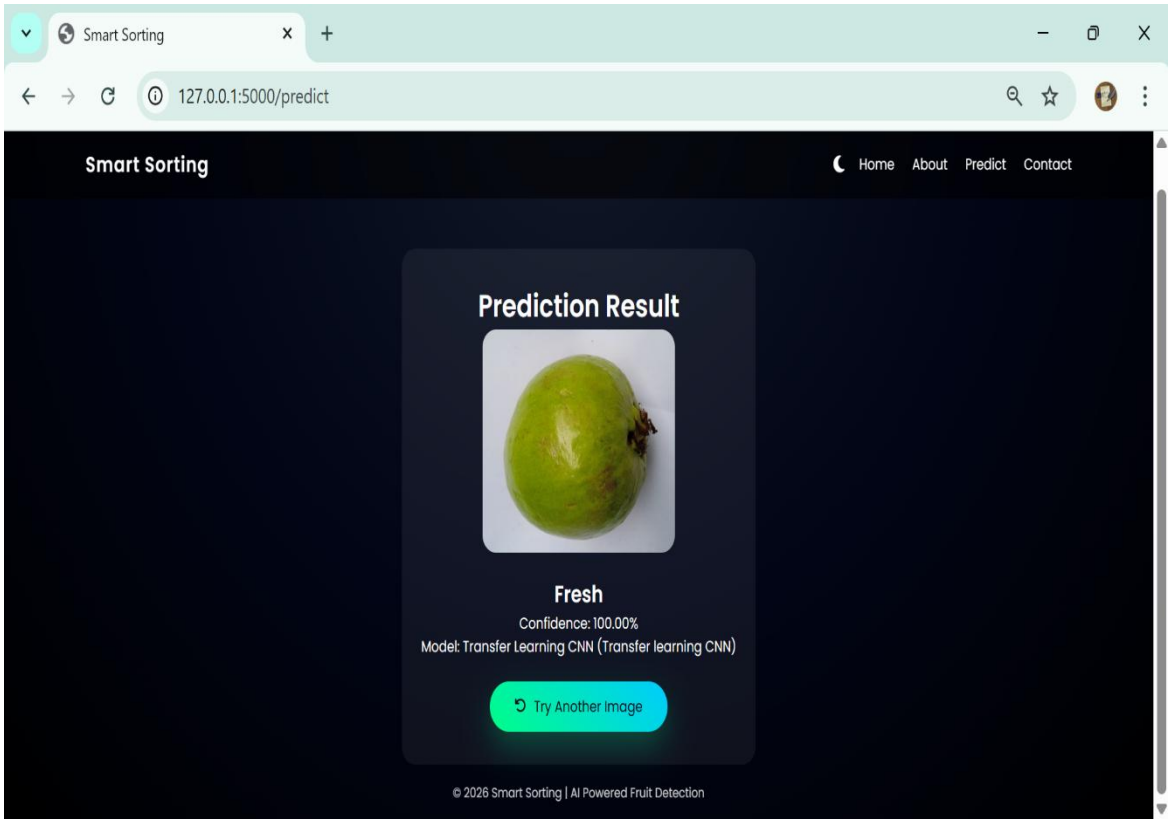
UI screenshots (Home, About, Predict, Result, Contact).




Smart Sorting
127.0.0.1:5000/about
Smart Sorting
Home
About
Predict
Contact
ABOUT
Learn More About Smart Sorting
Smart Sorting is an AI-powered system that uses transfer learning to identify rotten fruits and vegetables from images captured in the supply chain.
By automating visual inspection, our solution helps farmers, warehouses, and retailers maintain consistent quality while reducing manual effort and food waste.
Grades fruits and vegetables based on ripeness, color, and surface defects.
Provides continuous monitoring from farm to shelf with instant freshness classification.
Integrates easily with existing cameras, conveyors, and warehouse sorting equipment.
94.6%
MODEL ACCURACY
Evaluated on a held-out validation set using transfer-learning CNN.
4
FRUIT CLASSES
Includes fresh and rotten classes for multiple fruits and vegetables.
3200
IMAGES TRAINED
Labeled images collected from markets and public datasets. [web:6]
24/7
MONITORING
Designed for around-the-clock operation in cold-storage and warehouses.
© 2026 Smart Sorting | AI Powered Fruit Detection


Smart Sorting
127.0.0.1:5000/predict
Smart Sorting
Home
About
Predict
Contact
Upload Fruit Image
Smart Sorting will classify your fruit as fresh or rotten using the trained CNN.
Choose image
Predict Freshness
© 2026 Smart Sorting | AI Powered Fruit Detection


Smart Sorting
Smart Sorting
127.0.0.1:5000/predict
Smart Sorting
Home
About
Predict
Contact
Upload Fruit Image
Smart Sorting will classify your fruit as fresh or rotten using the trained CNN.
Choose image
FreshApple (28).jpg
Predict Freshness


Smart Sorting
127.0.0.1:5000/predict
Smart Sorting
Home
About
Predict
Contact
Prediction Result
Fresh
Confidence: 100.00%
Model: Transfer Learning CNN (Transfer learning CNN)
Try Another Image
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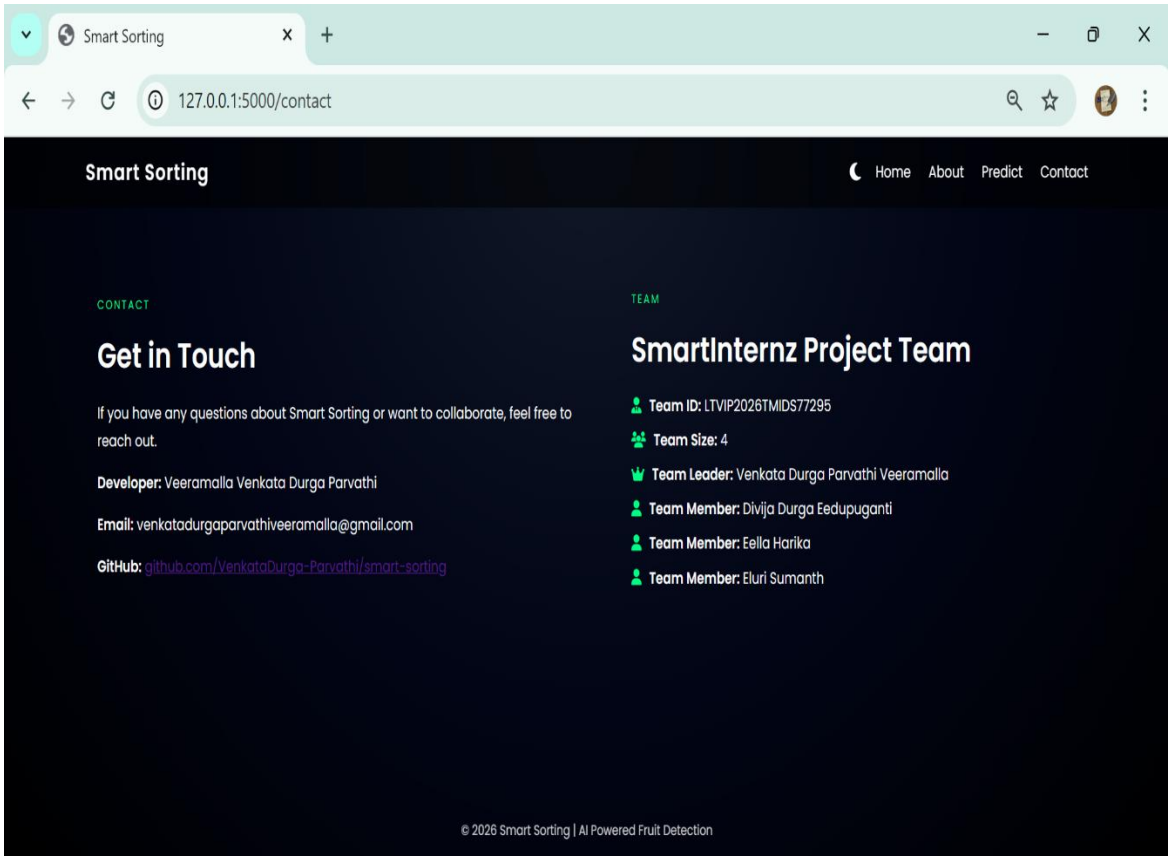
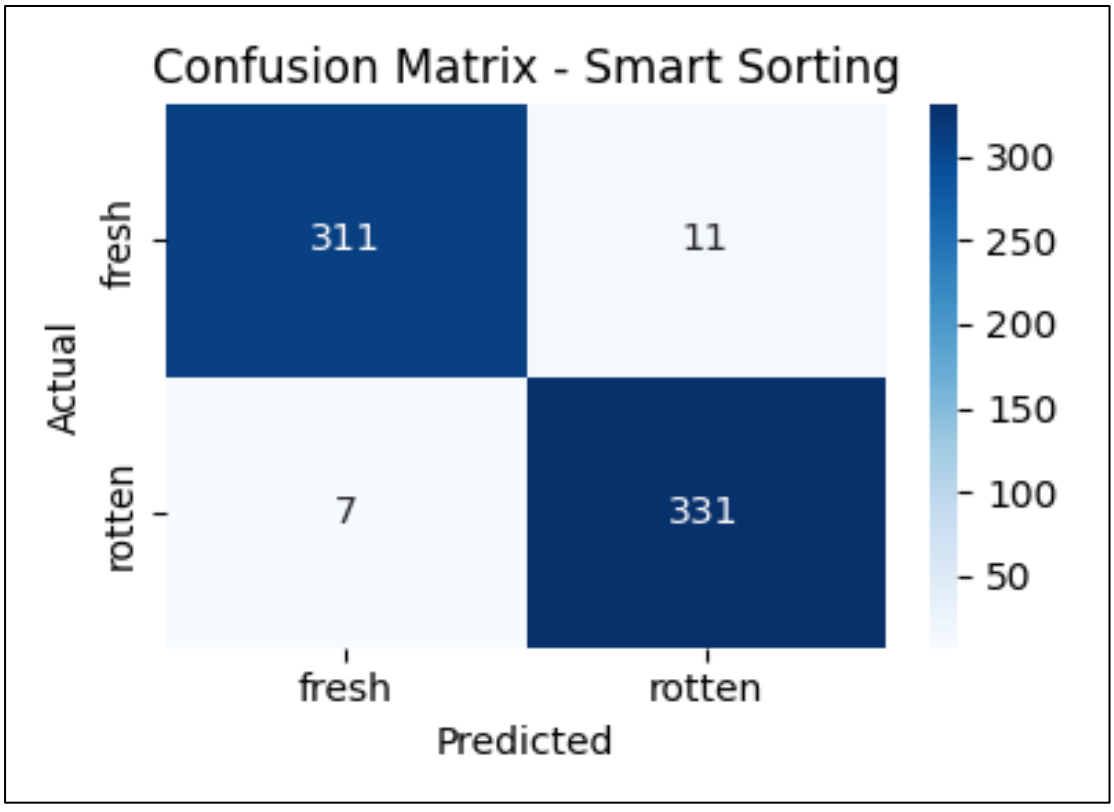
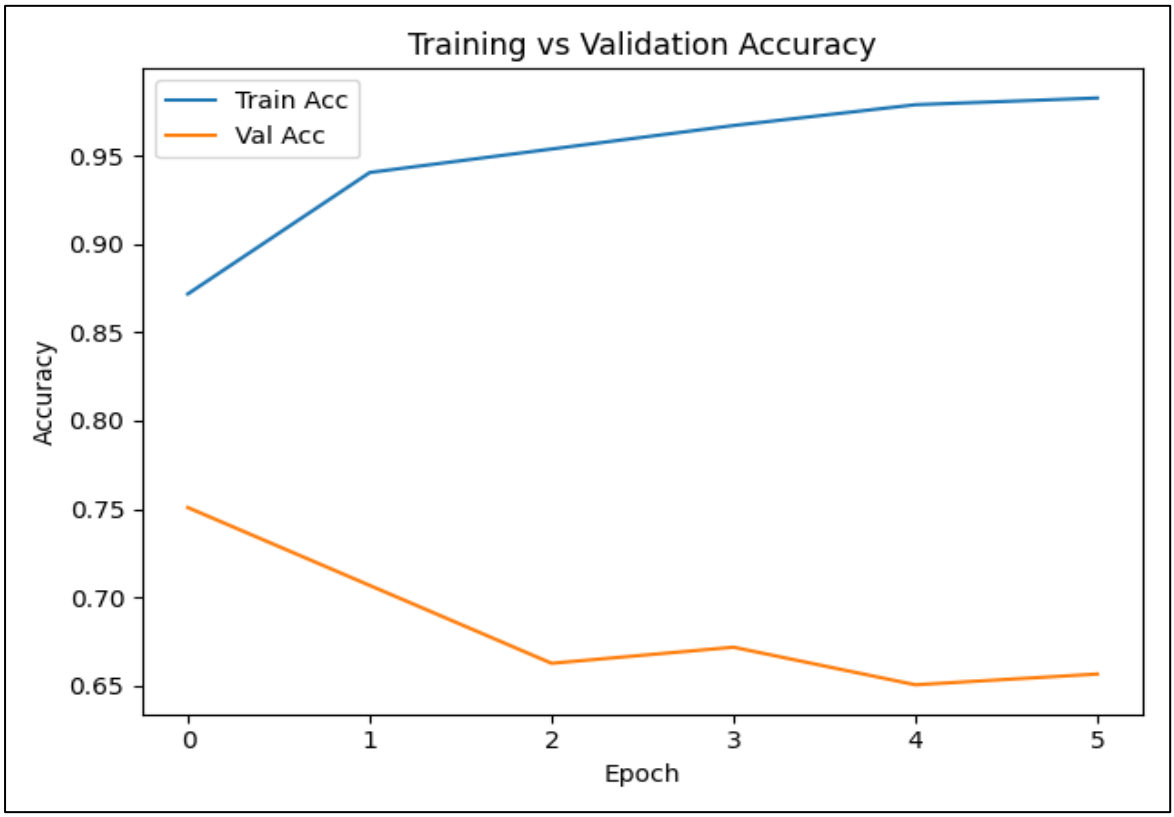


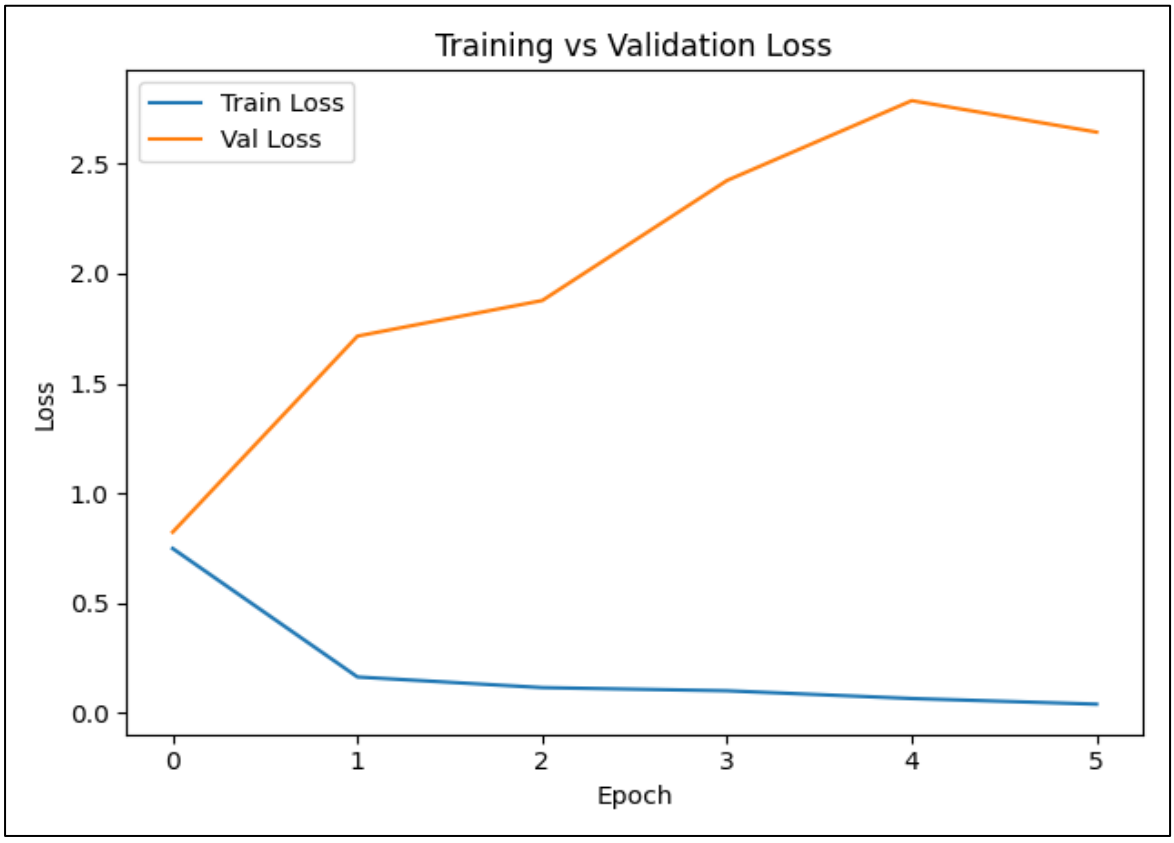
Confusion matrix and classification report:



Tuned Accuracy Curve:



Tuned Loss Curve:



Burndown chart :