User Acceptance Testing (UAT) Template

Date	28 June 2025
Team ID	LTVIP2025TMID43759
Project Name	HematoVision: Advanced Blood Cell Classification Using Transfer Learning
Maximum Marks	2 Marks

Project Overview:

Project Name: HematoVision: Advanced Blood Cell Classification Using Transfer Learning

Project Description: This project involves developing a deep learning-based image classification model to detect and classify different blood cell types (Neutrophil, Lymphocyte, Monocyte, Eosinophil) from microscopic images. It leverages pre-trained transfer learning models such as ResNet and EfficientNet to enhance classification accuracy and integrates a Flask web interface for user interaction.

Project Version: v1.0

Testing Period: 20 June 2025 to 28 June 2025

Testing Scope:

List of Features and Functionalities to be Tested:

1. Image upload functionality
2. Blood cell type prediction using .pt model
3. Real-time result display on Flask web app
4. Handling of invalid inputs (non-image files, corrupted images)
5. Display of model confidence/probability score
6. Mobile responsiveness of web interface

List of User Stories or Requirements to be Tested:

1. As a lab technician, I want to upload an image and get the predicted blood cell type.
2. As a hematologist, I want a system that can identify blood cell types with high accuracy.
3. As a user, I want the system to warn me if the image is invalid or unreadable.

Testing Environment:

URL/Location: http://127.0.0.1:5000/

Credentials (if required): Not Required

Testing Model & Data Prediction :

Evaluating the model

For HematoVision, we have tested the system using the ResNet50 transfer learning model with the help of the predict() function. Images were passed through the model pipeline, and predictions were obtained for cell types, including Neutrophil, Lymphocyte, Monocyte, and Eosinophil. Confidence scores were validated to ensure accuracy and consistency.

Test Cases:

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-001	Upload valid blood cell image	Open app → Upload valid cell image → Click Predict	Cell type and confidence displayed	As Expected	Pass
TC-002	Upload non-image file	Upload .txt/.pdf file	Show "Invalid file type" message	Error Handles	Pass
TC-003	Upload corrupted image	Upload broken .jpg file	Show "Cannot read image" message	Message Displayed	Pass
TC-004	Empty form submission	Click Predict without uploading a file	Show "Please upload an image" message	Prompt shown	Pass
TC-005	Upload large resolution image	Upload HD cell image	App resizes and classifies correctly	Successfully done	Pass
TC-006	Blood cell type prediction confidence > 90%	Upload clearly labeled cell image	Confidence shown above 90%	Accuracy validated	Pass
TC-007	Web UI	Open app on	Responsive	UI adjusts	Pass

	responsiveness	mobile browser	layout	well	

Bug Tracking:

Bug ID	Bug Description	Steps to reproduce	Severity	Status	Additional feedback
BG-001	Incorrect blood cell type returned	Upload image under poor lighting	Medium	Open	May require additional data augmentation
BG-002	Model loads slowly	Start server for first time	Low	In Progress	Consider model quantization
BG-003	Page not loading on Firefox	Open on older Firefox version	Good	Closed	Works after browser update

Sign-off:

Tester Name: LASA SRAVANI

Date: 28 June 2025

Signature: L.Sravani

Notes:

- Ensure that all test cases cover both positive and negative scenarios.
- Encourage testers to provide detailed feedback, including suggestions for improvement.
- Bug tracking should include details such as severity, status, and steps to reproduce.
- Obtain sign-off from both the project manager and product owner before deployment.