User Acceptance Testing (UAT) Template

Date	16 February 2026
Team ID	LTVIP2026TMIDS62229
Project Name	Exploratory Analysis of Rain Fall Data in India for Agriculture
Maximum Marks	10 Marks

Project Overview

Project Name: Rainfall Prediction System

Project Description:
The Rainfall Prediction System is a Machine Learning-based web application developed using Python, Flask, and Random Forest Classifier. The system predicts whether it will rain tomorrow based on weather parameters such as MinTemp, MaxTemp, Rainfall, WindGustSpeed, and Humidity3pm. The model is trained using historical weather data and deployed through a web interface.

Project Version: Version 1.0

Testing Period: 10 Feb 2026 to 16 Feb 2026

Testing Scope

Features and Functionalities Tested:

- User input validation (numeric weather parameters)
- Prediction functionality
- Probability calculation
- Model accuracy verification
- Web interface rendering
- Error handling mechanism
- Model loading & scaler integration
- Response time performance
- Deployment on local server

User Stories Tested:

- As a user, I can enter weather parameters.
- As a user, I can click the Predict button.
- As a user, I can view rainfall prediction result.
- As a user, I can see prediction probability percentage.
- As a user, I receive proper error messages for invalid input.

Testing Environment

URL/Location: http://127.0.0.1:5000

Technology Stack:

- Python 3.x
- Flask
- Scikit-learn
- RandomForestClassifier
- HTML, CSS

Credentials: Not required (Open access web application**)**

Test Cases:

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-001	Valid Input Prediction	Enter valid numeric values → Click Predict	Displays rain prediction with probability	Prediction displayed correctly	Pass
TC-002	Invalid Text Input	Enter text in numeric field	Error message displayed	Error message displayed	Pass
TC-003	Empty Field Submission	Leave a field empty → Click Predict	System prevents submission or shows error	Error shown	Pass
TC-004	Probability Calculation	Enter known dataset values	Displays correct probability percentage	Correct probability displayed	Pass
TC-005	Model Loading	Start application	Model loads without error	Model loaded successfully	Pass
TC-006	Performance Test	Click predict multiple times	Response time under 3 seconds	Avg 1.2 sec	Pass
TC-007	UI Rendering	Open home page	UI loads properly with input fields	UI displayed correctly	Pass

Bug Tracking:

Bug ID	Bug Description	Steps to Reproduce	Severity	Status	Additional Feedback
BG-001	StandardScaler feature mismatch error	Train with 16 features → Deploy with 5 features	High	Closed	Fixed by retraining model with 5 features
BG-002	FileNotFoundError for scaler.pkl	Run app without saving scaler	Medium	Closed	Saved scaler in correct directory
BG-003	UnicodeDecodeError while reading dataset	Load CSV without proper encoding	Medium	Closed	Fixed using proper encoding

Sign-off:

Tester Name: Atmakuri Pradeep

Date: 16 Feb 2026

Signature: A.Pradeep

Notes

- All test cases include both positive and negative scenarios.
- Input validation and model integration were thoroughly tested.
- Bug tracking includes severity level and reproduction steps.
- Final testing approval obtained before deployment.