

User Acceptance Testing (UAT) Template

Date: 8 January 2026

Team ID: LTVIP2026TMIDS83736

Project Name: Rising Waters: A Machine Learning Approach to Flood Prediction

Maximum Marks: 4 Marks

Project Overview:

Project Name: Rising Waters: A Machine Learning Approach to Flood Prediction

Project Description: Use Machine Learning (Classification Model) to predict flood probability based on 8 environmental and geographical parameters: monsoon intensity, topography, drainage systems, river management, deforestation, urbanization, climate change impact, and dam status.

Project Version: 1.0.0

Testing Scope:

Functionalities:

- View project introduction page
- Input flood parameters manually
- Generate flood predictions
- Display prediction results
- Navigate between pages

Requirements:

- Usability
 - Reliability
 - Accuracy
 - Performance
 - Data validation
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Testing Environment:

URL/Location: <http://localhost:5000>

Routes:

- / (Introduction page)
- /home (Home page)

- /index (Prediction page)

Credentials (if required): Not Applicable

Test Cases:

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-001	Load Homepage	1. Open browser 2. Navigate to http://localhost:5000 3. Verify intro page loads	Introduction page displays with project overview	Introduction page displayed successfully	Pass
TC-002	Navigate to Prediction Page	1. From homepage 2. Click link to prediction page 3. Verify prediction form loads	Prediction form with 8 input fields visible	Form displayed with all 8 parameters	Pass
TC-003	Input Validation - Valid Data	1. Go to prediction page 2. Enter valid values for all 8 parameters 3. Submit form	Form accepts data and processes prediction	Data accepted successfully	Pass
TC-004	Input Validation - Missing Data	1. Go to prediction page 2. Leave some fields empty 3. Submit form	Error message displayed or validation warning	Error message shown for missing fields	Pass
TC-005	ML Model Loading	1. Start Flask application 2. Check console logs 3. Verify model loads	floods.save and transform.save load without errors	Models loaded successfully on startup	Pass
TC-006	Flood Prediction - High Risk	1. Enter parameters indicating high flood risk 2. Submit form 3. Check result	Prediction shows "Flood" or high probability	Result: Flood probability 85%	Pass
TC-007	Flood Prediction - Low Risk	1. Enter parameters indicating low flood risk 2. Submit form 3. Check result	Prediction shows "No Flood" or low probability	Result: No flood detected	Pass

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-008	Response Time	1. Submit prediction request 2. Measure time to display result	Result displayed within 3 seconds	Response time: 2.1 seconds	Pass
TC-009	CSS Styling	1. Visit all pages 2. Check visual appearance 3. Verify styling	All pages styled correctly with styles.css	All pages properly styled	Pass
TC-010	Navigation - Home to Prediction	1. Start on homepage 2. Click prediction link 3. Verify navigation works	Prediction page loads correctly	Navigation successful	Pass
TC-011	Navigation - Back to Home	1. From prediction page 2. Click home/back link 3. Verify navigation	Returns to homepage	Navigation successful	Pass
TC-012	Multiple Predictions	1. Submit first prediction 2. Change parameters 3. Submit second prediction	Both predictions processed independently	Both predictions successful	Pass
TC-013	Prediction Accuracy	1. Test with known flood scenarios 2. Compare with actual outcomes 3. Calculate accuracy	Model accuracy > 85%	Accuracy: 93%	Pass
TC-014	Input Validation - Invalid Data Type	1. Enter text in numeric fields 2. Submit form	Error handling or validation message	Error handled gracefully	Pass
TC-015	Browser Compatibility	1. Open application in Chrome 2. Test in Firefox 3. Test in Edge	Works in all modern browsers	Compatible with all browsers tested	Pass

Bug Tracking:

Bug ID	Bug Description	Steps to Reproduce	Severity	Status	Additional Feedback
BG-001	Model file path error on first run	1. Clone repository 2. Run Flask app 3. Model files not found	High	Closed	Fixed by ensuring floods.save and transform.save are in Flask directory
BG-002	CSS not loading on some pages	1. Navigate to prediction page 2. Styles not applied	Medium	Closed	Fixed static folder path in Flask configuration
BG-003	Form validation missing for negative values	1. Enter negative numbers in input fields 2. Submit form 3. Prediction processes invalid data	Low	Closed	Added validation to reject negative values
BG-004	Prediction result page refresh causes error	1. Get prediction result 2. Refresh page (F5)	Low	Open	Need to handle POST request refresh properly
