WORK UPDATE

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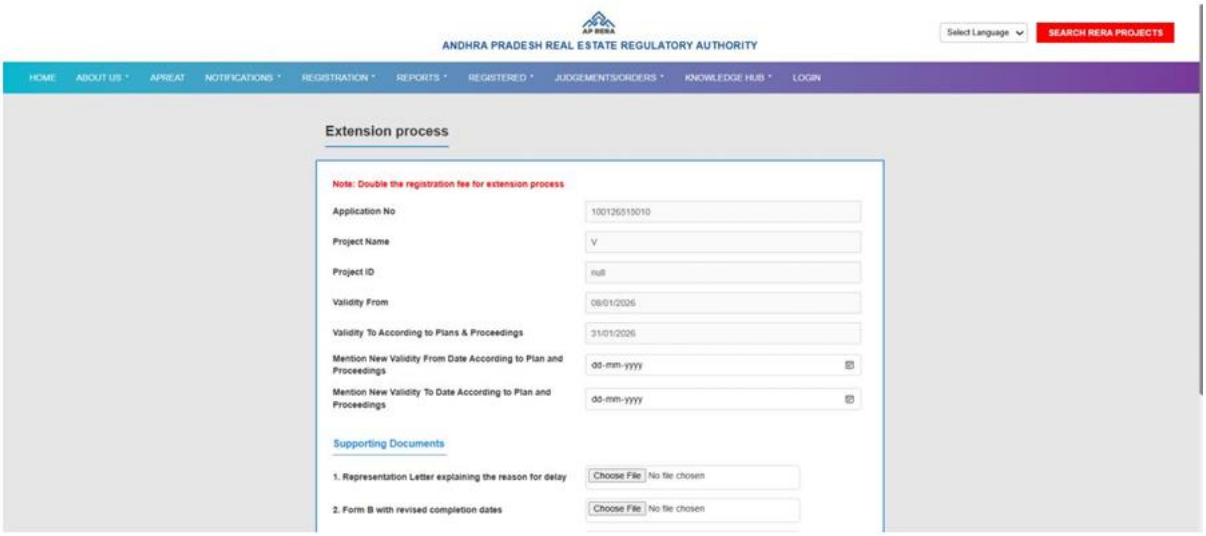
This document outlines the development activities, issue resolutions, enhancements, and testing completed for the Extension Module. The primary objective of the work was to ensure seamless authentication, accurate project data retrieval, and improved user navigation within the portal.

During the course of development, multiple backend and frontend alignment issues were identified and resolved. Special focus was given to login authentication using OTP, query optimization for project data retrieval, validation handling, and overall system stability. All updates were validated through structured testing to confirm functional accuracy and performance reliability.



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2. Issue Analysis and Data Retrieval Enhancement

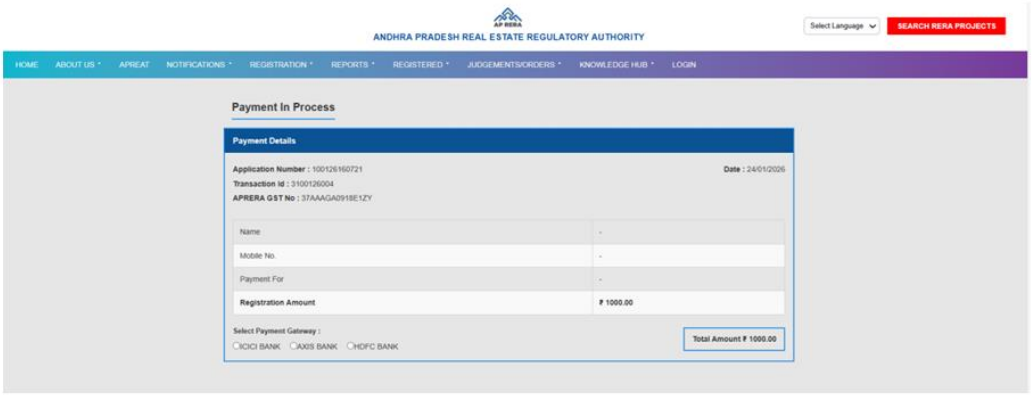
2.1 Problem Identification

While testing the Extension module login flow using PAN-based authentication, it was observed that certain valid project records were not appearing in the dashboard after successful login. This inconsistency affected data visibility and user workflow continuity.

2.2 Root Cause

Upon detailed analysis of the backend query logic, it was identified that the database query utilized a restrictive join condition. Because of this, projects without corresponding entries in

related tables were being excluded from the result set, even though they were valid and linked to the provided PAN.



2.3 Solution Implementation

To ensure complete and accurate data retrieval:

- The existing query structure was reviewed and optimized.
- Join logic was modified to prevent unnecessary filtering.
- Conditions were refined to ensure all eligible projects mapped to the PAN are fetched.
- The revised query was validated against multiple test cases to confirm correctness.

2.4 Outcome

After implementation:

- All valid projects linked to the PAN are now displayed correctly.
- No data loss or unintended filtering occurs.
- The dashboard reflects complete project information consistently.

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3. OTP Login Flow Development and Integration

3.1 Authentication Workflow Improvement

The OTP-based login mechanism was fully integrated and stabilized within the Extension module. The objective was to ensure secure, reliable, and user-friendly authentication.

3.2 Key Enhancements

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The following improvements were implemented:

- Proper OTP generation and validation handling.
- Prevention of login continuation without valid OTP verification.
- Handling of expired or incorrect OTP submissions.
- Clear user feedback for failed authentication attempts.

3.3 PAN Validation Handling

During testing, scenarios were identified where invalid or unregistered PAN numbers caused inconsistent responses. To address this:

- Backend validation rules were reviewed.
- Frontend payload structure was aligned with backend requirements.
- Error responses were standardized.
- Meaningful validation messages were displayed to users.

This improved both system robustness and user experience.

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4. Frontend–Backend Synchronization

4.1 Payload Structure Alignment

A mismatch between frontend request parameters and backend validation rules was identified. This was resolved by:

- Reviewing API request schemas.
- Updating the frontend payload structure to match backend expectations.
- Ensuring mandatory fields are passed correctly in every request.

4.2 Error Handling Optimization

Error handling was enhanced to cover the following scenarios:

- Invalid PAN input
- Incorrect OTP
- Missing mandatory parameters
- Unexpected server responses