# Phase 10: Rental Management System Enhancements and Fixes

### I. Overview

Phase 10 of the Rental Management system development will focus on improving the robustness and user experience of the "Create Rental" process. This includes addressing key limitations, particularly in inventory checking and error handling, and ensuring data integrity.

# II. Objectives

- 1. **Resolve the "No Copies Available" Rental Creation Failure:** Implement mandatory, accurate inventory checks *before* attempting to create a rental record to prevent failures like the one seen with "The Life of Pi."
- 2. **Improve Error Handling and User Feedback:** Replace generic system errors with clearer, more actionable error messages for common issues.
- 3. **Enhance Data Management and Visibility:** Ensure new and updated records are handled smoothly without unexpected interruptions.

### III. Detailed Breakdown of Tasks and Implementations

3.1 Test sequence

Create a Book record (Title, Author, Copies Available = 1).

Create a Student.

Use the LWC form to create a Rental (select Book & Student, set Rent Date = today, Due Date = today + 7).

After insert, verify Book status becomes Rented and Copies\_Available decreased by 1.

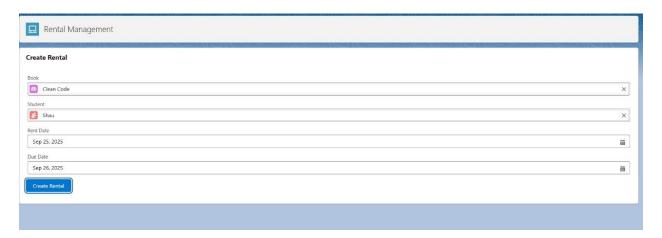
Update Rental  $\rightarrow$  set Status = Returned. Verify Book status becomes Available and Copies\_Available incremented.

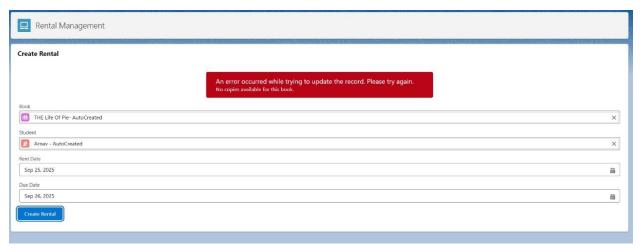
Create Rental with Due Date before Rent Date to confirm validation rule triggers.

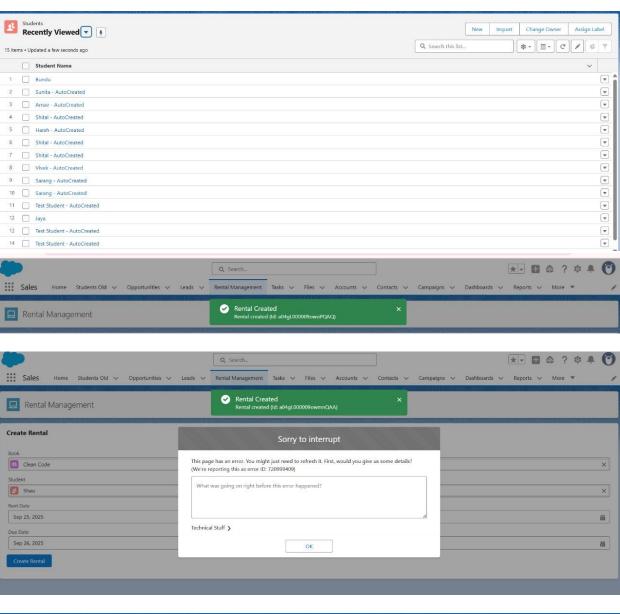
Create multiple rentals to test bulk behavior and error messages.

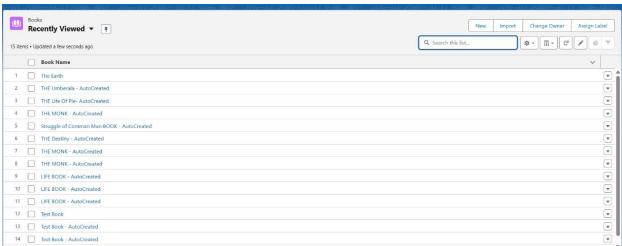
#### 3.2 Run Apex tests

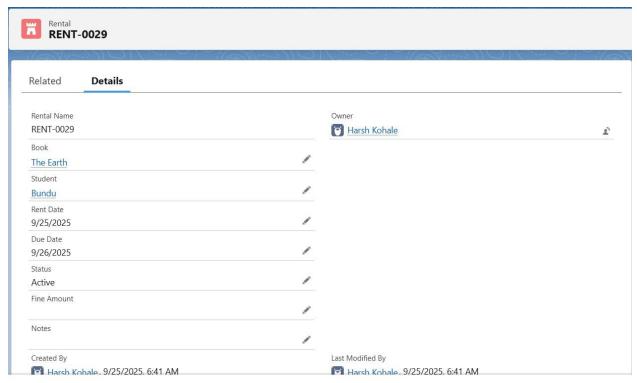
Setup  $\rightarrow$  Apex Test Execution  $\rightarrow$  run RentalTriggerHandlerTest  $\rightarrow$  ensure all tests pass and coverage adequate.











#### Y≡ To Do List

### IV. Success Criteria

- Users are prevented from attempting to rent a book with zero available copies.
- The system provides a **clear**, **informative error message** when a book is unavailable.
- The "Sorry to interrupt" error is **eliminated** after a successful rental creation.
- The available copy count on the Book record is always accurate post-rental.
- Successful rental creation navigates the user smoothly to the new Rental Detail page or a clean form.

## V. Tools and Technology

- Platform: Salesforce (Based on UI appearance)
- **Tools:** Salesforce Apex Triggers, Validation Rules, Lightning Web Components (LWC) or Aura Components for UI/Controller logic.
- Personnel: Developer, QA Analyst, System Administrator.