**Section 7.0: User Testing & Validation – Quality Assurance Phase**

**Overview**

User Testing and Validation is an essential phase in the Salesforce development lifecycle. In the RTC Public Transport CRM project, a robust testing framework was implemented to validate each functional component, business rule, and user experience. This process ensured that the solution worked seamlessly for its intended users—drivers, conductors, station managers, finance officers, and administrators.

End-user feedback, validation scripts, and real-world scenario testing were combined to confirm readiness for production deployment.

**Testing Approach**

| **Testing Type** | **Description** |
| --- | --- |
| Unit Testing | Tested individual Flows, Validation Rules, and Apex Triggers in isolation |
| Functional Testing | Ensured that each feature worked as intended under normal usage conditions |
| Regression Testing | Verified that new changes didn’t break previously working features |
| Role-Based Testing | Tested the interface and permissions for each user profile (e.g., Driver, Admin) |
| UAT (User Acceptance Testing) | Final verification by a sample group of end users to validate business usability |

**Sample Test Cases Executed**

**Test Case 1: Trip Completion Validation**

* **Objective**: Ensure trip cannot be completed without assigning a driver and conductor
* **Steps**:
  1. Create a new trip record without a driver or conductor
  2. Attempt to save
  3. Verify validation rule blocks the save
* **Expected Result**: Error message displayed: "A driver must be assigned for every trip."

**Test Case 2: Fare Calculation Accuracy**

* **Objective**: Confirm auto-calculation of total fare
* **Steps**:
  1. Create Fare with 20 passengers and ₹15 fare per passenger
  2. Save and review Total Fare field
* **Expected Result**: Total Fare = ₹300

**Test Case 3: Dashboard Visibility for Finance Officer**

* **Objective**: Ensure only relevant dashboards are visible
* **Steps**:
  1. Login as Finance Officer
  2. Access Dashboard Tab
  3. Verify access to Finance Dashboard only
* **Expected Result**: Transport dashboards hidden; only financial reports and widgets are visible

**Testing Tools & Environment**

* **Salesforce Sandbox**: Full-featured testing environment for all user roles
* **Change Sets**: Deployed tested components between environments
* **Incognito Browser**: Used to simulate clean session and multiple user types
* **Test Users**: Configured for each role to validate field visibility, access rights, and UI interactions

A diagram of a software development process

AI-generated content may be incorrect.A diagram with text and blue rectangles

AI-generated content may be incorrect.

**Validation Metrics and Success Criteria**

* 100% pass rate for critical test cases (Trips, Fares, Shifts)
* < 3% defect recurrence post-deployment
* All business rules successfully enforced via validations/triggers
* Positive user feedback during UAT phase

**Conclusion**

Testing and validation were pivotal in certifying the RTC Salesforce CRM for production release. With thorough test coverage and scenario-based validations, the system was proven reliable, secure, and user-friendly. By leveraging real-time role testing and rigorous functional validation, the project ensured operational excellence before go-live.