### **Requirement Traceability Matrix (RTM)**

**Project Name:** OrangeHRM Cypress Test Automation Project  
**Date:** March 2025  
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### **1. Purpose**

The purpose of this RTM is to ensure all critical functionalities of the OrangeHRM platform are thoroughly validated through structured test coverage. It establishes a clear connection between requirements, test cases, and execution status, ensuring alignment with project objectives and quality assurance goals.

### **2. Key Features**

1. **User Authentication:** Verify login, logout, and password recovery processes.
2. **Session Control:** Ensure session expiry and secure logout handling.
3. **Admin and Employee Roles:** Validate access control, permissions, and restricted views.
4. **Dashboard Functionality:** Confirm the availability of key administrative operations.
5. **Employee Data Management:** Test employee CRUD operations.
6. **Leave and Attendance Tracking:** Validate leave requests and time-tracking functions.
7. **Multi-Language Support:** Ensure translations are accurate and consistent.
8. **Cross-Device Compatibility:** Test responsiveness on desktop, tablet, and mobile.

### **3. Testing Scope**

#### **Login and Security**

* **Positive Tests:** Verify successful login with valid credentials.
* **Negative Tests:** Ensure errors display correctly for invalid credentials or blank fields.
* **Password Recovery:** Validate email triggers and reset workflows.
* **Session Timeout:** Ensure auto-logout after inactivity.

#### **Core Functionalities**

* **Admin Dashboard:** Validate module access, user permissions, and data integrity.
* **Employee Records:** Ensure proper creation, update, deletion, and retrieval of employee data.
* **Leave Management:** Test end-to-end leave request submissions and approval flows.
* **Time Tracking:** Confirm clock-in/out behavior and data recording.

#### **Compatibility and Usability**

* **Responsive Design:** Test performance and UI consistency across devices.
* **Multi-language Validation:** Ensure language translations are accurate.

### **4. Requirement Traceability Matrix**

| **Req ID** | **Requirement** | **Priority** | **Test Type** | **Status** |
| --- | --- | --- | --- | --- |
| R1 | Validate successful login with valid credentials | High | Functional/Automation | Open |
| R2 | Verify error messages for invalid credentials | High | Functional/Automation | Open |
| R3 | Check password recovery and email notification | Medium | Usability/Manual | Open |
| R4 | Test session expiration after inactivity | High | Functional/Manual | Open |
| R5 | Verify admin role permissions | High | Functional/Automation | Open |
| R6 | Test employee role restrictions | High | Functional/Automation | Open |
| R7 | Validate admin dashboard accessibility | Medium | Functional/Automation | Open |
| R8 | Ensure mobile-friendly, responsive UI | Medium | Compatibility/Manual | Open |
| R9 | Test language localization for multiple languages | Low | Functional/Manual | Open |
| R10 | Automate regression testing for login | High | Automation | Open |
| R11 | Validate CRUD operations on employee records | Medium | Functional/Automation | Open |
| R12 | Test leave request and approval workflows | Medium | Functional/Automation | Open |
| R13 | Confirm clock-in/clock-out time tracking behavior | Low | Functional/Automation | Open |

### **5. Manual and Automation Testing**

#### **Manual Testing**

1. **Exploratory Testing:**
   * Test login with valid and invalid credentials.
   * Ensure session timeout functions properly.
   * Verify email delivery for password reset requests.
2. **Test Case Examples:**
   * **TC001:** Enter valid credentials and validate successful login.
   * **TC002:** Input invalid credentials and confirm the error message appears.
   * **TC003:** Trigger password recovery and validate email content.

#### **Automation Testing**

1. **Cypress Framework:**
   * Implement modular, reusable test scripts with the POM structure.
   * Automate regression for login, employee management, and dashboard functionalities.
2. **Custom Commands:**
   * Integrate reusable commands for login, navigation, and form submissions.
   * Ensure dynamic element handling (e.g., shadow DOM, pop ups).

### **6. Tools and Technologies**

* **Manual Testing Tools:** XMind (mind map), Excel (test case documentation).
* **Automation Testing Tools:** Cypress, Mocha.
* **Bug Tracking:** Jira, Zephyr.
* **Performance Testing Tools:** Chrome DevTools.

### **7. Conclusion**

The RTM defines a complete, structured approach to validating OrangeHRM’s essential functionalities. It ensures that each requirement is covered by one or more test cases, ensuring consistency, reliability, and robustness in the platform’s performance. With a blend of manual and automated testing, this strategy guarantees high test coverage, traceability, and optimized execution.

### **8. Approval**

| Role | Name | Signature | Date |
| --- | --- | --- | --- |
| Test Engineer | Thoorpati Swathi | Swathi | 22-03-2025 |
| QA Lead | Shiva kumar sir | - | 24-03-2025 |