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| Requirements Traceability Matrix (RTM)  Project Name: Orange HRM(web application) |

**OrangeHRM**

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| **Prepared By: Atul Pal, Paraskumar Zumbarlal Sanghvi**  **Date: 18-01-2025** |

**Purpose**

This RTM ensures that all functionalities, test cases, and requirements for the OrangeHRM platform are effectively validated. It aligns the testing process with project goals to confirm coverage and traceability.

**Key Functionalities to Focus**

1. **User Login:** Authentication testing for valid/invalid credentials.
2. **Forgot Password:** Validation of password recovery and email triggers.
3. **Session Management:** Session expiry and logout behavior testing.
4. **Admin Dashboard Access:** Ensure authorized access to HR functionalities.
5. **Role-Based Access Control:** Verification of permissions for admins and employees.
6. **Multi-Language Support:** Functional testing across supported languages.
7. **Responsive Design:** Validation of performance across devices and screen sizes.

**Testing Scope**

**Login and Authentication Process**

* **Usability Testing:** Ensure the login form is user-friendly with clear error messages.
* **Functionality Testing:** Test login with various scenarios (valid, invalid, expired session, etc.).
* **Performance Testing:** Assess response time under varying loads.
* **Compatibility Testing:** Validate login functionality across multiple browsers and devices.

**Broader Functionalities**

* **Employee Management:** Testing CRUD (Create, Read, Update, Delete) operations for employee records.
* **Leave Management:** Validation of leave request workflows.
* **Time Tracking:** Testing clock-in/out features.
* **Dashboard:** Verify report generation and admin functionalities.

**Traceability Table**

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| Requirement ID | Description | Priority | Test Type | Status |
| R1 | Validate login with valid credentials | High | Functional/Automation | Pending |
| R2 | Validate login with invalid credentials | High | Functional/Automation | Pending |
| R3 | Test password recovery functionality | Medium | Usability/Manual | Pending |
| R4 | Check session expiry after inactivity | High | Functional/Manual | Pending |
| R5 | Validate role-based access control | High | Functional/Automation | Pending |
| R6 | Test admin dashboard functionality | High | Functional/Automation | Pending |
| R7 | Ensure responsive design on mobile devices | Medium | Compatibility/Manual | Pending |
| R8 | Validate multi-language support | Low | Functional/Manual | Pending |
| R9 | Automate login regression testing | High | Automation | Pending |
| R10 | Test employee record management | Medium | Functional/Automation | Pending |
| R11 | Validate leave management workflows | Medium | Functional/Automation | Pending |
| R12 | Test time-tracking features | Low | Functional/Automation | Pending |

**Manual and Automation Testing**

**Manual Testing**

1. **Exploratory Testing:**
   * Test login functionality with valid and invalid credentials.
   * Validate session expiration and logout.
   * Verify password reset triggers email notifications.
2. **Test Case Examples:**
   * TC001: Enter valid credentials and confirm successful login.
   * TC003: Trigger password recovery and verify email content.

**Automation Testing**

1. **Selenium Framework:**
   * Automate regression testing for login functionality.
   * Validate workflows for employee management, leave management, and time tracking.
2. **Cucumber Framework with POM:**
   * Implement Page Object Model (POM) for modular test scripts.
   * Create scenarios for seamless authentication and role-based access control.

**Tools and Technologies**

* **Manual Testing Tools:** Excel for tracking test cases.
* **Automation Testing Tools:** Selenium WebDriver, Cucumber.
* **Bug Tracking:** JIRA.
* **Performance Testing Tools:** Lighthouse, Browser Inspect.

**Conclusion**

This RTM outlines a structured approach to testing OrangeHRM’s key functionalities, ensuring reliability, usability, and security. The detailed test cases and traceability matrix enable comprehensive coverage of all critical features, promoting a robust and error-free platform.