Test Plan Document

1. Introduction

This document provides a comprehensive test plan for the Online Task Management System, JEERA. It includes detailed test cases and a traceability matrix to ensure all business requirements are verified and validated.

2. Scope

The scope of this test plan includes:

* User Authentication and Authorization
* Task Creation and Assignment
* Task Management and Tracking
* Automatic Updates
* System Usability and Interface
* Data Security and Privacy

3. Test Cases

3.1 User Authentication and Authorization

Test Case 1: User Login

Description: Verify that a user can log in with valid credentials.

Preconditions: User has an account.

Test Steps:

* Navigate to the login page.
* Enter valid username and password.
* Click on the "Login" button.

Expected Result: User is logged in and redirected to the dashboard.

Test Case 2: User Login with Invalid Credentials

Description: Verify that a user cannot log in with invalid credentials.

Preconditions: User enters incorrect username or password.

Test Steps:

* Navigate to the login page.
* Enter invalid username or password.
* Click on the "Login" button.

Expected Result: User receives an error message indicating invalid credentials.

Test Case 3: Automatic Sign Out on IP Change

Description: Verify that the system automatically signs out users with sudden IP-address changes.

Preconditions: User is logged in.

Test Steps:

* Log in to the system.
* Change the IP address (simulate a sudden IP change).

Expected Result: User is automatically signed out, and redirected to the login page.

Test Case 4: Role-Based Access Control (RBAC)

Description: Verify that users have appropriate permissions based on their roles.

Preconditions: User roles are defined (admin, manager, team member).

Test Steps:

* Log in as a "user" and attempt to add/remove other users (admin functionality).

Expected Result: Users can only access functionalities permitted by their roles. User will only be able to move/create tasks.

3.2 Task Creation and Assignment

Test Case 5: Create New Task

Description: Verify that a user can create a new task.

Preconditions: User is logged in.

Test Steps:

* Navigate to the task creation page.
* Enter task details (title, description, due date).
* Click on the "Create Task" button.

Expected Result: Task is created successfully and appears in the task list.

Test Case 6: Move Task Between States

Description: Verify that a user can move tasks between various states (to-do, in-progress, done).

Preconditions: Task exists, and user is logged in.

Test Steps:

* Navigate to the task details page.
* Move the task from "To Do" to "In Progress", or vice versa.

Expected Result: Task status is updated successfully and remains in the new column when the page refreshes.

3.3 Task Management and Tracking

Test Case 7: View Tasks on Dashboard

Description: Verify that a user can view their assigned tasks and their respective statuses on the dashboard.

Preconditions: User is logged in, and tasks are assigned.

Test Steps:

* Navigate to the dashboard.

Expected Result: User can see a list of their tasks with clear status indications.

Test Case 8: Update Task Details

Description: Verify that a user can update task details, including status and progress.

Preconditions: Task exists, and user is logged in.

Test Steps:

* Navigate to the dashboard.
* Click on a task to edit the task details (title, description, due date).
* Click on the "Update Task" button.

Expected Result: Task details are updated successfully.

3.4 Automatic Updates

Test Case 9: GUI Displays latest Task Information

Description: Verify that the GUI updates with the latest task information for all users.

Preconditions: Task status or details are updated.

Test Steps:

* Update a task.
* Check the GUI for the updated task information.
* Alternative: Have another user update tasks on their dashboard and check that changes reflect on yours.

Expected Result: GUI displays the latest task information.

Test Case 10: Real-Time Task and Status Updates

Description: Verify that the system provides real-time updates of tasks and statuses.

Preconditions: Task status or details are updated.

Test Steps:

* Update a task.
* Check for real-time updates on the dashboard.
* Alternative: Have another user update tasks on their dashboard and check that changes reflect on yours.

Expected Result: Task updates appear in real-time for all users.

3.5 System Usability and Interface

Test Case 11: Easy-to-Navigate Interface

Description: Verify that the system interface is easy to navigate and complies with key material design principles.

Preconditions: System is implemented.

Test Steps:

* Navigate through different sections of the system if applicable.
* Evaluate the interface for ease of navigation and usability.

Expected Result: Interface is intuitive and easy to navigate.

Test Case 12: Accessibility on Various Devices

Description: Verify that the system is accessible on various devices.

Preconditions: System is implemented.

Test Steps:

* Access the system on a desktop.
* Access the system on a tablet.
* Access the system on a smartphone.

Expected Result: System is accessible and functional on all devices.

Test Case 13: Multi-Language Support

Description: Verify that the system supports multi-language options and stores information as-is after sanitation.

Preconditions: Localization for state columns is implemented.

Test Steps:

* Enter task information in different languages.
* Save the task.
* Retrieve and verify the task information.

Expected Result: Task information is stored and displayed correctly in the entered languages.

3.6 Data Security and Privacy

Test Case 14: Secure Data Storage and Transmission

Description: Verify that all user data is stored and transmitted securely.

Preconditions: Data security measures are implemented.

Test Steps:

* Enter and save user data.
* Monitor data transmission and storage.

Expected Result: Data is transmitted and stored securely, adhering to data protection regulations.

Test Case 15: Task and User Activity Logging

Description: Verify that the system stores all tasks and user activities for accountability and non-repudiation.

Preconditions: Activity logging is implemented.

Test Steps:

* Perform various actions (create, update, delete tasks).
* Check the activity logs.

Expected Result: All actions are logged accurately.

4. Traceability Matrix

Test Case ID Business Requirement ID Description

TC-01 BR-01 User Login

TC-02 BR-01 User Login with Invalid Credentials

TC-03 BR-02 Automatic Sign Out on IP Change

TC-04 BR-03 Role-Based Access Control (RBAC)

TC-05 BR-04 Create New Task

TC-06 BR-05 Move Task Between States

TC-07 BR-07 View Tasks on Dashboard

TC-08 BR-08 Update Task Details

TC-09 BR-10 GUI Updates with Latest Task Information

TC-10 BR-11 Real-Time Task and Status Updates

TC-11 BR-14 Easy-to-Navigate Interface

TC-12 BR-15 Accessibility on Various Devices

TC-13 BR-16 Multi-Language Support

TC-14 BR-17 Secure Data Storage and Transmission

TC-15 BR-18 Task and User Activity Logging