**Test Plan for Task Management System (TMS) Frontend**

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**1. Overview**

**1.1 Purpose**

This Test Plan outlines the approach, scope, objectives, schedule, deliverables, and resources required to perform testing for the Task Management System (TMS) frontend hosted at <https://fk-tms-frontend.vercel.app/>. The plan ensures the application meets the functional, performance, security, and usability requirements defined in the associated SRS, FRS, and BRS documents.

**1.2 Scope**

The Test Plan covers testing of the TMS frontend, a Single Page Application (SPA) built with a JavaScript framework (e.g., React, Next.js) and deployed on Vercel’s Frontend Cloud. Testing will focus on:

* User authentication and authorization
* Task management (CRUD operations)
* Collaboration features (comments, notifications, team calendar)
* UI/UX responsiveness and accessibility
* API integration and performance
* Deployment on Vercel

**Inclusions**

* Functional testing of all user interfaces and API interactions
* Performance testing under expected load (up to 1,000 concurrent users)
* Accessibility testing per WCAG 2.1 Level AA
* Browser compatibility testing (Chrome, Firefox, Safari, Edge)

**Exclusions**

* Backend API logic and database testing (assumed handled by backend team)
* Third-party OAuth provider authentication flows (tested at integration level)
* Offline functionality (not currently supported)

**1.3 Test Environments**

* **Development Environment**: Localhost with mock APIs for initial testing
* **Staging Environment**: Vercel preview deployments for pre-production testing
* **Production Environment**: <https://fk-tms-frontend.vercel.app/> for final validation
* **Hardware**: Desktop (min 1024px), tablet (min 768px), mobile (min 320px)
* **Software**: Latest versions of Chrome, Firefox, Safari, Edge with JavaScript enabled

**2. Test Strategy**

**2.1 Defect Reporting Procedure**

* Defects will be logged in a centralized tracking tool (e.g., Jira) with details: ID, description, severity, steps to reproduce, and screenshots.
* Severity levels: Critical, Major, Minor, Cosmetic
* Resolution process: Developer fixes, QA retests, and closure upon verification

**2.2 Roles/Responsibilities**

* **Test Manager**: Oversees test planning, execution, and reporting
* **QA Engineers**: Design test cases, execute tests, and report defects
* **Developers**: Provide fixes for identified issues
* **Product Owner**: Reviews test results and approves release

**2.3 Test Schedule**

* **Planning Phase**: June 13, 2025 - June 15, 2025
* **Test Case Development**: June 16, 2025 - June 18, 2025
* **Test Execution**: June 19, 2025 - June 25, 2025
* **Defect Resolution**: June 26, 2025 - June 28, 2025
* **Final Validation**: June 29, 2025 - June 30, 2025
* **Release**: July 1, 2025

**2.4 Test Deliverables**

* Test Plan document
* Test cases and scripts
* Test execution reports
* Defect reports
* Test summary report with pass/fail status
* [Placeholder for Screenshot: Test Execution Report Sample]

**3. Entry and Exit Criteria**

**3.1 Entry Criteria**

* All SRS, FRS, and BRS requirements are approved
* Development is 100% complete with code committed to the repository
* Staging environment is set up on Vercel with mock or live APIs
* Test cases are reviewed and approved by the QA team

**3.2 Exit Criteria**

* 100% of critical and major defects resolved
* 90% of minor and cosmetic defects resolved or deferred with approval
* All test cases executed with ≤5% failure rate
* Performance metrics met (load time ≤2s, 1,000 users with <5% error rate)
* Accessibility compliance verified per WCAG 2.1 Level AA
* Stakeholder sign-off on test summary report

**4. Suspension and Resumption Criteria**

* **Suspension**: Testing will be suspended if >20% of test cases fail due to environment issues or if critical defects impact >50% of functionality.
* **Resumption**: Testing resumes after environment stability is restored or critical defects are fixed, verified by a smoke test.

**5. Tools and Resources**

* **Tools**:
  + Selenium/WebDriver for automated UI testing
  + Postman for API testing
  + axe or Lighthouse for accessibility testing
  + JMeter for performance testing
  + Jira for defect tracking
* **Resources**:
  + 3 QA engineers (20 hours/week each)
  + 1 Test Manager (10 hours/week)
  + Access to Vercel staging and production environments

**6. Risks and Mitigations**

* **Risk 1**: Delays in backend API availability
  + **Mitigation**: Use mock APIs during initial testing
* **Risk 2**: Insufficient test coverage
  + **Mitigation**: Conduct peer reviews of test cases
* **Risk 3**: Performance issues under load
  + **Mitigation**: Perform early load testing and optimize frontend assets
* **Risk 4**: Browser compatibility bugs
  + **Mitigation**: Test across all target browsers using BrowserStack

**7. Approvals**

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* **Approved by**: [Muhammad Mubashir]
* **Date**: June 12, 2025