Software Test Plan (STP) - CMOT System

Project: Peer-to-Peer Tutoring Scheduler
Version: 1.0
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1. Introduction

Purpose: This document defines the test plan for the Peer-to-Peer Tutoring Scheduler v1.0. It outlines objectives, scope, strategy, resources, schedule, and responsibilities for testing.

Scope: Testing covers web-based scheduling features including slot creation, booking, conflict resolution, reminders, and admin oversight. External video-conferencing integrations are excluded.

References: SRS v1.0, Design Specifications v1.0, WCAG 2.1, PCI-DSS (where applicable).

Definitions:

* Slot: Predefined tutoring time interval.

* Conflict: Double-booking of a slot.

* Reminder job: Automated notification service.

2. Test Items

* User authentication & profile management

* Slot creation/editing

* Calendar browsing & booking

* Conflict resolution

* Notifications & reminders (email)

* Booking cancellation & history

* Admin dashboard & management

3. Features to be Tested

Mapped to SRS requirements:

- P2P-F-001: Tutor slot creation/editing

- P2P-F-002: Calendar display

- P2P-F-003: Double-booking prevention

- P2P-F-004: Email confirmation

- P2P-F-005: Booking cancellation

- P2P-F-006: Tutor notifications

- P2P-F-007: Recurring slots

- P2P-F-008: Search functionality

- P2P-F-009: Booking limits

- P2P-F-010: Export schedules

- P2P-F-011: Booking history

- P2P-F-012: Auto-cancel expired slots

- P2P-F-013: Conflict resolution

- P2P-F-014: Admin management

- P2P-NF-001: Response time ≤ 3s

- P2P-NF-002: 99.5% availability

- P2P-NF-003: 1000 concurrent users

- P2P-NF-004: TLS 1.2+ encryption

- P2P-NF-005: Accessibility (WCAG 2.1 AA)

4. Features Not to be Tested
- Third-party video-conferencing platforms

- Email provider reliability (assumed stable)

- External OAuth2 provider internals

5. Test Approach / Strategy
Levels:
- Unit testing (module-level)

- Integration testing (calendar, booking, notifications)
- System testing (end-to-end functionality)
- Acceptance testing (UAT)

Types:
- Functional testing
- Regression testing
- Performance & load testing
- Security testing (TLS, role-based access)
- Usability testing (accessibility, mobile view)

Entry Criteria: Stable build delivered, test data available, environment ready.

Exit Criteria: All planned test cases executed, no critical defects open, acceptance criteria satisfied.

5.1 Security Validation
- Verify TLS 1.2+ for all communications

- Test authentication & role-based access control

- Check password storage (hashed/salted)

- Validate logging & audit trails

- Penetration testing on booking flows

6. Test Environment
Hardware/OS: Cloud-hosted test servers.
Software: Web app v1.0, backend (Node.js/Python/Java), DB (MySQL/PostgreSQL).

Tools: Selenium (UI automation), Postman (API), JMeter (performance), Axe (accessibility), Jira (defect tracking).

Test Data: Dummy student/tutor accounts, slots, bookings.

7.Test Schedule
- **Test case design: 02-Oct-2025**
- **Environment setup: 04-Oct-2025**
- **Test execution start: 05-Oct-2025**
- **Test execution end: 17-Oct-2025**
- **UAT: 19-Oct-2025 to 21-Oct-2025**

7. Test Deliverables

- Test Plan (this document)

- Test Cases (manual & automated)

- Test Scripts

- Test Data

- Test Execution Logs

- Defect Reports

- Test Summary Report

8. Roles and Responsibilities

Role	Name	Responsibility
QA Lead	Chiyedu Vishnu	Prepare plan, coordinate execution
Test Engineer	Bhavini Shrutha M	Design & execute test cases, log defects
Developer	Chethana K	Support defect fixes and triage
Product Owner	Dareddy Devesh Reddy	Approve test results, sign-off readiness

9. Risks and Mitigation

Risk	Mitigation
Delay in stable build	Request early smoke builds
Test environment downtime	Maintain backup cloud VM
Email delivery issues	Use multiple test email providers

10. Assumptions & Dependencies

- Stable backend & database availability

- Test data prepared before execution

- SMTP/email services configured

11. Suspension & Resumption Criteria

Suspend testing if:

- Test environment unavailable > 4 hours

- Build blocks > 30% test cases

Resume testing if:
- Blocking defects resolved

- Environment stable

12. Test Case Management & Traceability

13. RTM mapping:

- P2P-F-001 → TC-SLOT-01, TC-SLOT-02

- P2P-F-003 → TC-BOOK-01, TC-BOOK-02

- P2P-NF-001 → TC-PERF-01

- P2P-SR002 → TC-SEC-01

13. Test Metrics & Reporting
Metrics:

- % test cases executed

- % passed/failed

- Defect density

- Defect aging

- Requirement coverage

Reports:

- Daily execution status

- Final Test Summary Report

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14. Approvals

Role	Name	Signature / Date
QA Lead		

Dev Lead		
Product Owner		