Acceptance Test Plan

Collaborative Whiteboard Application

Overview

This plan covers acceptance testing for our real-time collaborative whiteboard application. Tests validate functionality, usability, and performance from an end-user perspective.

Testing Areas:

- **Functional** - Core features working correctly
- **Usability** - User experience and interface
- **Performance & Reliability** - Load handling and error recovery

What We're Testing

Authentication & User Management

- Registration, login, logout flows
- Session persistence across page reloads
- **Target:** Login response <2s, >95% success rate

Board Management

- Create/update/delete boards
- **Target:** Board load <1s, access control properly enforced

Real-Time Drawing & Sync

- Stroke synchronization across multiple clients
- Drawing history retrieval on board join
- Drawing tools (pen, eraser, color/size selection)
- **Target:** Sync latency <200ms, >99% event delivery

Localization

- Auto language detection from browser
- Manual language switching
- **Target:** All text displays correctly in supported languages

Error Handling

- Network interruption recovery

Test Coverage Matrix

Feature Area	Test Cases	Priority	Type
Auth Flow	Complete registration/login/logout cycle	High	Functional
	Invalid credentials handling	High	Functional
	Session persistence after page reload	Medium	Functional
Board Operations	Create, read, update, delete boards	High	Functional
	Access control enforcement	High	Functional
Drawing	Basic drawing with pen tool	Critical	Functional
	Erase with eraser tool	High	Functional
	Color and size changes	Medium	Functional
Real-Time Sync	Stroke synchronization (2-5 clients)	Critical	Functional
	History load on board join	High	Functional
Usability	Tool palette discoverability	High	Usability
	Accessibility compliance (WCAG 2.1 AA)	High	Usability
Performance	10 concurrent users	High	Performance
	50 concurrent users	Medium	Performance
	Rapid stroke creation (50+ strokes)	Medium	Performance
	Large stroke accumulation (10 000+ strokes)	Medium	Performance
Reliability	WebSocket stability (10 min session)	High	Reliability
	Network interruption recovery	High	Reliability

Test Scenarios

Functional Tests

Complete Auth Workflow

- New user registers → logs in → logs out → logs back in
- Session persists after page reload
- Invalid credentials are rejected with error message
- **Pass if:** All steps complete without errors, session persists

Board Collaboration

- User A creates board → adds User B → both users access board
- User A removes User B → User B loses access
- **Pass if:** Control enforced correctly, database updates persist

Drawing & Real-Time Sync

- User A and User B join same board
- User A draws strokes → appear on User B's canvas within 200ms
- User C joins later → sees full drawing history
- Users switch tools (pen/eraser) and colors
- **Pass if:** All strokes sync correctly, history loads completely, tools work

Error Handling

- Attempt registration with existing email → clear error shown
- Attempt login with wrong password → clear error shown
- Attempt board access without permission → access denied
- **Pass if:** All error cases handled gracefully with helpful messages

Performance & Reliability Tests

Concurrent Load - 10 Users

(Automated via Playwright)

- 10 users register → log in → access same board → draw simultaneously
- **Measure:** Login time, board load time, sync latency, error rate
- **Pass if:** Avg login <3s, error rate <1%

Concurrent Load - 50 Users

(Automated via Playwright)

- 50 users across 5 boards (10 per board)
- Each user draws 10 strokes over 1 minute
- **Measure:** Response times, error rate
- **Pass if:** Avg login <5s, error rate <5%, no crashes

Drawing Performance

(Automated via Playwright)

- Single user draws 50 strokes rapidly (50ms intervals)
- **Measure:** Render time per stroke,dropped strokes
- **Pass if:** Avg render <50ms, zero dropped strokes

Large Dataset Handling

- Board with 10 000+ existing strokes
- New user joins and requests history
- **Measure:** Load time
- **Pass if:** History loads <5s

WebSocket Stability

(Automated via Playwright)

- Maintain connection for 10 minutes
- Send drawing events every 5 seconds
- **Pass if:** Connection stable, all events delivered, auto-reconnect on disconnect

Network Interruption Recovery

(Automated via Playwright)

- User drawing → network goes offline 5s → network restores
- **Pass if:** User notified of disconnect, auto-reconnect <5s, drawing history intact

Test Environment

Required Setup:

- **Backend:** Spring Boot server running on port 8080
- **Database:** PostgreSQL (with test data)
- **Cache:** Redis server running
- **Frontend:** React dev server on port 5173

Browsers:

Chrome, Firefox, Safari (latest versions)

Devices:

Desktop (1920x1080)

Test Data:

- 20+ test user accounts
- 5+ boards with varying stroke counts
- Sample drawing patterns

Success Criteria

Ready for Release When:

- ≥95% of functional tests pass
- ≥80% of usability tests meet expectations
- ≥90% of performance metrics within targets
- Zero critical bugs