
Domain: EdTech – Certification & Learning Platform
Project: SkillCertify (Fake Name)
Role: Senior Quality Analyst
Tools Used: Azure Test Plans (MTM), Postman, MySQL

Overview:

SkillCertify is a corporate training and certification platform that enables companies to assign courses and track employee progress through learning material, mock tests, and final certification exams. The platform supports multi-role access for Admin, Corporate HR, and Student (Employee) users, with exam rules, scoring, and certificate generation features.

The Problem:

Due to rapid feature development, issues were reported like unauthorized exam access, incorrect scoring logic, and inability to track real-time progress. Manual and API-level defects started slipping into production, creating audit and compliance concerns for clients.

Approach:

- **Requirement Breakdown:** Detailed analysis of time-based exams, certification rules, and multi-role navigation.
- **Test Scenarios Covered:**
  - User journey tests for each role (Admin, Corporate, Student).
  - Exam timer behavior under slow networks and device switching.
  - Role-based restrictions and API authorization.
  - Result publishing delays and progress tracking edge cases.
- **Tools Used:**
  - **MTM** for end-to-end manual test execution.
  - **Postman** for exam-related APIs (e.g., startExam, submitScore).
  - **MySQL DB** to validate enrolled users, score logs, and exam results.
- **Regression Testing:** Re-tested core exam module, especially auto-submit, scoring logic, and PDF certificate triggers.

✅ Critical Scenarios Covered:

- To verify that exams auto-submit correctly after time expiration.
- To verify that corporate users can assign courses but not view student scores.
- To verify student can't reattempt a passed certification exam.
- To verify bulk course upload handles malformed entries and logs errors properly.
- To verify API returns correct status when user submits results without authorization token.
- To verify DB logs capture correct timestamps for enrollment, progress, and result.

🚨 Notable Defects Caught:

- ❌ **[CRITICAL] Timer Manipulation:** Student extended exam by pausing JS on browser. System failed to invalidate the session.
- ❌ **[HIGH] Role-based Leak:** Corporate user accessed student personal info using direct URL manipulation.
- ❌ **[HIGH] Score Injection:** API endpoint accepted manipulated scores without verifying token source.
- ❌ **[MEDIUM] Course Progress Error:** Resetting failed course didn’t re-initiate progress from scratch.
- ❌ **[LOW] Result Delay:** Server-side queue delay in publishing certificates post result submission.

📊 Impact:

- ✅ **Compliance & Security:** Identified and fixed security flaws before UAT, preventing data breaches.
- 🕒 **Downtime Averted:** Resolved performance bottleneck which prevented certificate generation for 1,200+ users.
- 📈 **Improved API Coverage:** Covered 15+ APIs with positive and negative test flows using Postman.
- 🎯 **Client Trust:** Client audit passed successfully with clear documentation of fixed vulnerabilities.
- 👏 **Positive Client Feedback:** The client praised our defect coverage which helped them clear third-party security audits.
