QBurst | A High AI-Q™ Company

Strategic Quality Assurance for Healthcare Applications

End-to-end QE solutions for a premier US medical center, implementing comprehensive automation for both mobile and web applications to expedite bug-free launches, support migration, and ensure compliance with accessibility standards.

Overview

QBurst overhauled the medical center's QE strategy by deploying an advanced automation framework using Appium and Selenium, integrated with a full CI/CD pipeline.

- **Deployment Speed:** Deployment time was reduced dramatically from 4 hours to just 20 minutes by parallelizing the Jenkins pipeline.

- **Testing Cycle Reduction:** Automated regression curtailed the testing cycle time by 60%, accelerating the launch of bug-free applications.

- **Sprint Velocity:** Overall sprint velocity saw a 30% increase, leading to faster, more reliable product releases.

Client

One of the premier academic medical centers in the United States dedicated to excellence in patient care, education, and research. Consistently ranked among the top 10 hospitals in the U.S. News & World Report 'Best Hospitals' list.

Challenges

- **Slow Deployment:** Manual or non-optimized deployment processes meant releases took approximately 4 hours, hindering rapid bug fixes and feature rollouts.

- **Testing Bottleneck:** The long testing cycle time for regression and smoke tests significantly delayed the launch of bug-free applications to production.

- **Accessibility Compliance:** The need to conduct rigorous accessibility testing (WCAG 2.1) using screen readers required specialized skills and was labor-intensive.

- **Legacy Migration Risk:** Migrating legacy applications required complex redirect verification, which was error-prone and time-consuming when done manually.

QBurst Solution: Healthcare Application Automation

We delivered an end-to-end testing solution by implementing a comprehensive automation framework for both mobile and web applications, fully integrated with a Continuous Integration/Continuous Delivery (CI/CD) pipeline using Jenkins.

Key Solution Components

- **Automation Framework:** Developed a sophisticated framework combining Cucumber (for BDD) and the Page Object Model, ensuring easy customizability for multiple platforms. Used Appium for mobile applications and Selenium WebDriver for web applications.

- **CI/CD Integration:** Automated the regression and smoke test suites and configured them as Jenkins jobs in the CI/CD pipeline, enabling faster, reliable automated deployment.

- **Compliance Testing:** Implemented automated accessibility testing using VoiceOver (Mac) and Narrator (Windows) to ensure strict WCAG 2.1 compliance.

- **Migration Support:** Automated redirect verification using Rest Assured as part of the application migration process, drastically scaling down execution time.

Technical Highlights

- **Parallelized Deployment:** Boosted deployment speed by parallelizing the Jenkins pipeline, reducing deployment time from 4 hours to 20 minutes.

- **Reusable Scripts:** The framework provided easily customizable and reusable test scripts for both mobile and web, significantly reducing the cost and time for future maintenance.

- **Detailed Reporting:** The framework captures screenshots for failed scenarios and automatically sends email notifications with attached reports.

- **Data and Performance Analysis:** Provided API testing using Postman, data analysis by querying the DB using Oracle SQL Developer, and performance testing using JMeter upon request.

Impact: Delivering Comprehensive Automation

- **Accelerated Releases:** Improved overall sprint velocity by 30%, resulting in faster and more frequent releases.

- **Massive Deployment Speed Increase:** Deployment time was dramatically reduced from 4 hours to 20 minutes.

- **Curtailed Testing Cycle Time:** Regression automation curtailed the testing cycle time by 60%, covering difficult test cases and ensuring higher quality.

- **Automated Migration Verification:** Automated redirect verification scaled down execution time from 6 hours to just 10 minutes.

- **Cost Efficiency:** Reduction in manual work, time, and costs was realized through the use of re-usable automation test scripts.