


Case Study

Manufacturing Industry: Transforming Quality Assurance Through Automation



In today's fast-paced technology landscape, quality assurance (QA) is more critical than ever. Ensuring that products work flawlessly across different platforms and scenarios is a challenge that every company faces. For one of our clients, this challenge came in the form of testing manual lights using both Android and Apple devices—a task that initially required significant manual effort and was prone to human error.

When we first engaged with the client, their QA process was incredibly limited. They had one QA developer using a single physical light and an iPhone to side load apps needed for testing. The process was slow, labor-intensive, and not scalable. The developer could only test one light at a time, making it nearly impossible to cover all the necessary scenarios efficiently.

Recognizing the limitations of this approach, we set out to revolutionize their QA process through automation. Our team developed a fully automated system that leveraged multiple mobile devices, running tests simultaneously across thousands of lights installed in a warehouse. The key to this transformation was a sophisticated tool that

translated JavaScript code into specific machine code for iOS and Android devices. This allowed the automated system to interact seamlessly with the lights, executing a variety of test scenarios.

But our solution didn't stop at just automating the interaction between devices and lights. We took the automation to the next level by covering the entire testing process—from iOS middleware and web applications to web services and continuous integration/continuous deployment (CI/CD) using Azure DevOps. The combination of JavaScript automation tools, Python for firmware testing, and Postman for API testing created a comprehensive, end-to-end automated testing solution.

The impact of this automation was profound. The client was no longer constrained by the limitations of manual testing. With the ability to test thousands of lights simultaneously, the speed and efficiency of their QA process skyrocketed. Errors that were once commonplace due to manual testing were virtually eliminated, and the overall quality of their products improved significantly.

This transformation allowed the client's QA team to focus on higher-level tasks, such as refining testing strategies and exploring new scenarios, rather than being bogged down by repetitive manual testing. The automated system also provided detailed reports and analytics, giving the team valuable insights into the performance of their products under various conditions.

In the world of QA, where precision and reliability are paramount, our automated solution proved to be a game-changer. It not only met the client's immediate needs but also positioned them for future growth, with a scalable and flexible system that could easily adapt to new products and testing requirements.

Through this successful engagement, we demonstrated how automation in QA can lead to significant improvements in efficiency, accuracy, and overall product quality. By embracing innovative technologies and integrating them into their processes, companies can ensure that they deliver products that meet the highest standards, keeping them ahead in a competitive market.

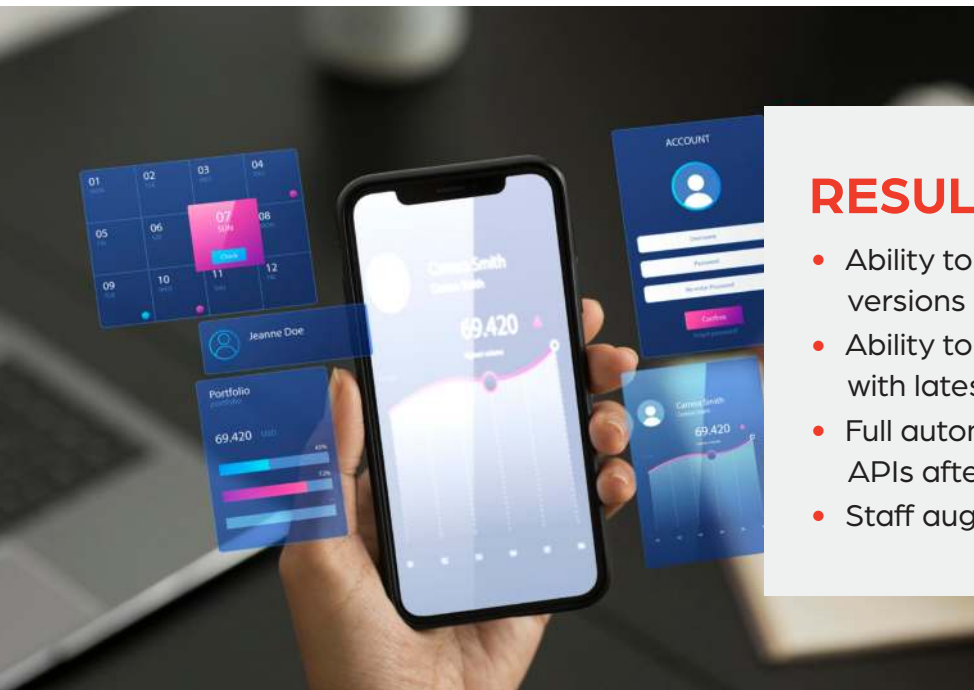
CHALLENGES

- Single Quality Assurance Engineer doing manual testing
- Side loading iOS app on iPhone
- Inconsistent build on QA machine than pushed to production
- One physical light
- Engineering needed to "un-brick" lighting fixture if tests bricked light



SOLUTION

- Created end-to-end testing solution
- Automated builds for iOS, Android, firmware, APIs, web
- Test automation using APPIUM test



RESULTS

- Ability to test across various iOS, Android versions
- Ability to test various firmware versions with latest mobile builds
- Full automation of iOS, Android, firmware, APIs after every build
- Staff augmentation



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