QBurst

IOT TESTING FOR

HOME AUTOMATION SOLUTION

PROJECT **OVERVIEW**

The client is an emerging player in the home automation space offering electronic keyless entry locks for residential use. The home automation applications enable users to control lighting and security systems. We partnered with the client for manual and automation testing of IoT products, which comprised mobile, web and backend services.

Considering the multiple scenarios that needed to be tested and frequency of releases, we decided to go with test automation. This significantly reduced the large testing cycle of the smart lock applications. With IoT involved, the role of QA testing was even more critical. The hardware and software needed to work seamlessly; security and performance of the IoT environment had to be ensured.

CLIENT **PROFILE**

Our client is a leading consumer products company and a member of the Russell 1000 Index. They offer a broad portfolio of market-leading brands that include products such as home appliances, residential locksets, and builders' hardware.

BUSINESS **REQUIREMENT**

The client wanted to ensure that new features in the home automation platform were thoroughly tested before launch.

- QA for Wi-Fi door locks (software and firmware)
- Interoperability testing
- Multi-country (localization) testing
- Automation of the Regression Suite (web/mobile/API)
- Performance and security auditing

QBURST **SOLUTION**

We designed the wireframes after reconciliation, analysis, and documentation of requirements. Once the wireframes were finalized, we created test and use cases in the test management tool, TestLink. This served as the primary reference document for testers, developers, and business users. During this phase we defined the test strategy as well.

Automation Testing was performed for web, API, and mobile applications. Initially every piece of application was manually tested and later automated with the QBurst Test Automation Framework (QTAF) — this speeded up release cycles. We generated test scripts that could be used across applications to eliminate redundancy in the framework. These scripts are executed at regular intervals to analyze stability of the application. Discrepancies, if any, are automatically intimated via email with detailed reports. Performance testing was conducted using QTAF to assess the application's capacity and scalability.

Testing Process: We performed testing on individual mobile, web applications, IoT devices (firmware and door locks) and their interactions. A large number of tests were designed and used for multiple purposes such as build verification, regression, and smoke testing. Test automation scripts were integrated with CI/CD (continuous integration/continuous development) pipelines. When a new build happens in any environment, a subset of test automation is executed, and build is rejected if it does not satisfy the test criteria. If the test criteria is satisfied, the build is passed to QA for complete functional and nonfunctional testing. Informative reports (automated and manual) are generated at the end of test sprints, enabling easy interpretation of test execution results.

TOOLS AND **TECHNOLOGIES**

TESTS **CONDUCTED**

- UI Testing
- Functional Testing
- Smoke Testing
- Regression Testing
- API testing
- Automation Testing

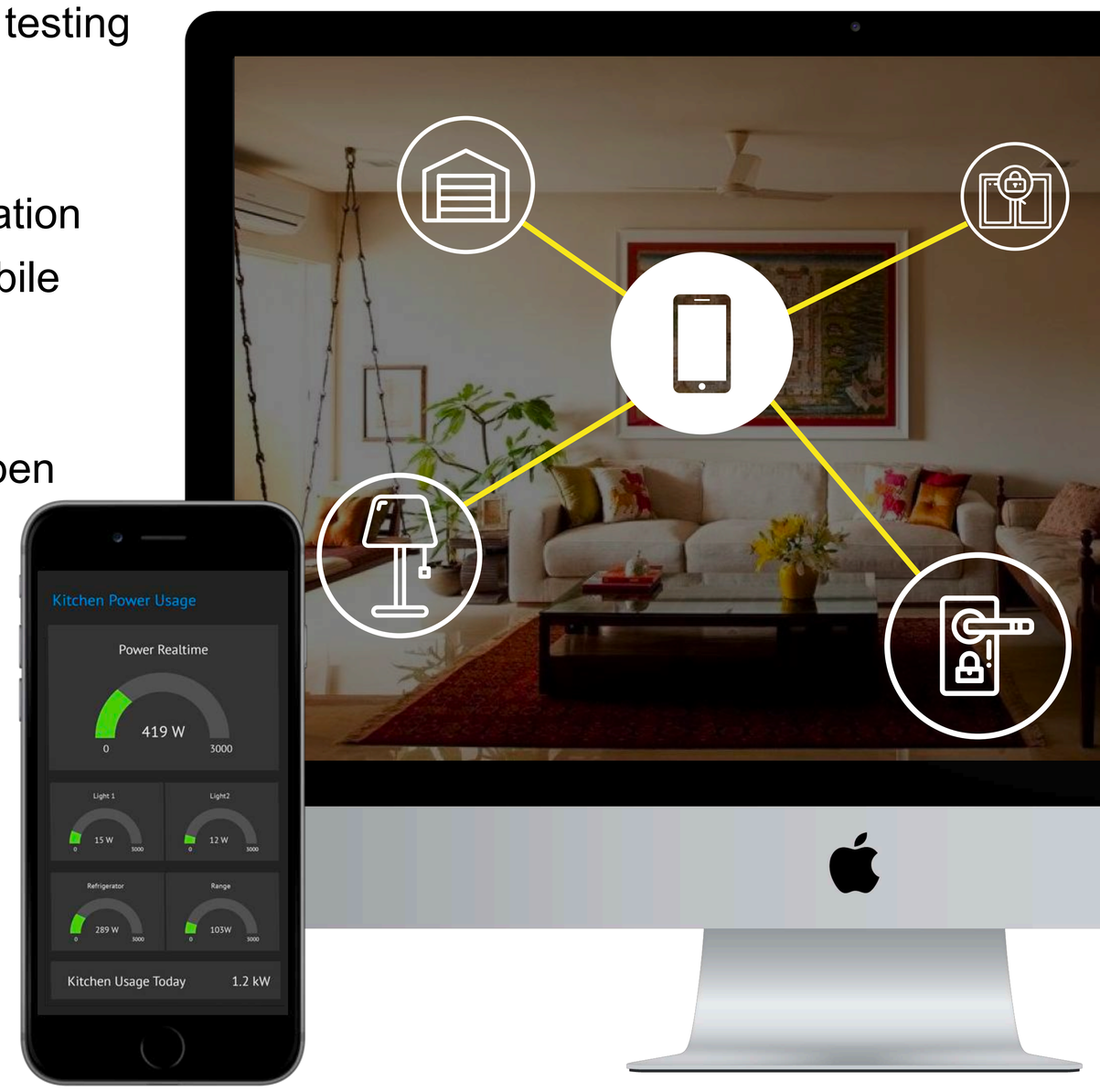
END **RESULT**

- Automation covered areas that were difficult to test manually considering different combinations possible, reducing testing cycle by 40% per release

- Reduced time and cost as a result of reusable automation test scripts for multi-language supported web and mobile applications

- Saved considerable costs by utilizing Selenium, an open source test automation tool

- Ensured superior quality and stability of products



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