Empowering Electric Mobility:

Overcoming Testing Challenges for Smart Charger Integration

Introduction

Our case study revolves around a 20-person company specializing in the design, development, and testing of embedded systems. The company has engaged in collaborations with several foreign firms, focusing primarily on two major projects: Audio and Video Tourguide systems and testing the Smart Charger for electric vehicles. Their overarching goal is to devise solutions tailored to each task at hand, with a particular emphasis on Energy Management, as evidenced by their work on the Smart Charger.

The Story

One of the pivotal projects undertaken by the company aimed to facilitate electric vehicle owners in reserving and charging sessions through web platforms or applications. Kibit's specialist was entrusted with the development of the backend system for this initiative. His team's role was to meticulously test the electronics and software of these systems, with the objective of providing swift feedback to the development team through automated tests.

Understanding the intricacies and functionalities of the product was paramount. Following this, they crafted test plans for both manual and automated tests. Given that Java was the primary technology utilized for development, the team opted for Java-based automated testing to align with the project's requirements.

The Challenge

One of the significant challenges encountered in the Smart Charger project was simulating and testing charging states without a physical electric vehicle. To address this, our specialist gathered data on electric vehicle chargers and their operations. Subsequently, he devised a small electronic setup in the laboratory to simulate these charging states. This innovative solution enabled our team to simulate charging conditions effectively, facilitating both development and manual testing phases.

Furthermore, achieving comprehensive testing necessitated the utilization of various testing methodologies, including manual testing, Unit Testing for code validation, and API test automation.

The Results

In conclusion, the project proved to be a success. The simulation of charging states significantly eased the developers' workflow, providing them with accurate representations of charging conditions and expediting feedback through automated tests.

The diverse nature of the projects undertaken by the company fostered a "Think outside the box" mindset, enabling me to explore and master various testing methodologies.

Let's Chat! Let's Build Your Idea together!

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