SAP AUTOMATION TESTING WITH BDD OVER ROBOT FRAMEWORK

One of our clients, a key player in the retail sector, engaged its complex organizational and technological structure in a series of parallel initiatives as part of a major technological transformation.

With time-to-market closely aligned with retail industry standards, the company required a simple and structured language and an exponentially accelerated testing process to meet its delivery objectives.

Sector
Retail

Delivery Unit
Quality Management

Solution
SAP Retail Automation Testing

+500
automated SAP tests with BDD over Robot Framework

+40%
less regression time/effort for each SAP release

+450
SAP retail basis configurations tested via automated regression in GitLab Pipeline

+100
SAP retail business flows with APIs tested via automated regression in GitLab Pipelines

THE CHALLENGE

The client transformed its technology architecture while migrating its ERP system to SAP S/4HANA Retail. Adopting a project management model based on Agile methodologies required integrating our SAP QM Team into an Agile Squad model focused on retail processes.

This setup allowed us to deliver User Stories to the client effectively. From requirements definition to test case creation and execution, Business User Stories became the core elements of the process, ensuring transparency for all stakeholders involved in the project.

GOALS

The BDD over Robot Framework testing approach aimed to enhance collaboration between the technical and business teams within the organization.

This approach facilitated a seamless transition from defining a user story and its acceptance criteria to writing a manual functional test and eventually developing an automated test integrated into CI/CD pipelines.

SOLUTION

Since BDD testing is an Agile approach to software testing, our testers wrote test cases in a straightforward language that all stakeholders easily understood. Once the business teams defined a user story, the "Given, When, Then" structure was applied, ultimately leading to the execution of an automated test with predefined objectives set by business analysts and SAP system analysts.

The same logic was followed throughout the process: from the user story to initial manual tests, and then to an automated test script. This script was coded using an IDE and integrated into SAP test pipelines via GitLab. Our teams accessed various SAP environments and servers through the WebGui provided by the solution, enabling native integration of the Robot Framework through its Selenium library. This library was further enhanced during the development of the automation project to address the specific requirements of the SAP WebGui solution, which were not typically found in conventional websites.

For this SAP solution, we segmented the automation component into three types of functional tests:

> **System configuration tests (SAP Basis)**: Ensuring the proper setup of the SAP system;

> **SAP business process testing**: Verifying the correct operation of standard and customized business processes;

> **API tests:** Ensuring that processes triggered by external systems could seamlessly integrate with SAP or that SAP could act as the initiator of processes extending to satellite systems.

THE RESULT

Our efforts yielded the following outcomes:

> A common language was established for all project stakeholders, ensuring clear communication of user needs and software testing solutions;

> High levels of collaboration were achieved among squads of users, quality teams, product owners, and engineers, enabling consensus on project goals;

> The rapid transition from requirements to manual and automated tests resulted in faster product delivery;

> Software implementation errors were significantly reduced by translating business requirements into a clear format for all executed tests.

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