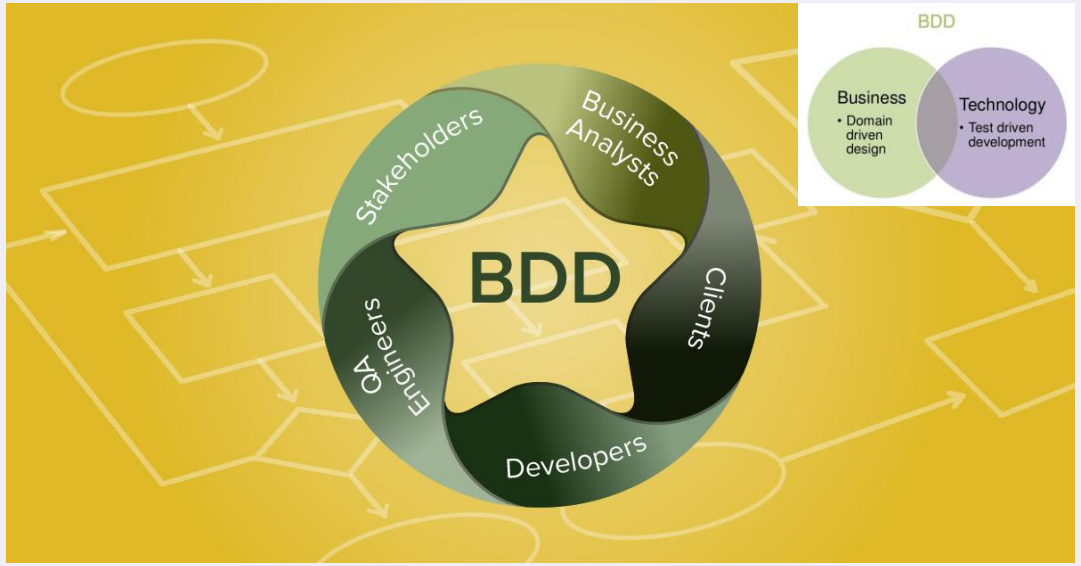
End-To-End Automation Testing - A Business Driven Approach



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Abstract

As trending world, the expectation from the Quality Engineering team is to ensure all the applications are tuned to deliver to every rising user expectations, at no additional cost hence the IT is under constant pressure to deliver new applications faster and cheaper with requirements are fairly fluctuating and demanding.

In the fast-phased development and multiple deployments the automation testing plays a key role to ensure the quality of product as well correlated with reducing the lead time for changes. Latest industry practice such as BDD helps to reduce the costs involved in automation testing, as well reduces fewer defect leakages

CUSTOMER CHALLENGES

Reduce Time between development & Deployment, QA needs to transform and facilitate this , it requires a paradigm shift from conventional QA Automation from developer centric to Business Centric to increase the productivity and avoid late involvement of Quality Engineers , it helps to support DEVOPS process (Auto Test, Auto Deployment) by implementing Behavior-Driven Technique (BDD)

Behavior – Driven Technique (BDD/BDT)

Behavioral-driven development and testing is a way to reduce gap between the end user and the actual application being built.

It uses natural language to describe the 'actual behavior' of the application in a common notation that can be understood by domain experts, developers, testers and clients alike, improving communication.

It's a refinement of practices such as test-driven development (TDD) and acceptance test-driven development (ATDD).

Major advantage is that the tests verifying the behavior reflect the actual business requirements/user stories and generate the live document of the requirement (Feature Files), Hence the results generated can be read and understood by a non-technical person, such as sponsor, a domain expert,etc.

BDT , Which has changed the tester's role dramatically in recent years, and bridges the communication gap between business and technology. It focuses on implementing and verifying only those behaviors that contribute most directly to the business outcome.

Solution Approach

Our Solution approach is threefold, to resolve challenges in holistic way. It applies Behavior-Driven testing with katalon studio hybrid framework, it ensures the business users are involved.

It ensures seamless communication between multiple stakeholders , technical teams and leverage industry standards

Behavior-Driven Test (BDT)

BDT approach facilitates real-time traceability of user stories/requirements and to aid live documentation.

This approach as a single point of continuous interaction between the testers and the business users.

User stories are divided in to various scenario's in to feature files.

- These scenario's are written using Gherkin language, it includes the business situation , the pre-ions the data to be used with acceptance criteria
- End-user signs off the features/Scenarios. This provides the user control to execute and validate the scenario based on the data as per user needs and brings up feature reports/dashboard
- The underlying technical implementation is abstracted from the business user
- QE Engineers creates the underlying test scripts for the scenarios which could be a business layer test script, Web Service Script or UI automated test script

- The tool then converts the scenarios to 'step – definitions', which act as the binder between the test scripts and the scenario, this ensures that single point/interface is used to execute any type of tests (Smoke/Regression)

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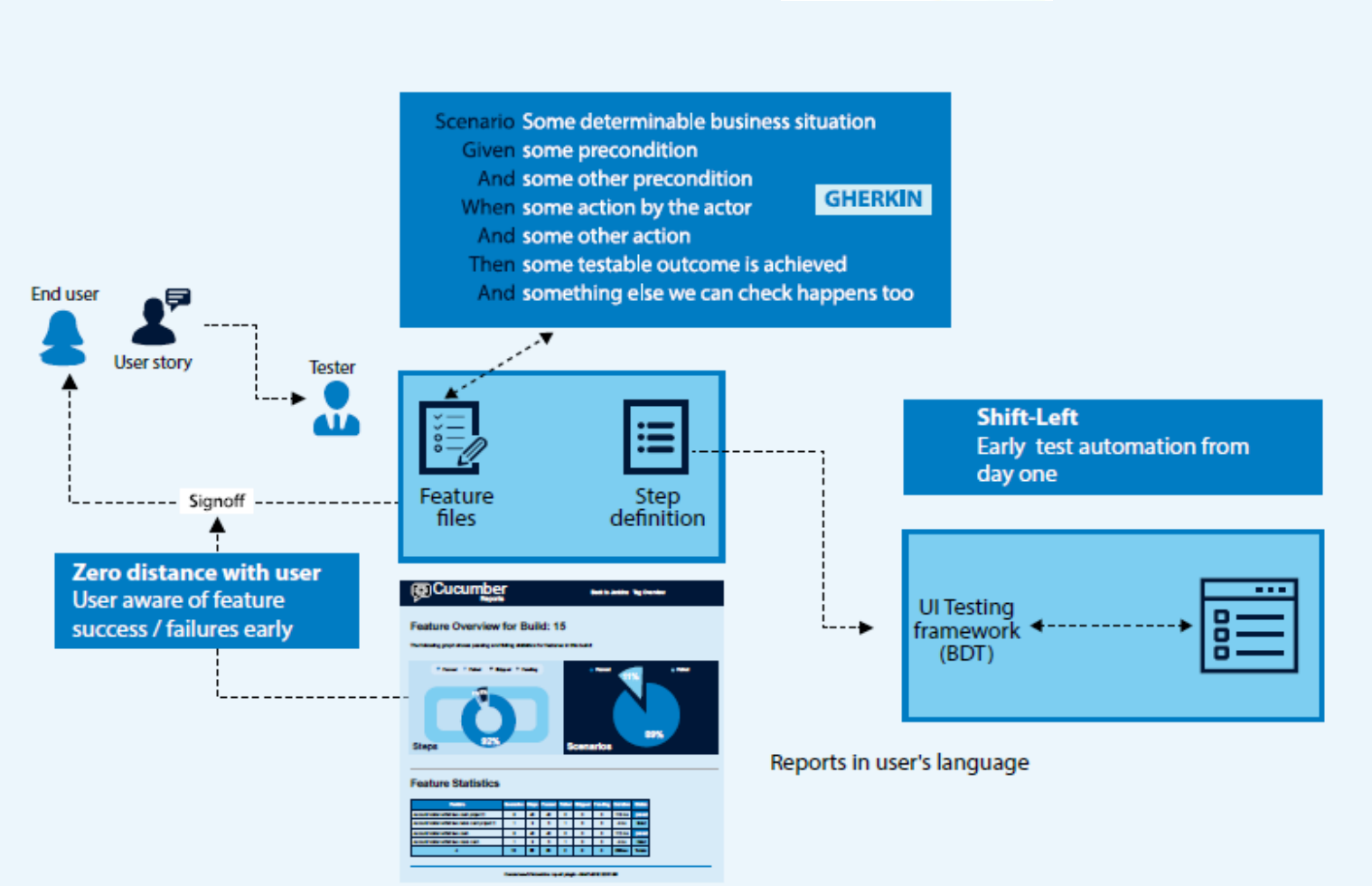

Advantages of BDT

Enhanced Quality

- Enhanced business user participation and satisfaction due to the live documentation of features and user stories , available at fingertips
- Collaboration of agile team members possible due to natural language
- Due to high test coverage will get high defect detection rates (90 to 99 percent)

Minimized–time–to-Market

- Shift-left, early automation, and early life cycle validation
- Easy to maintain the change requests as well script failures due to the auto traceability of step definitions with glue codes

Minimized Cost

- 40-60 percent reduction in effort for automated test case over manual testing , 20 – 30 percent effort reduction for automated script maintenance and change request implementation
- Detailed error reporting reduces defect reporting effort considerably

Conclusion

Our solution approach is the initial step towards dipping the complexity of test automation and making it more useful for the end user by providing early and continuous feedback to the incremental application development , It advances automation at every level to achieve fast development and faster time-to-market objects.

Also the BDT supports to implement successful Continuous integration test (Auto test execution, BVT) towards the Devops implementation.