6th UCAAT
User Conference on Advanced Automated Testing

ETSI

Paris, 16-18 October 2018

Organizer: TESTING SOLUTIONS & SERVICES

Experience Report :
Visual Test Design for Test Automation in Agile of a Large-Scale IT Systems

Presented by Elodie Bernard

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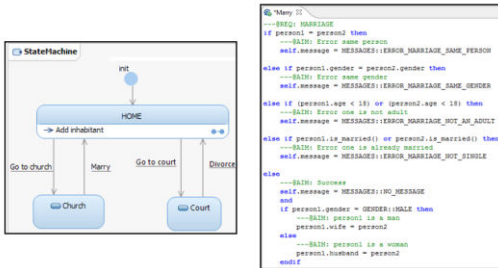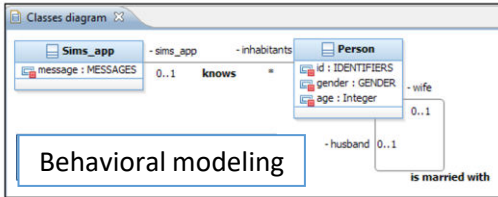
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Statement
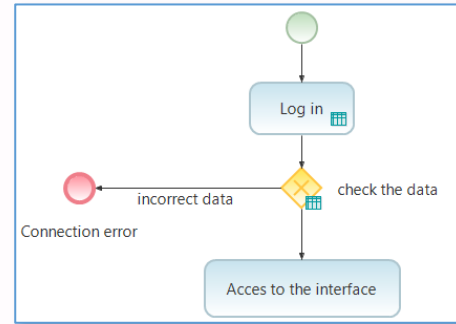**Problem and workflows**

Problem statement

- Complexity in use of the current MBT approaches

- Introduction of a Lightweight MBT : a visual test design approach

- Simplify the modeling notation

- Facilitate the maintenance of test cases during and through sprints

Workflows statement

Typical MBT modeling approach

Behavioral modeling

Visual test design

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Modeling concepts

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Example of visual test design with Yest® (from Smartesting)

- Limited number of modeling artifacts

- High modelling capability

- Ability to represent simple as well as complex business processes

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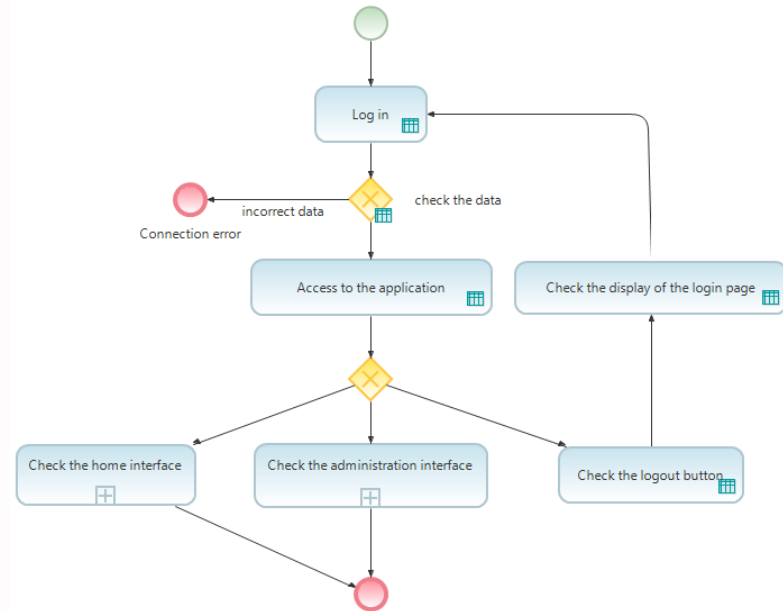
Acceptance Test Driven Development
With a visual test design approach

ATDD concept with a visual test design approach

Start of a new sprint

End of the sprint

We have new :
- **User stories**
- **Business rules**
- **Acceptance criteria**

We **update** the graphical representation to be in line with business rules

We **generate** acceptance scenarios

Features are developed and made accessible on a test environment

Changes in product backlog occur in the sprint and will be developed

We **test** the new features
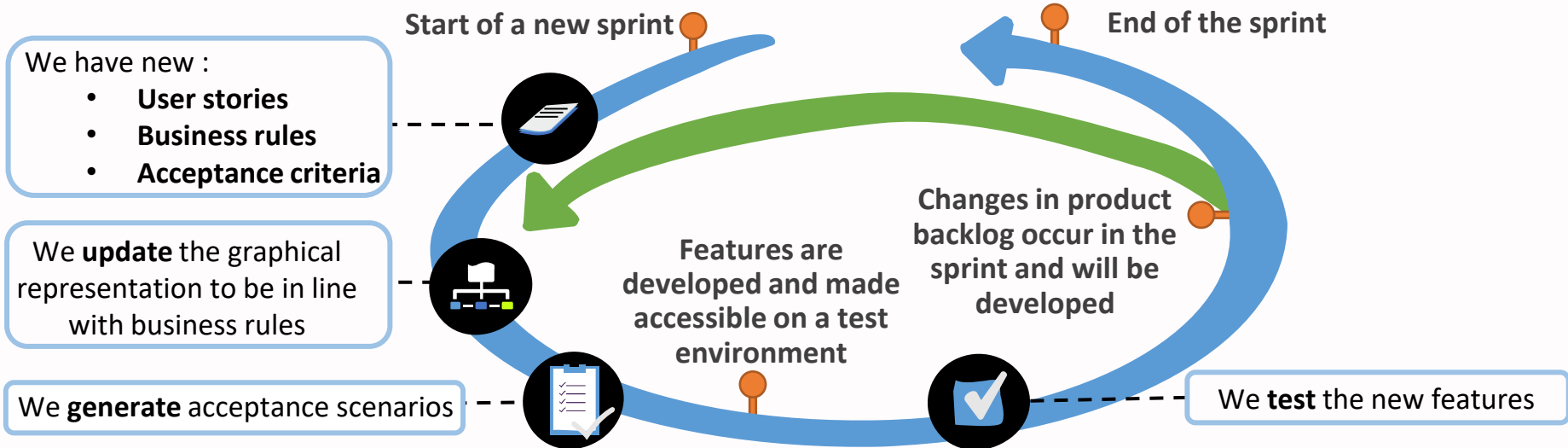
Lessons learned from using a visual test design approach

- Helps to easily update the test assets

- Allows to quickly generate tests that required an update

- Improves communication and work between project stakeholders

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Test automation
Overview

Test automation overview

- Keyword-driven-testing

- Java Selenium add-on

- Data set management

Keywords table with Yest

	A	B	C	D
1	Class	Keyword	param1	param2
2	com.test.Automation	LogIn	id	password
3	com.test.Automation	CheckData	correctOrNot	
4	com.test.Automation	OpenThePage	page	

Test automation process

@RunWith(Parameterized.class)
public class test_log_in_ok {

    private final String id;
    private final String password;

    public test_log_in_ok(final String id, final String password) {
        this.id = id;
        this.password = password;
    }

    @Parameters(name = "{0}-{1}")
    public static Collection<Object[]> dataSets() {
        return asList(new Object[][]{
            {"Pebf5216r", "piPyds-4515"},
            {"Pehgt987r", "poijklm_78"},
            {"Drtf451251", "z785_ujfqf"}
        });
    }

    @Test
    public void execute() {
        LogIn(id, password);
        CheckData(true);
    }
}

Test steps

	Actions	Expected results
1	Connect to the application with a **correct** identifier and a **correct** password	The identifier and the password are provided
2	Check the data	The data are correct
3	Access to the home page	Access valided

Test script

LogIn (*id* = **Pebf5216r**, *password* = **piPyds-4515**)

CheckData (*correctOrNot* = **true**)

OpenThePage (*page* = **homePage**)

The visual representation of the test	The abstract scenario and the corresponding automated test script	The test script in java/Selenium with the use of dataset

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Test automation process

The scripting details

Data set collection

	Name of data set	password	id
1	DataSet 1	piPyds-4515	Pebf5216r
2	DataSet 2	poijklm_78	Pehgt987r
3	DataSet 3	z785_ujfqf	Drtf451251

The scenario to automate

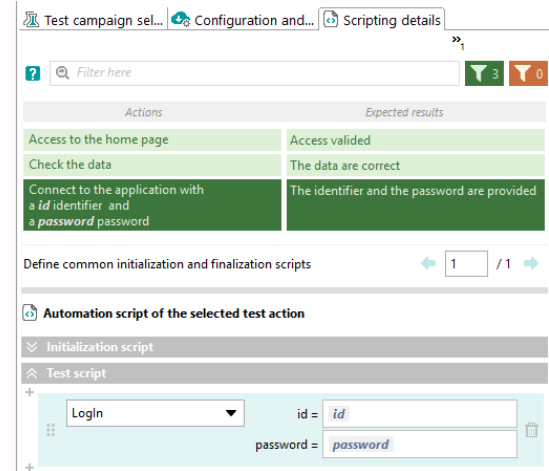|	Actions	Expected results
1	Connect to the application with a **correct** identifier and a **correct** password	The identifier and the password are provided
2	Check the data	The data are correct
3	Access to the home page	Access valided

Create a data set collection

Link the keywords to the test actions

Link data sets to the future automated script

Test campaign sel... | Configuration and... | Scripting details

Actions	Expected results
Access to the home page	Access valided
Check the data	The data are correct
Connect to the application with a **id** identifier and a **password** password	The identifier and the password are provided

Define common initialization and finalization scripts   1 / 1

Automation script of the selected test action

Initialization script

Test script

LogIn   id = *id*
password = *password*

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Lessons learned about the automation process

- Our experiences have shown that :
  - Having a visual link between the manual and automated test assets is beneficial
  - Documentation of automated test cases is directly accessible to all project stakeholders through a visual approach
  - The ability to transcribe test cases easily via the keyword-driven system provides visibility and improves maintenance management

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Conclusion and futur works

What is new in our approach ?

- The approach dramatically simplified the MBT approach
- Maintain a short learning curve and good usability by functional testers
- Be in line with iterative and incremental development approaches
- Supporting both scenario-based and automated test

Futur works

- To experiment the training of functional testers

- Continue to develop an add on in Yest

- To define good practice to facilitate and improve MBT approach, visual test design

- Apply new approaches and methodologies to a group of IT projects