

Paris, 16-18 October 2018



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**Experience Report :**  
**Visual Test Design for Test Automation in Agile of a Large-Scale IT Systems**  
**Presented by Elodie Bernard**

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# Statement

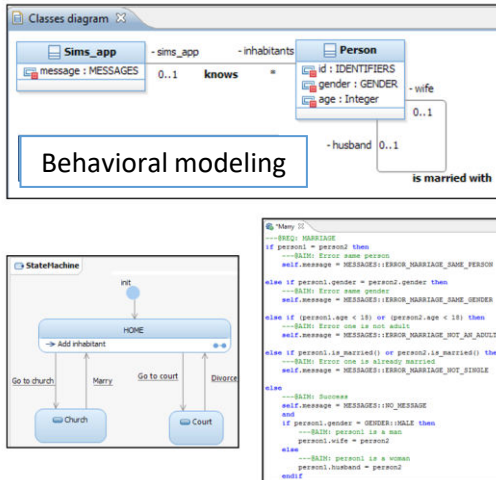
## Problem and workflows

# Problem statement

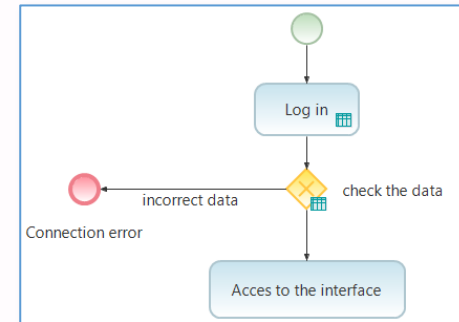
- Complexity in use of the current MBT approaches
- Introduction of a Lightweight MBT : a visual test design approach
- Simplify the modeling notation
- Facilitate the maintenance of test cases during and through sprints

# Workflows statement

## Typical MBT modeling approach



## Visual test design



	id	password	Test steps	Outcome
1	correct	correct	1 Check the data	The data are correct --> Access to the application
2	correct	incorrect	1 Check the data	The data are incorrect check the data - incorrect data - Connection error
3	incorrect	incorrect	1 Check the data	The data are incorrect check the data - incorrect data - Connection error

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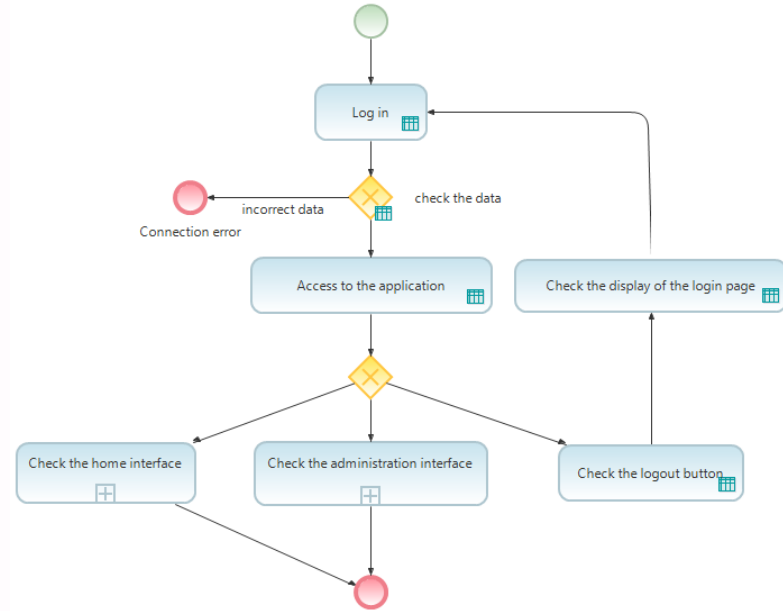


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# Modeling concepts

# Example of visual test design with Yest<sup>®</sup> (from Smartesting)

- Limited number of modeling artifacts
- High modelling capability
- Ability to represent simple as well as complex business processes





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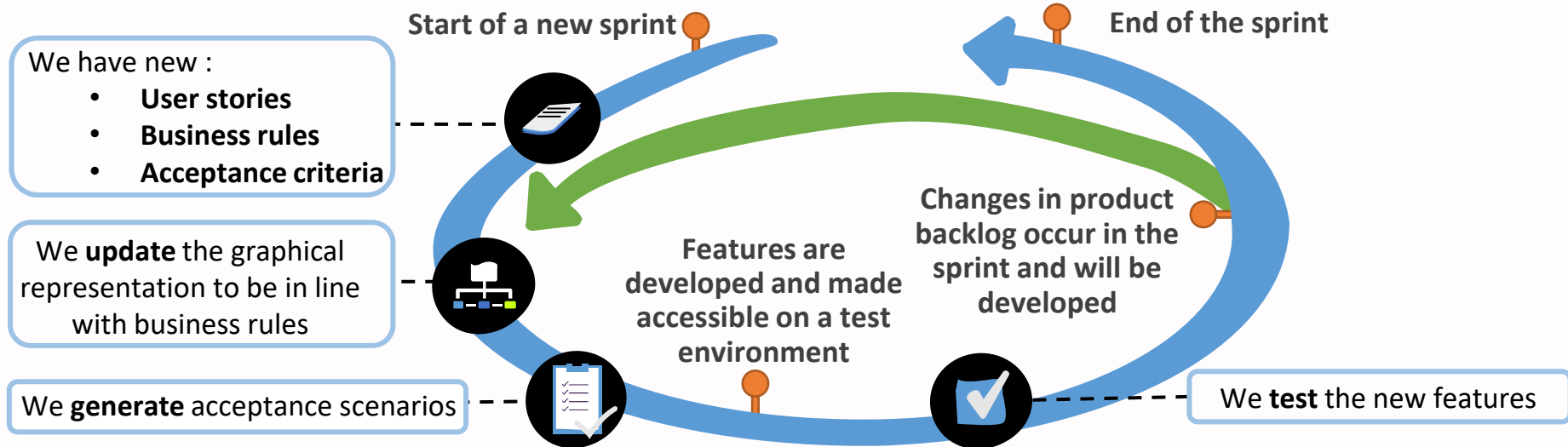


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# Acceptance Test Driven Development

## With a visual test design approach

# ATDD concept with a visual test design approach





# 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

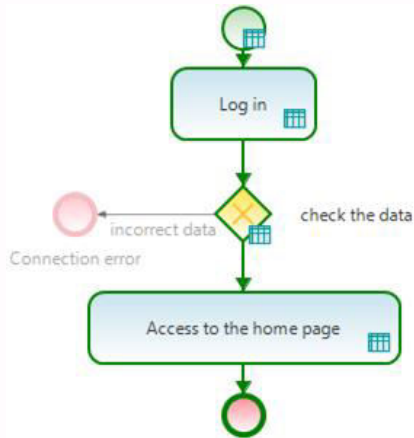
- Keyword-driven-testing
- Java Selenium add-on
- Data set management



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



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 validated

Test script

```

Login (id = Pebf5216r, password = piPyds-4515)
CheckData (correctOrNot = true)
OpenThePage (page = homePage)
  
```

```

@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", "poiiklm_78"},
            {"Drtf451251", "z785_ujfqf"}
        });
    }

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

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

# Test automation process

## Data set collection

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

## The scenario to automate

	Actions	Expected results
1	Connect to the application with a <b>correct</b> identifier and a <b>correct</b> password	The identifier and the password are provided
2	Check the data	The data are correct
3	Access to the home page	Access validated

Create  
a data set collection

Link the keywords  
to the test actions

Link data sets to  
the future automated script

## The scripting details

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

Filter here

Actions	Expected results
Access to the home page	Access validated
Check the data	The data are correct
Connect to the application with a <b>id</b> identifier and a <b>password</b> 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

# 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