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AUTOMATED TESTS

EmbedIT
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Jan Klement, Michal Godar

Definition

- < **Test automation is the use of software to control**
 - < the execution of the tests
 - < the comparison of actual outcomes to predicated outcomes
 - < the setting up of test preconditions
 - < the test result reports

http://en.wikipedia.org/wiki/Test_automation



WIKIPEDIA
The Free Encyclopedia

Motivation



To prevent bugs in further project phases

To make sure that the bugs are not reintroduced in the code-base

coding skills on both sides

To improve cooperation with the developers

code validation after commit

To allow manual tester to focus on more specific business cases



To replace repetitive manual work

Motivation



- < to add test case which would be difficult to perform manually
- < to speed and increase efficiency in the specific areas like
smoke, regression or validation
- < to run test independently on the human resources
- < to extend current continuous integration process



Technologies

Name		Description	Client
IntelliJ IDEA		integrated development environment	Thin
Jenkins	 Jenkins	Continues integration environment test execution scheduling	Thin, Fat
JUnit		Framework for unit testing	Thin
Maven		Software project management Infrastructure support	Thin
Selenium 2.0		Framework for web based applications functional testing	Thin
Spring		Automated test dependency injection Database access	Thin

Technologies

Name	Description	Client
Visual Studio 2012 	Integrated development environment	Fat
White 	Framework for windows based applications automation functional testing	Fat
UI Spy, BitmapComparer, OCR	Tools to view, identify and interact with the user interface elements of application	Fat

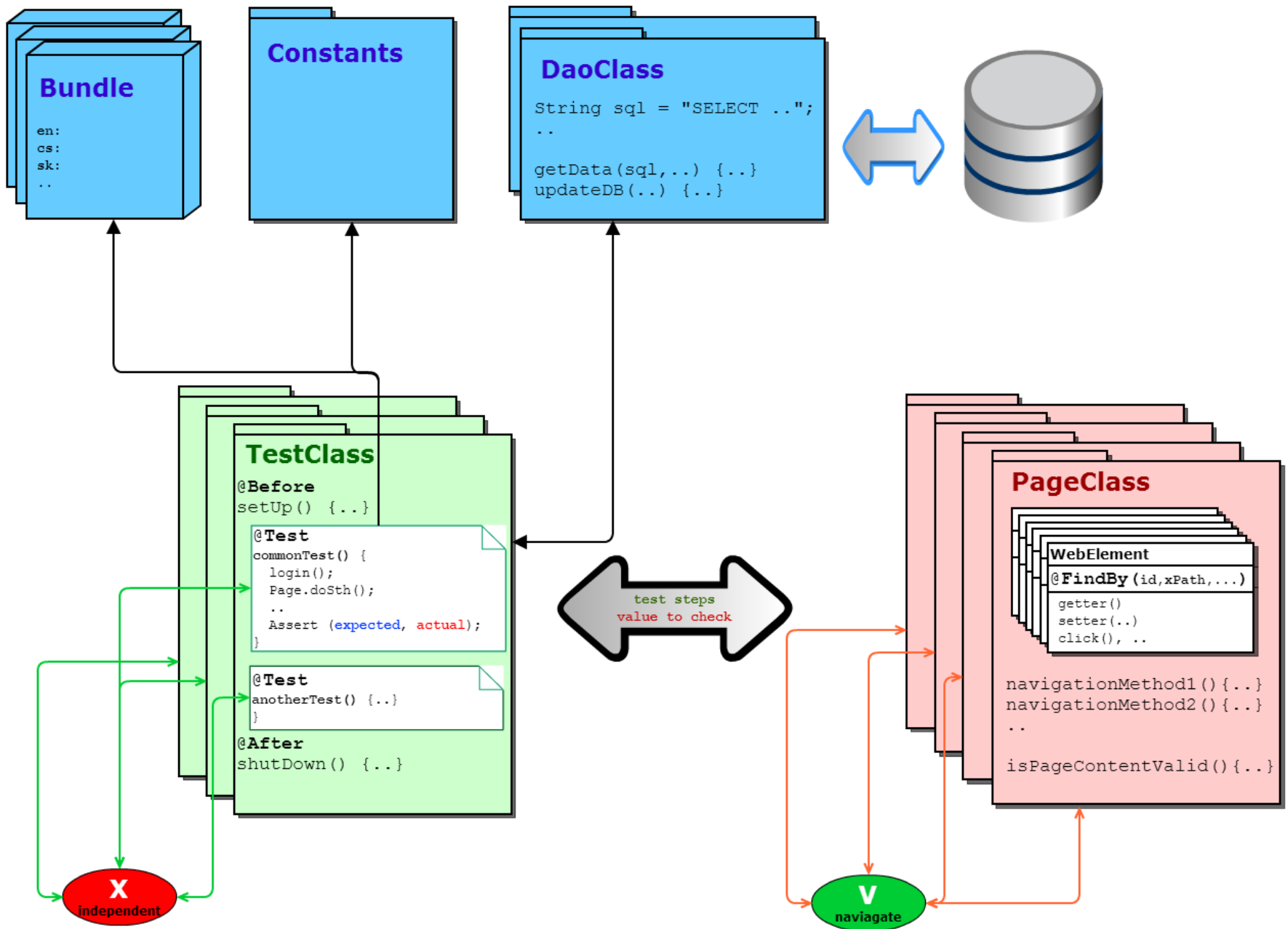
Infrastructure of tests

< Page Object Pattern

- < best practices for web application automation tests
- < fluent navigation between pages, better script maintenance
- < change in an element identification on the page doesn't cause restart of test creation process

< Data

- < DAO (Data Access Object) for database communication (JDBC)
- < constants - static data
- < resource bundles (Spring) – language specific constants



Code example

```
public class GoogleTest extends BaseTest {

    private IHomePage homePage; // Google home page - search box only
    private IImagesPage imagesPage; // result page for Images tab

    @Before
    public void setUp() throws Exception {
        initBaseTest();
        homePage = openMainPageGoogle();
    }

    /**
     * Upload photo - Beware! real google uploading
     */
    @Test
    public void testUploadPhoto() throws InterruptedException {
        imagesPage = homePage.fillSearchAndNavigateToInternetPage()
            .navigateToImagesPage();

        imagesPage.uploadPhoto(getPathOfPhoto(Constants.IMG_HOUSE));
        // check the result - passed if file name of photo is visible
        Assert.assertEquals("File was not uploaded - on Images Page",
            imagesPage.isTextPresent(Constants.IMG_HOUSE), is(true));
    }
}
```

```
public interface IHomePage {
    IInternetPage search();
    IInternetPage search(String textToSearch);
}

public class HomePage extends GenericPage implements IHomePage {
    @FindBy(id = "gbqfq")
    private WebElement tbSearch;

    @Override
    public IInternetPage search(String textToSearch){
        tbSearch.sendKeys(textToSearch);
        tbSearch.sendKeys(Keys.ENTER); // example how to simulate keyboard
        return addPageToFactory(InternetPage);
    }

    @Override
    public IInternetPage search() {
        return search(Constants.IMPLICIT_SEARCH_TEXT);
    }

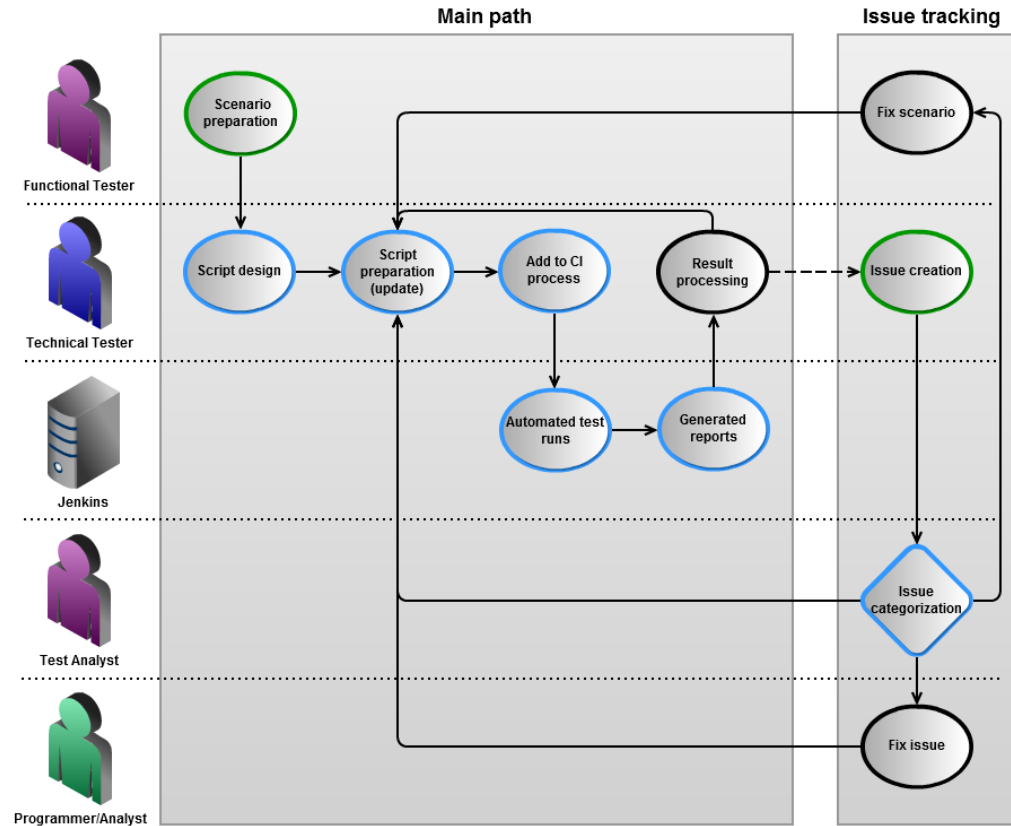
    @Override
    public boolean isPageContentValid() {
        WebElement googleLogo = isElementPresent(By.id("hplogo"));
        return googleLogo != null;
    }
}
```

Video preview

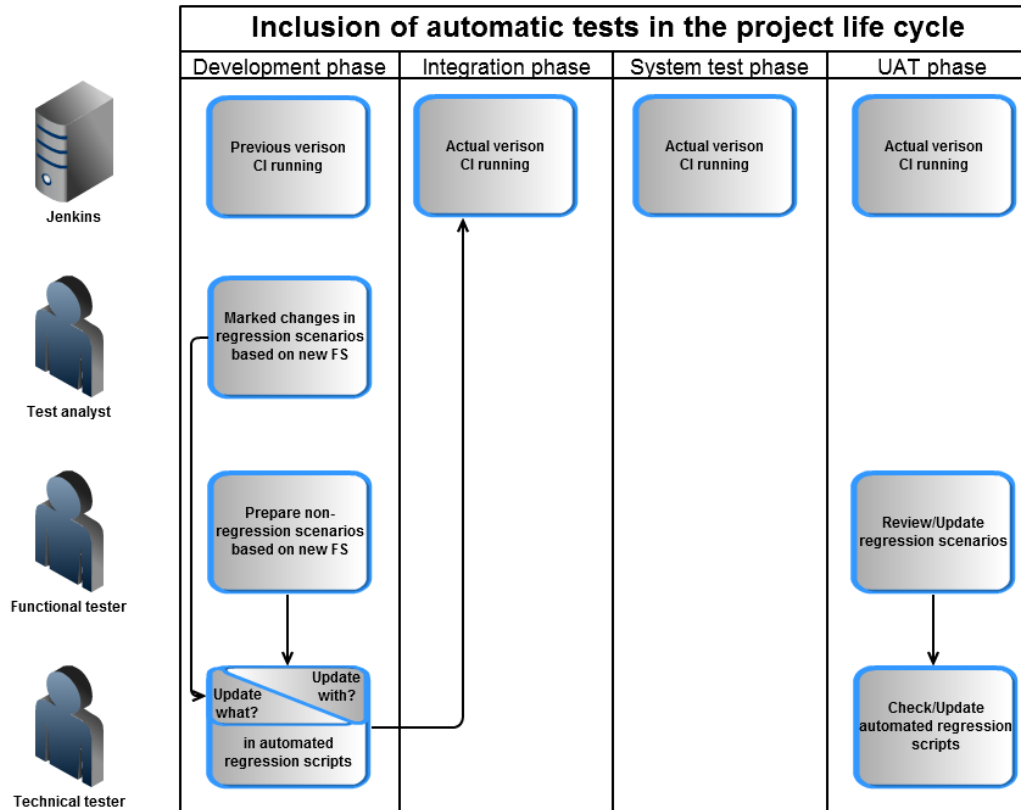


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Automation Test Process



Automation in Project Life Cycle



Maintenance of the Test

< Maintenance must not be expensive

- < avoid often changes of web element's identification
- < parametrization is necessary



Conclusion

Questions?

