Hello!

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Ask us anything!

Test
Automation
Talk & Demo
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Test Automation

WHAT is it**?**

⇒ **test automation** is the use of special software (separate from the software being tested) to control the execution of tests and the ***comparison of actual outcomes with predicted outcomes***.

WHY do we need it?

Why to automate?

Cheaper

Reduced human and technical risks

Faster

Fast feedback

Reliable

Increased test coverage

Motivation

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What to automate?

Non-functional requirements

Tests you need to run several times

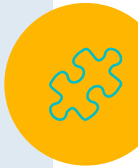
Smoke tests

API testing

Data driven testing

Regression Tests

OS & Browser combinations



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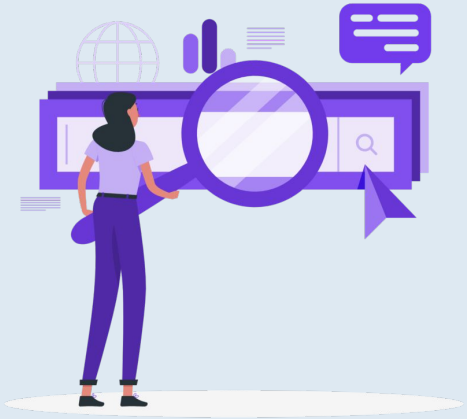
ONE DOES NOT SIMPLY
AUTOMATE ALL OF THE APPLICATION

What NOT to automate?

➔ Unstable design

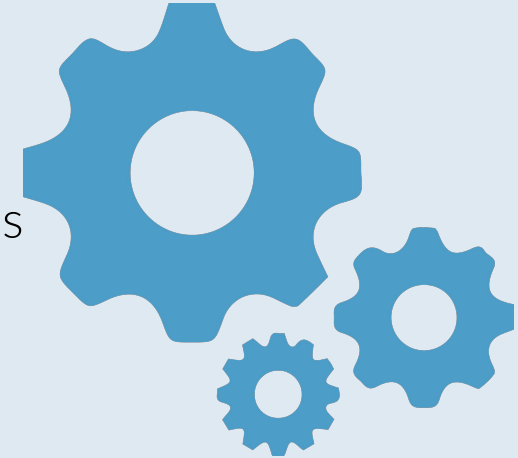
What NOT to automate?

- ➔ Unstable design
- ➔ Usability and UX



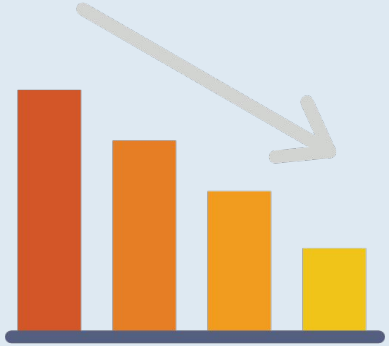
What NOT to automate?

- ➔ Unstable design
- ➔ Usability and UX
- ➔ Uncommon processes



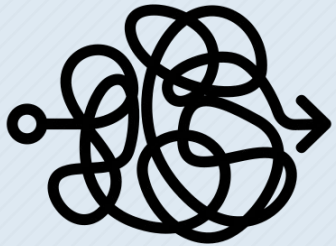
What NOT to automate?

- ➔ Unstable design
- ➔ Usability and UX
- ➔ Uncommon processes
- ➔ Low return on investment



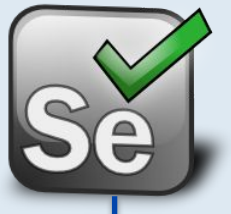
What NOT to automate?

- ➔ Unstable design
- ➔ Usability and UX
- ➔ Uncommon processes
- ➔ Low return on investment
- ➔ Highly complex processes



HOW to automate?

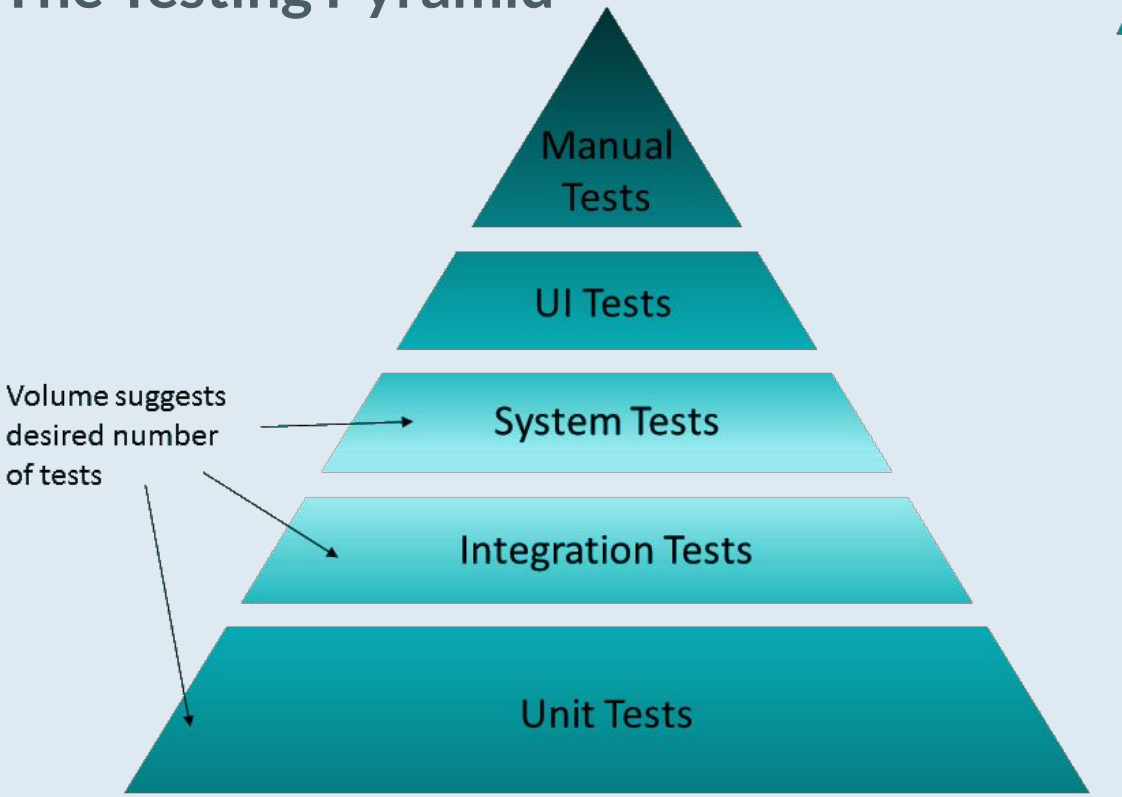
→ Programming language



→ Selenium WebDriver

→ Browser

The Testing Pyramid



Rising with the pyramid:

- Complexity
- Fragility
- Cost of maintenance
- Execution time
- Time to locate bug on test failure

The Practical Test Pyramid (martinfowler.com)

- There are tests that can't be automated and there are tests that can't be run manually.
- Just because a test is automatable doesn't necessary mean it should be automated!
- Remember, test tools aren't magic – but properly implemented they can work wonders!

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"Automation should not be used as a replacement of manual testing, but rather an enhancement of it."

- James Bach -

Why?

What to automate?

What NOT to automate?

Serenity BDD
TALK & DEMO

Serenity BDD

→ open source library
→ clear **structure** and **maintainable** acceptance criteria
→ good **reporting** → living documentation
→ **readability**

Compatible frameworks:

- ➔ Serenity with JBehave
- ➔ Serenity with Cucumber
- ➔ Serenity with JUnit
- ➔ Serenity with Screenplay Pattern

SETUP ENVIRONMENT & PREREQUISITES

Maven is Java based tool, so the very first requirement is to have JDK installed in your machine.

Download and install **Java JDK:**
https://www.oracle.com/java/technologies/javase-downloads.html

Download and install **Apache Maven:**
http://maven.apache.org/download.cgi

Download and install **Mozilla Firefox:**
http://www.mozilla.org/

SETUP ENVIRONMENT - STEPS

Step 1 - verify Java installation in your machine **c:\>java -version**

Step 2 - set JAVA environment: **JAVA_HOME to C:\Program Files\Java\jdk1.6.0_21**

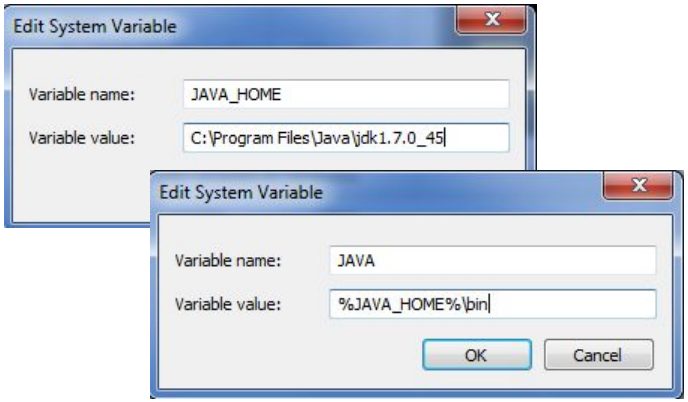
Step 3 - download Maven archive: **http://maven.apache.org/download.html**

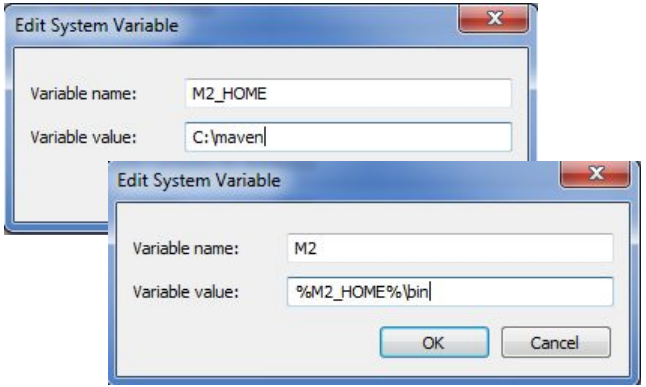
Step 4 - extract the Maven archive: **C:\Program Files\Apache Software Foundation\apache-maven**

SETUP ENVIRONMENT - STEPS

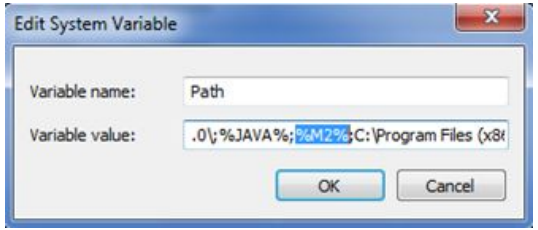
Start → Control Panel → System and Security → System → Advanced system settings → Environment Variables

Step 5 - set Maven environment variables:





Step 6 – set Path for Maven and Java

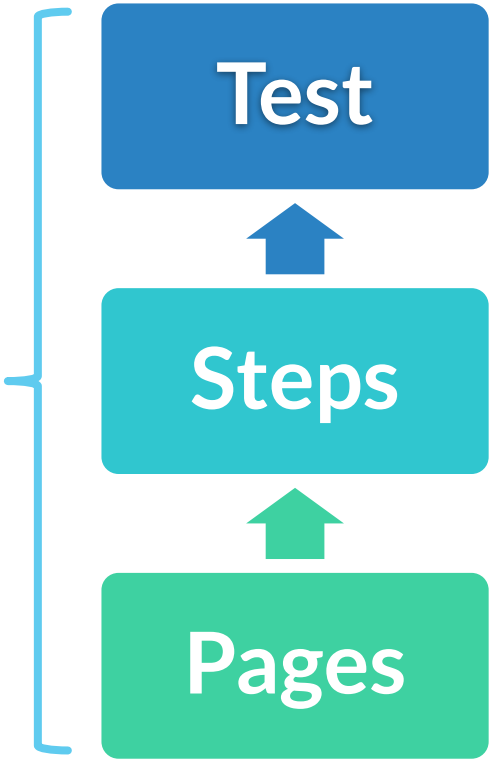


Step 7 - verify Maven installation:

c:\> mvn --version

APPROACH

levels of abstraction



Test flow → Goals

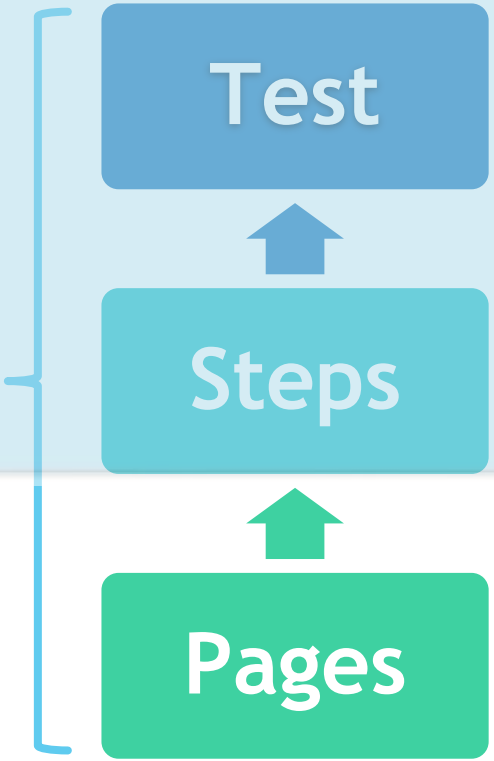
Action grouping → Tasks

Element mapping and actions → Interactions

Bottom Up Approach

APPROACH

levels of abstraction



Test flow → Goals

Action grouping → Tasks

Element mapping and actions → Interactions

Bottom Up Approach

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APPROACH

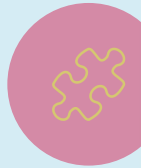
levels of abstraction

Test — Test flow → Goals

Steps — Action grouping → Tasks

Pages — Element mapping and actions → Interactions

Bottom Up Approach



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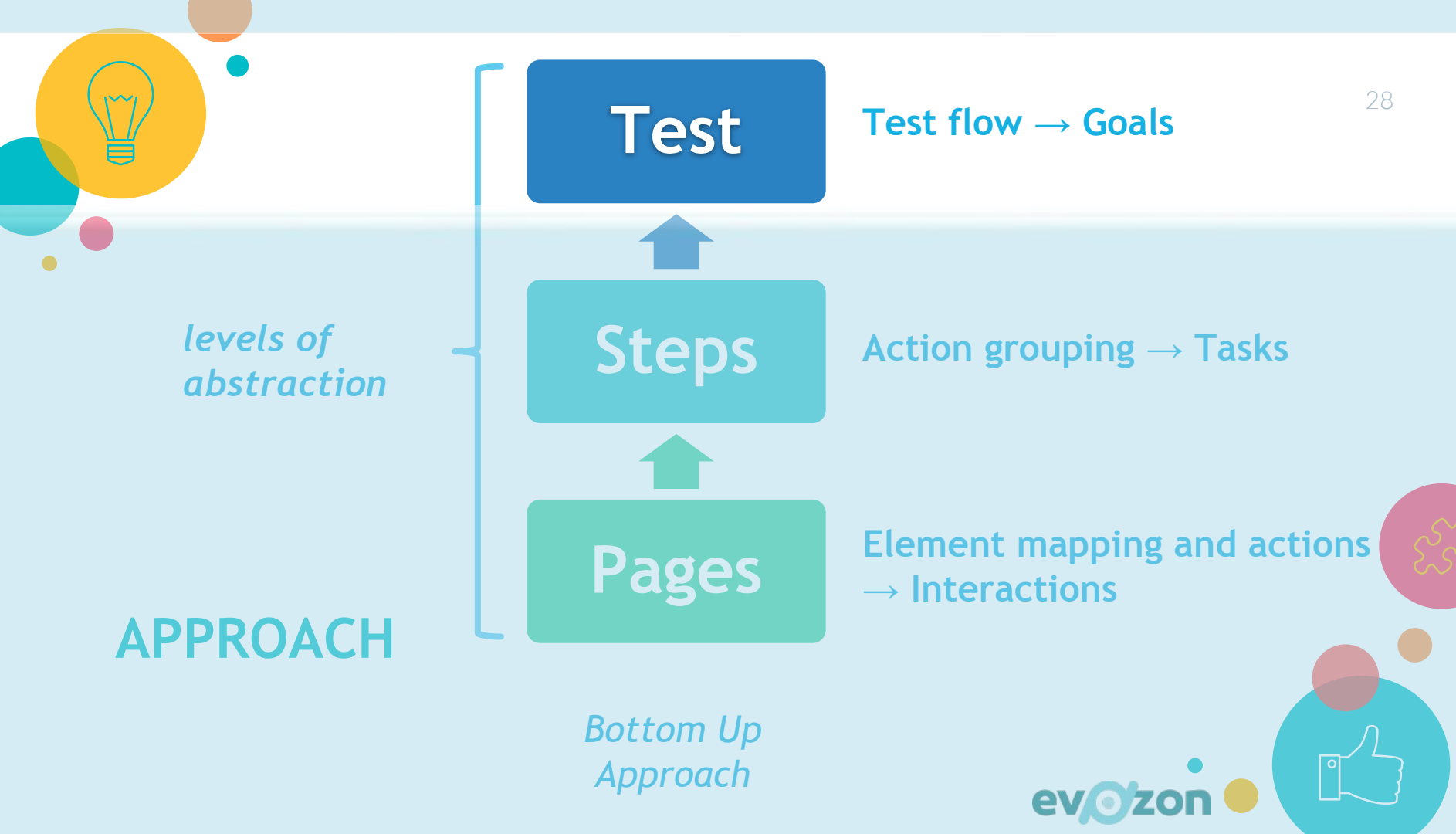
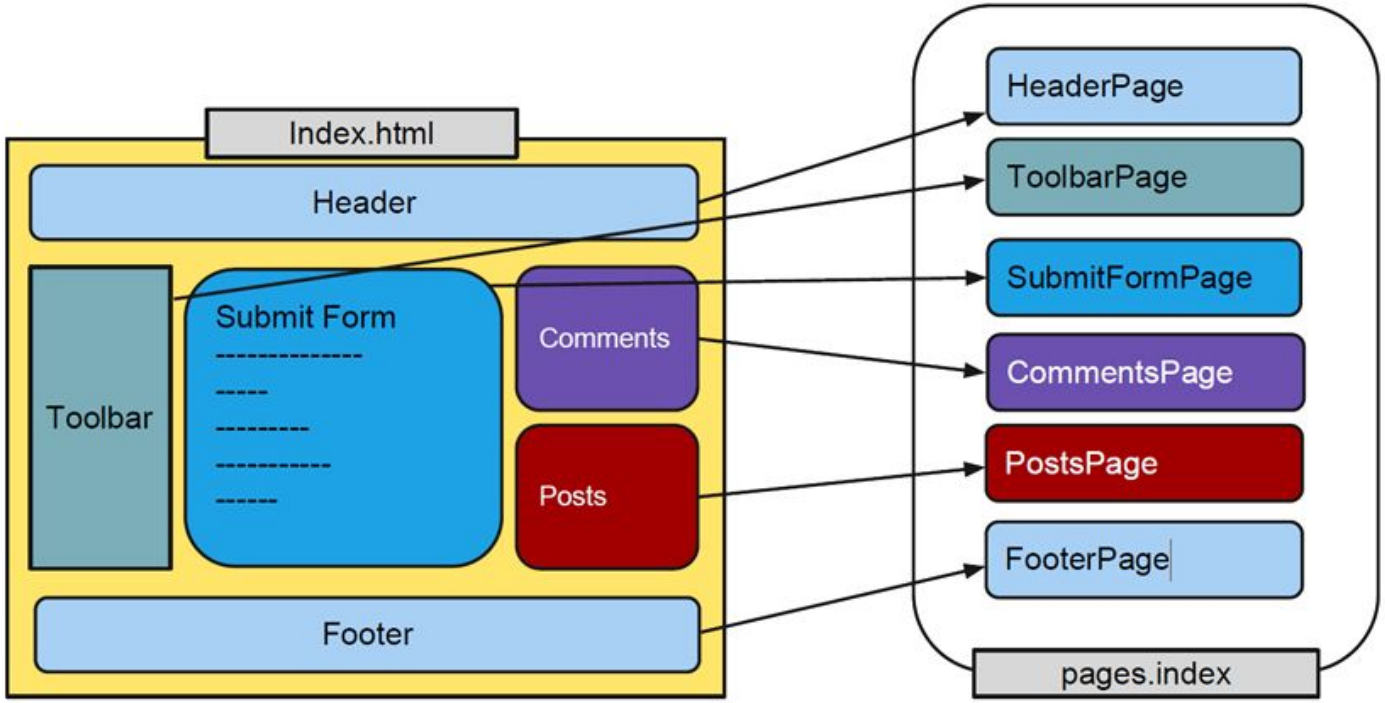
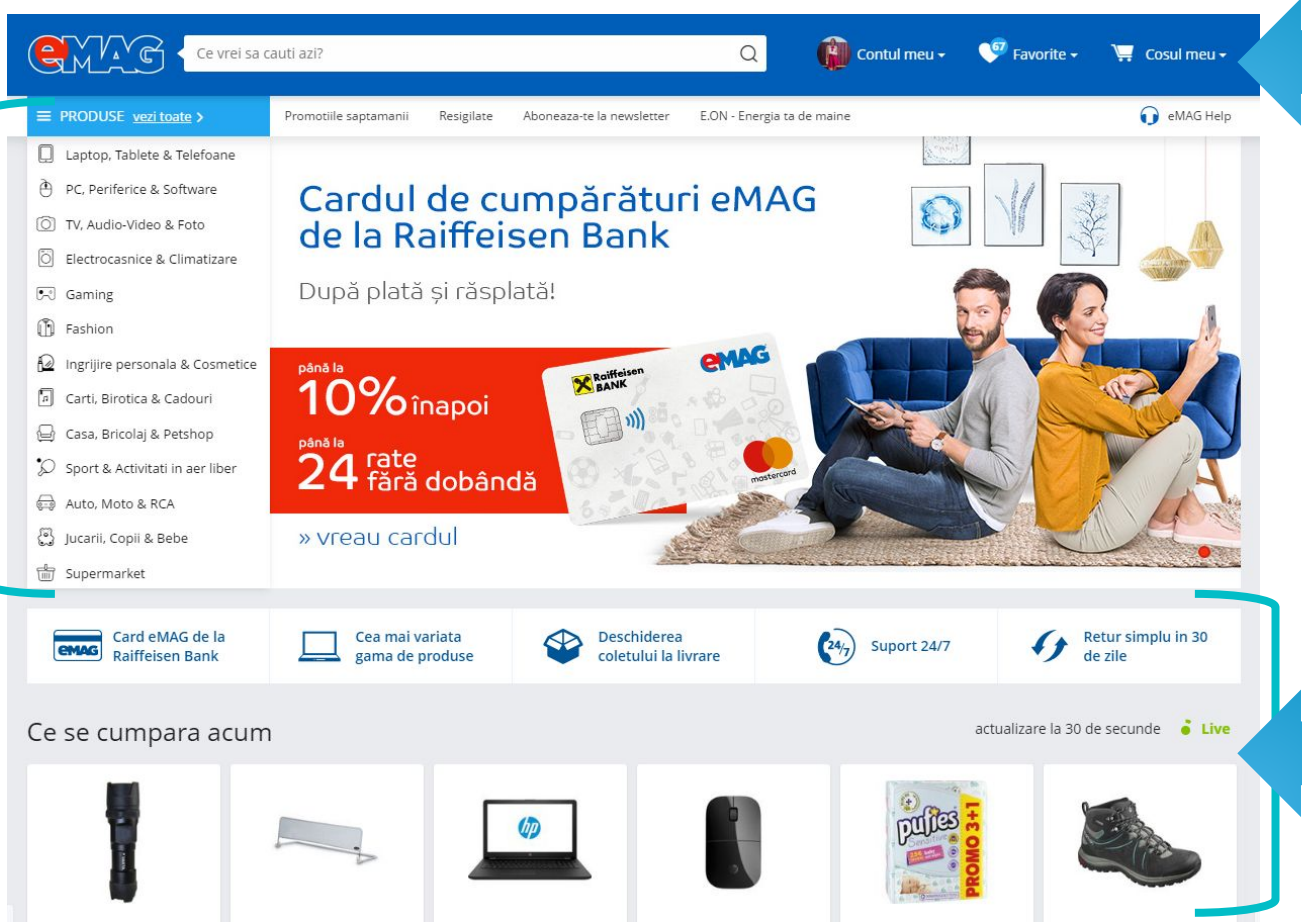

Test
Test flow → Goals
Steps
Action grouping → Tasks
Pages
Element mapping and actions → Interactions
levels of abstraction
APPROACH
Bottom Up Approach

1. Breaking a Webpage into Pages



WebElement → HTML element



HeaderPage.java

GlobalNavigation Page.java

LandingPage.java

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eMAG Marketplace

Creste-ti afacerea!

- Acces instant la peste 500.000 de clienti unici, zilnic
- Inregistrarea afacerii tale este gratuita
- Esti la doar cateva click-uri de vanzari spectaculoase

Vreau sa vand pe eMAG

Descarcă aplicația eMAG

Lasă-ne numărul tău de telefon și îți vom trimite link-ul de download.

07xxxxxxxx

Trimite SMS

GET IT ON Google Play

Download on the App Store

Servicii pentru clienti

- Deschiderea coletului la livrare
- 30 de zile drept de retur
- Garantii si service
- Suport 24/7
- Plata cu cardul in rate fara dobanda
- Finantare in rate prin eCREDIT

Comenzi si livrare

- Contul meu la eMAG
- Cum comand online
- Livrarea comenzilor
- Cele mai noi produse
- eMAG Marketplace
- Modalitati de finantare si plata

Suport clienti

- Suport 24/7
- Formular reparatie produs
- Formular returnare produs
- Suport online
- Intrebari frecvente
- Contact

eMAG.ro

- Vreau sa vand pe eMAG
- Termeni si conditii
- Prelucrarea datelor cu caracter personal
- Politica de utilizare Cookie-uri
- ANPC
- eMAG Corporate

FooterPage.java

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emag.pl emag.bg emag.hu

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1.1 Pages Content

WebElement mapping

Methods/actions definitions

```
@DefaultUrl(helpers.Constants.url)
public class HeaderPage extends PageObject {

    @FindBy(className = "navbar-brand")
    private WebElementFacade logo;

    @FindBy(id = "searchboxTrigger")
    private WebElementFacade searchBox;

    @FindBy(css = ".searchbox-submit-button")
    private WebElementFacade searchIcon;

    @FindBy(id = "my_account")
    private WebElementFacade myAccount;

    @FindBy(id = "my_wishlist")
    private WebElementFacade myWishlist;

    @FindBy(id = "my_cart")
    private WebElementFacade myCart;

    public void type_keywords(String keyword) {
        searchBox.type(keyword);
    }

    public void search() {
        searchIcon.waitUntilClickable();
        searchIcon.click();
    }

    public void go_to_cart() {
        myCart.waitUntilClickable();
        myCart.click();
    }
```

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What is a **step** ?

→ A stage in a process

→ One of a series of actions, processes, or measures taken to achieve a goal.

2.1 Steps Content

Page declarations

Step Annotation

StepGroup

```java
public class HeaderSteps {

    HeaderPage headerPage;
    SearchResultsPage searchResutsPage;
    GlobalNavigationPage globalNavPage;

    @Step
    public void navigate_to_shopping_cart() {
        headerPage.go_to_cart();
    }

    @Step
    public void search_product(String productName) {
        headerPage.type_keywords(productName);
        headerPage.search();
        assertTrue(searchResutsPage.get_search_results_page_term().contains(productName));
    }

    @Step
    public void global_header_elements_should_be_visible()
    {
        assertTrue(headerPage.my_account_is_visible());
        assertTrue(headerPage.my_cart_is_visible());
        assertTrue(headerPage.my_wishlist_is_visible());
    }

    @Step
    public void global_nav_help_link_should_be_visible()
    {
        assertTrue(globalNavPage.help_link_is_visible());
    }

    @Step
    public void global_nav_products_link_should_be_visible()
    {
        assertTrue(globalNavPage.products_link_is_visible());
    }

    @Step
    public void global_nav_promotions_link_should_be_visible()
    {
        assertTrue(globalNavPage.promotions_link_is_visible());
    }

    @StepGroup
    public void global_navigation_elements_should_be_visible() {
        global_nav_help_link_should_be_visible();
        global_nav_products_link_should_be_visible();
        global_nav_promotions_link_should_be_visible();
    }
```


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3. Test - Basic Structure

3.1 Test – Data Driven Structure (with CSV)

Test Runner

Parameterized test

Data Driven Set/Get

```java
@RunWith(SerenityParameterizedRunner.class)
@UseTestDataFrom("src/test/resources/searchTerms.csv")
public class SearchTest {

    @Managed(uniqueSession = true)
    public WebDriver webdriver;

    @Steps
    public HeaderSteps headerSteps;
    @Steps
    public NavigationSteps navigationSteps;

    @Test
    public void add_to_cart_searched_product() {
        navigationSteps.navigate_to_homepage();
        headerSteps.search_product(getSearchTerm());
    }

    public String searchTerm;

    @Qualifier
    public String getQualifier() {
        return searchTerm;
    }

    public String getSearchTerm() {
        return searchTerm;
    }

    public void setSearchTerm(String searchTerm) {
        this.searchTerm = searchTerm;
    }
}
```


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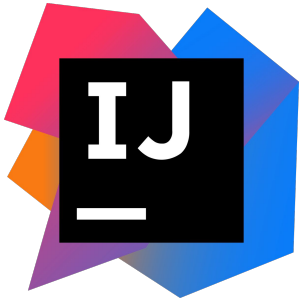
DEMO

Serenity BDD

with Junit

SETUP ENVIRONMENT & PREREQUISITES

maven



Serenity BDD

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GENERATE PROJECT

1. Execute the following mvn command:

   mvn archetype:generate **OR** *mvn archetype:generate -Dfilter=serenity (for filtered results)*

2. Import project to IDE → Import → Maven Project → select project

3. Run tests:

   mvn clean verify

4. Aggregate results:

   mvn serenity:aggregate

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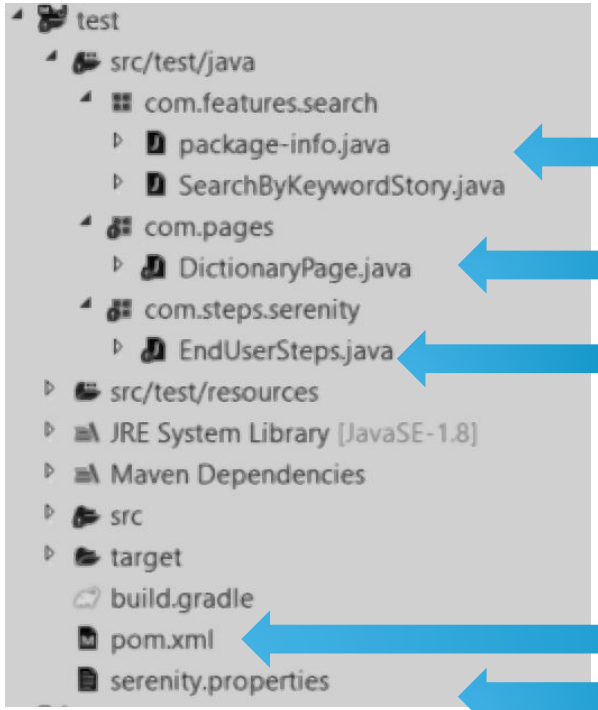
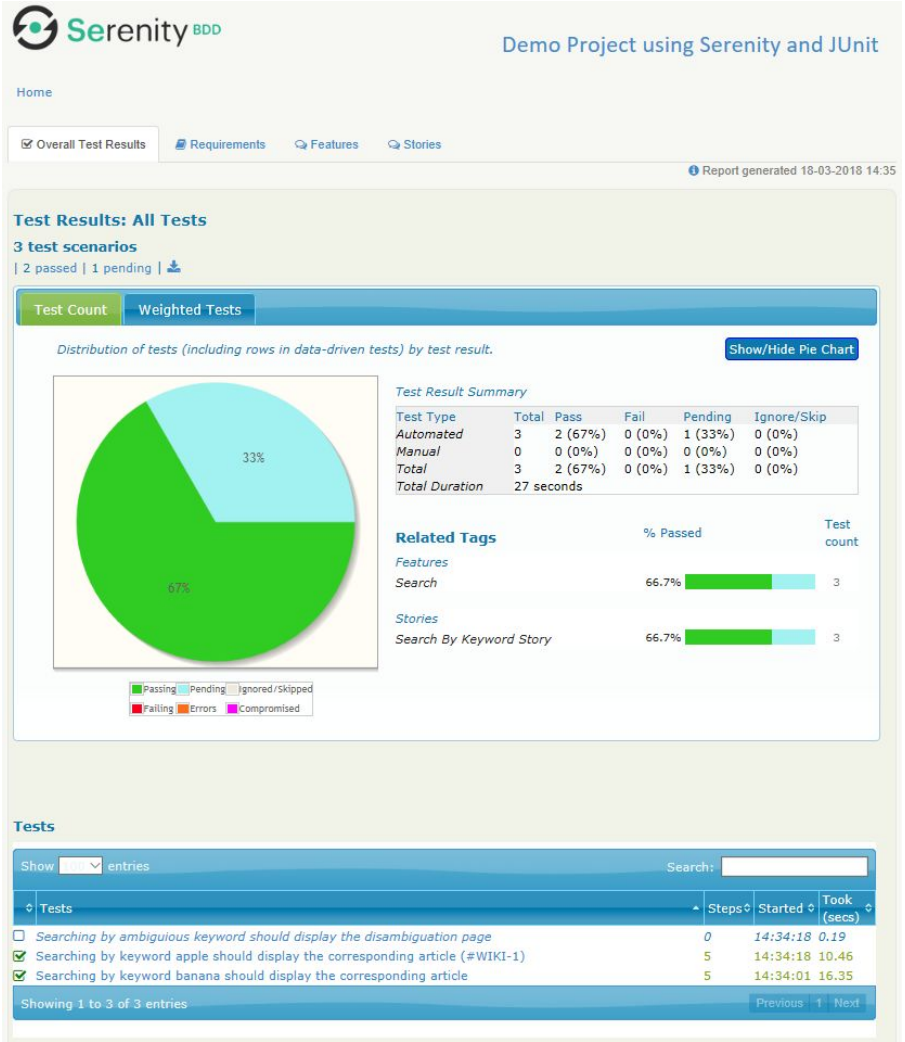
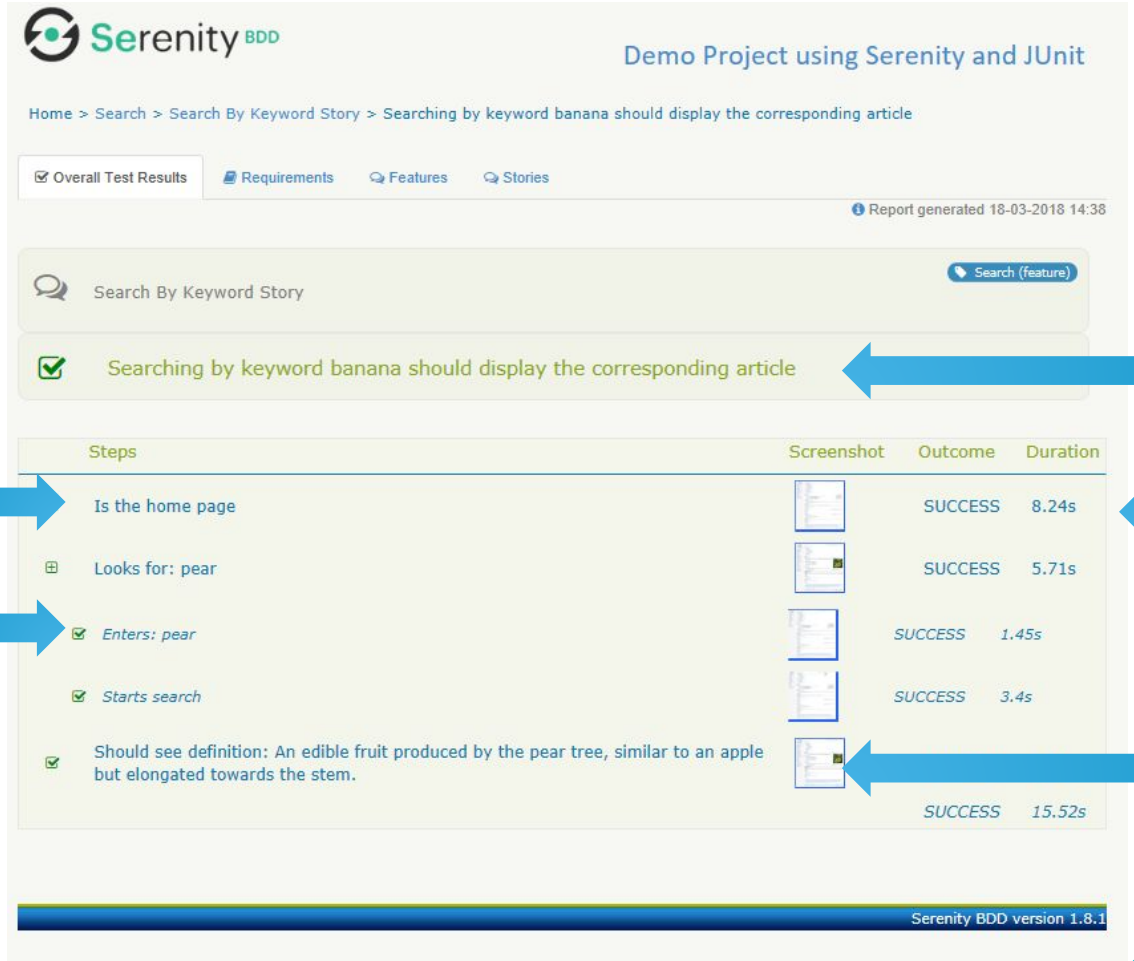
Project View



REPORTING


Serenity BDD
Demo Project using Serenity and JUnit
Home
Overall Test Results
Requirements
Features
Stories
Report generated 18-03-2018 14:35
Test Results: All Tests
3 test scenarios
| 2 passed | 1 pending |
Test Count
Weighted Tests
Distribution of tests (including rows in data-driven tests) by test result.
Show/Hide Pie Chart
33%
67%
Passing
Pending
Ignored/Skipped
Failing
Errors
Compromised
Test Result Summary
Test Type Total Pass Fail Pending Ignore/Skip
Automated 3 2 (67%) 0 (0%) 1 (33%) 0 (0%)
Manual 0 0 (0%) 0 (0%) 0 (0%) 0 (0%)
Total 3 2 (67%) 0 (0%) 1 (33%) 0 (0%)
Total Duration 27 seconds
Related Tags
% Passed
Test count
Features
Search
66.7%
3
Stories
Search By Keyword Story
66.7%
3
Tests
Show 100 entries
Search:
Tests
Steps
Started
Took (secs)
Searching by ambiguious keyword should display the disambiguation page 0 14:34:18 0.19
Searching by keyword apple should display the corresponding article (#WIKI-1) 5 14:34:18 10.46
Searching by keyword banana should display the corresponding article 5 14:34:01 16.35
Showing 1 to 3 of 3 entries
Previous
1
Next



TEST

Step

Duration

Step group

Screenshot

Test Automation **Tools**

Serenity BDD

Se

Cucumber
Supported by SMARTBEAR

cypress

TestCafé

WebdriverIO

CodeceptJS

https://www.evozon.com/internship-info

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TESTING INTERNSHIP

Learn Manual testing & Automation Testing (with Java & C#).

Use Java, C# as programming technologies, Selenium Webdriver as a tool for automation testing and Serenity framework.

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