

Open Testing:

*What if we open our testing
like we open our source?*

Andrew Knight

@AutomationPanda
Applitools Developer Advocate
Test Automation U Director



A promotional banner for Test Automation University. The background is a stylized landscape with a dark blue foreground, a yellow middle ground, and a white sky. On the right, two flags are planted in the ground: a large teal flag with the 'TAU' logo and a smaller black flag with a colorful circular logo. On the left, the 'TAU' logo is displayed in large, blue-outlined letters, followed by the text 'TEST AUTOMATION UNIVERSITY' and 'Powered by applitools'. Below this, the text 'Become a test automation superstar!' is written. A yellow box with a blue border contains the text 'All Courses Free!'. At the bottom, the URL 'testautomationu.applitools.com' is displayed in white text on a dark blue background.

TAU TEST AUTOMATION UNIVERSITY
Powered by applitools

Become a test automation superstar!

All Courses Free!

testautomationu.applitools.com

Open Testing:

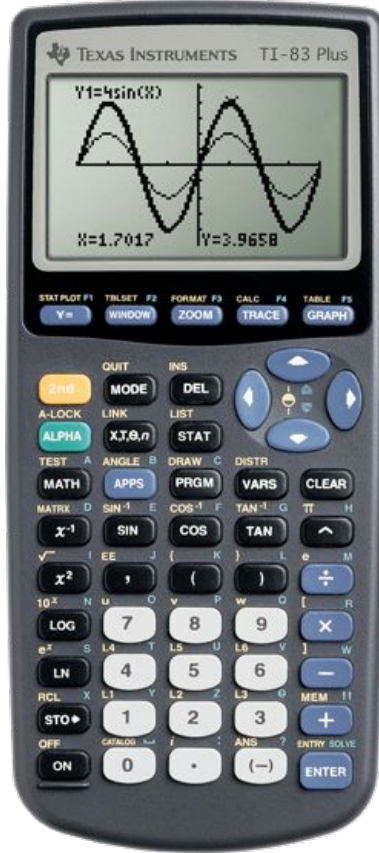
*What if we open our tests
like we open our source?*

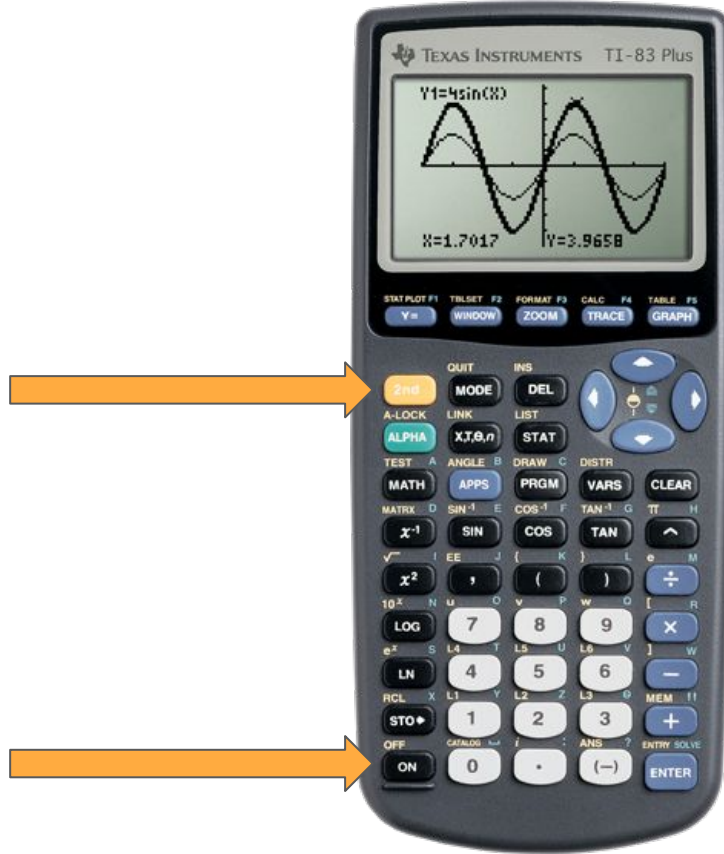


PARKVILLE HIGH SCHOOL KNIGHTS

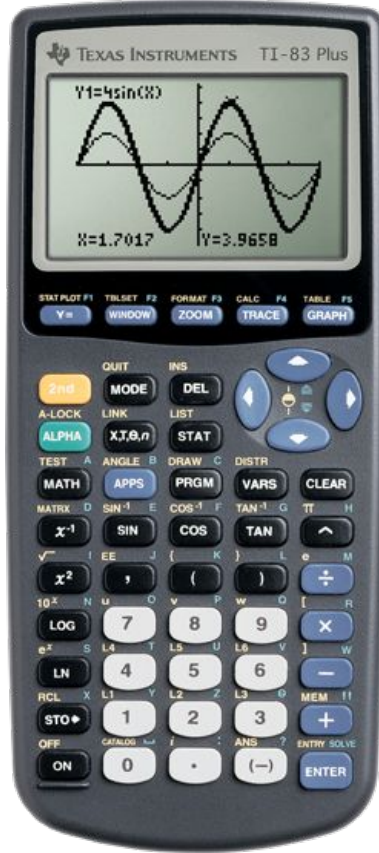
PARKVILLE, MD • BALTIMORE COUNTY



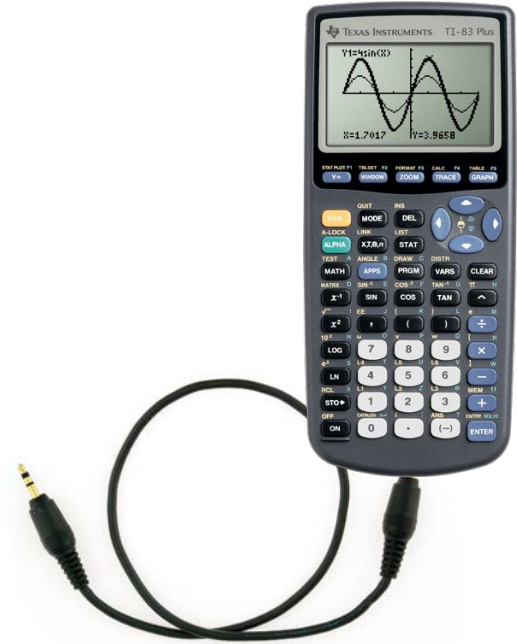
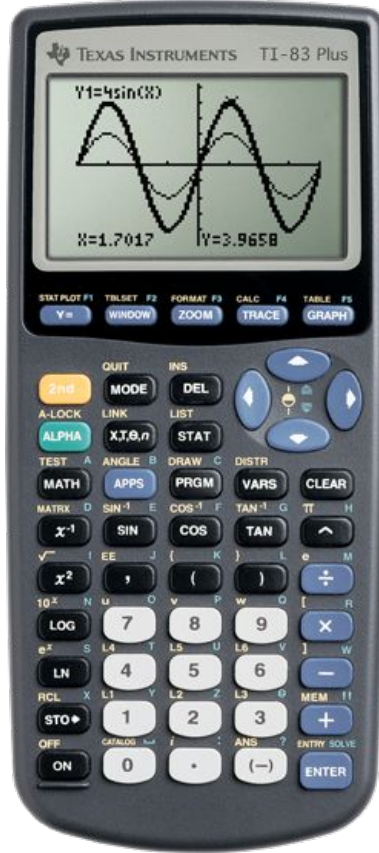




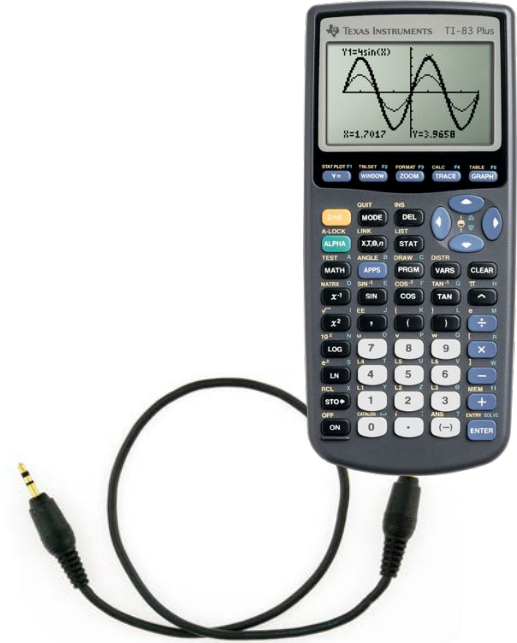
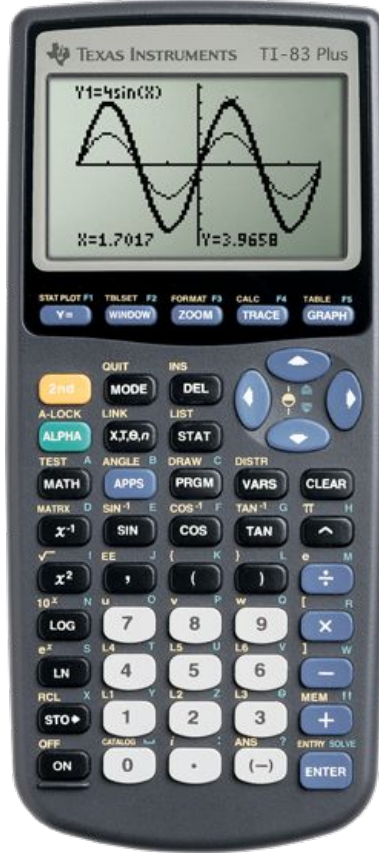
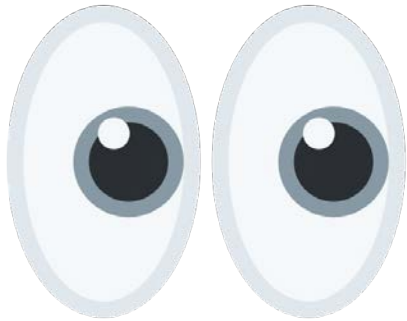
```
PROGRAM: EXAMPLE
:Menu("ARE YOU S
URE?", "YES", 1, "N
O", 2
:Lbl 1
:Lbl 2
```



```
PROGRAM:EXAMPLE
:Menu("ARE YOU S
URE?", "YES", 1, "N
O", 2
:Lbl 1
:Lbl 2
```




```
PROGRAM:EXAMPLE
:Menu("ARE YOU S
URE?", "YES", 1, "N
O", 2
:Lbl 1
:Lbl 2
```



Open Source Lesson #1:

Open source helps me learn.





JUnit



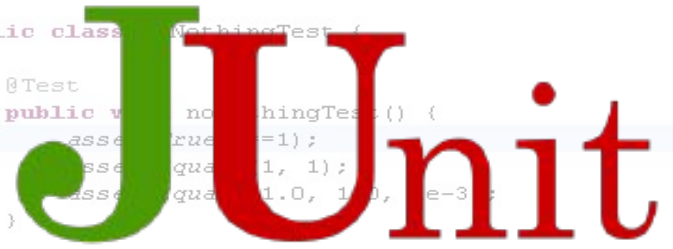
```
package c09quality;

import static org.junit.Assert.assertEquals;
import static org.junit.Assert.assertTrue;

import org.junit.Test;

public class DoNothingTest {

    @Test
    public void noNothingTest() {
        assertTrue(1=1);
        assertEquals(1, 1);
        assertEquals(1.0, 1.0, 1e-3);
    }
}
```



JUnit Test Results:

Finished after 0.016 seconds

Runs: 1/1 Errors: 0 Failures: 0

c09quality.DoNothingTest [Runner: JUnit 4] ((Failure Trace

- noNothingTest (0.000 s)

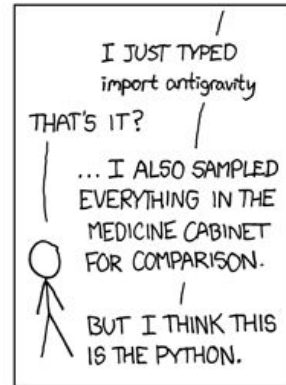
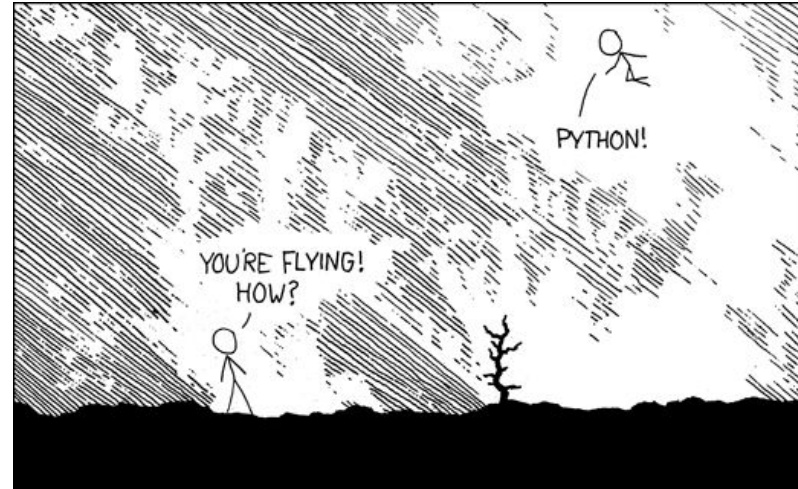
Open Source

Lesson #2:

*Open source helps me
become a better
developer.*

Open Source Lesson #2:

*Open source helps me
become a better
developer.*



JUnit 
TestNG 



 specflow

 Jasmine

 Cucumber
Supported by SMARTBEAR









 Flask





<https://github.com/q2ebanking/boa-constrictor>

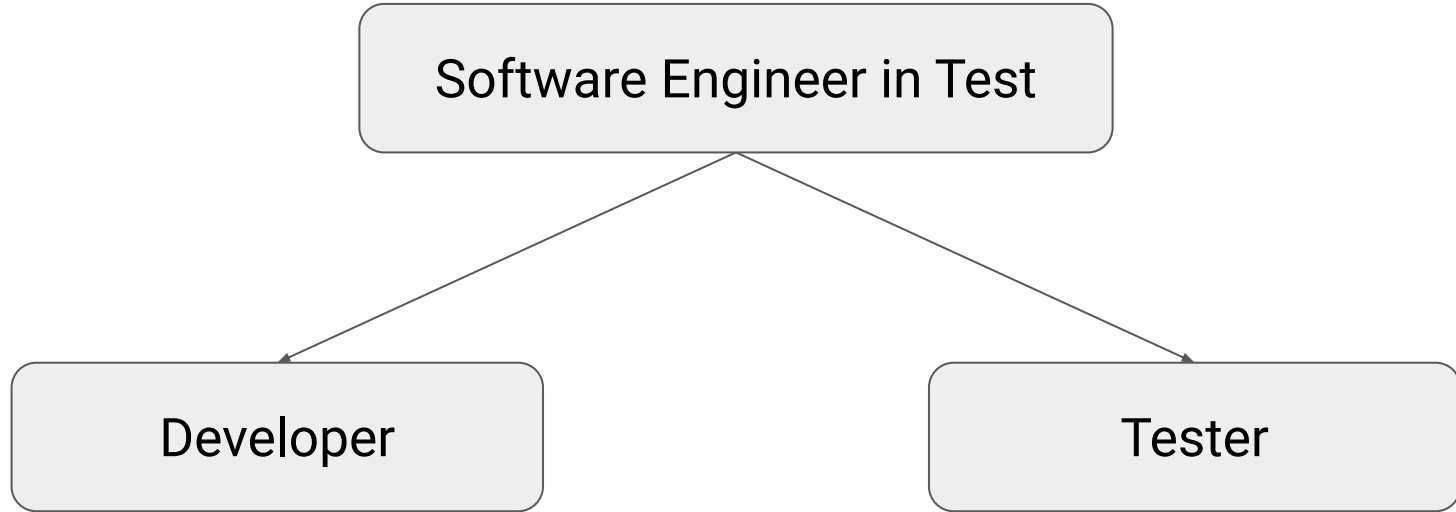
Open Source Lesson #3:

*Open source helps me
become a better maintainer.*

Software Engineer in Test

Software Engineer in Test


Developer



**Software quality has a
problem with quality.**

**Software quality has a
problem with quality.**






Poor
Programming

**Software quality has a
problem with quality.**



Copypasta



Poor
Programming


**Software quality has a
problem with quality.**



Copypasta



Flaky
Tests



Poor
Programming



No Value

**Software quality has a
problem with quality.**



Copypasta



Flaky
Tests

Poor
Programming

No Value

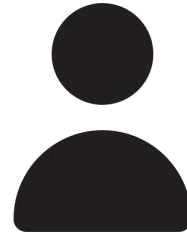
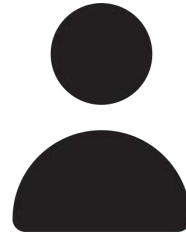
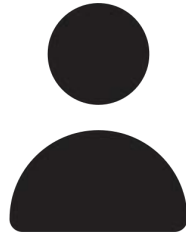
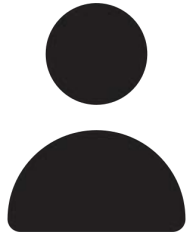
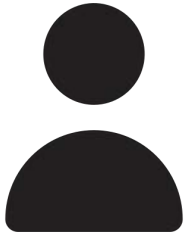
???

Copypasta

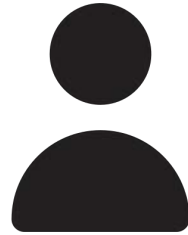
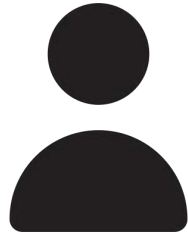
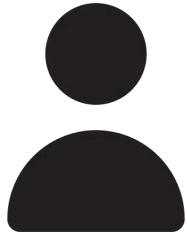
Flaky
Tests

Be open with testing!

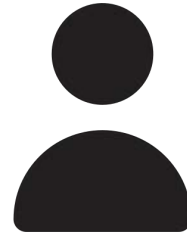
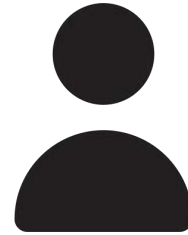
1. Help people learn testing
2. Help people become better testers
3. Help people become better test maintainers

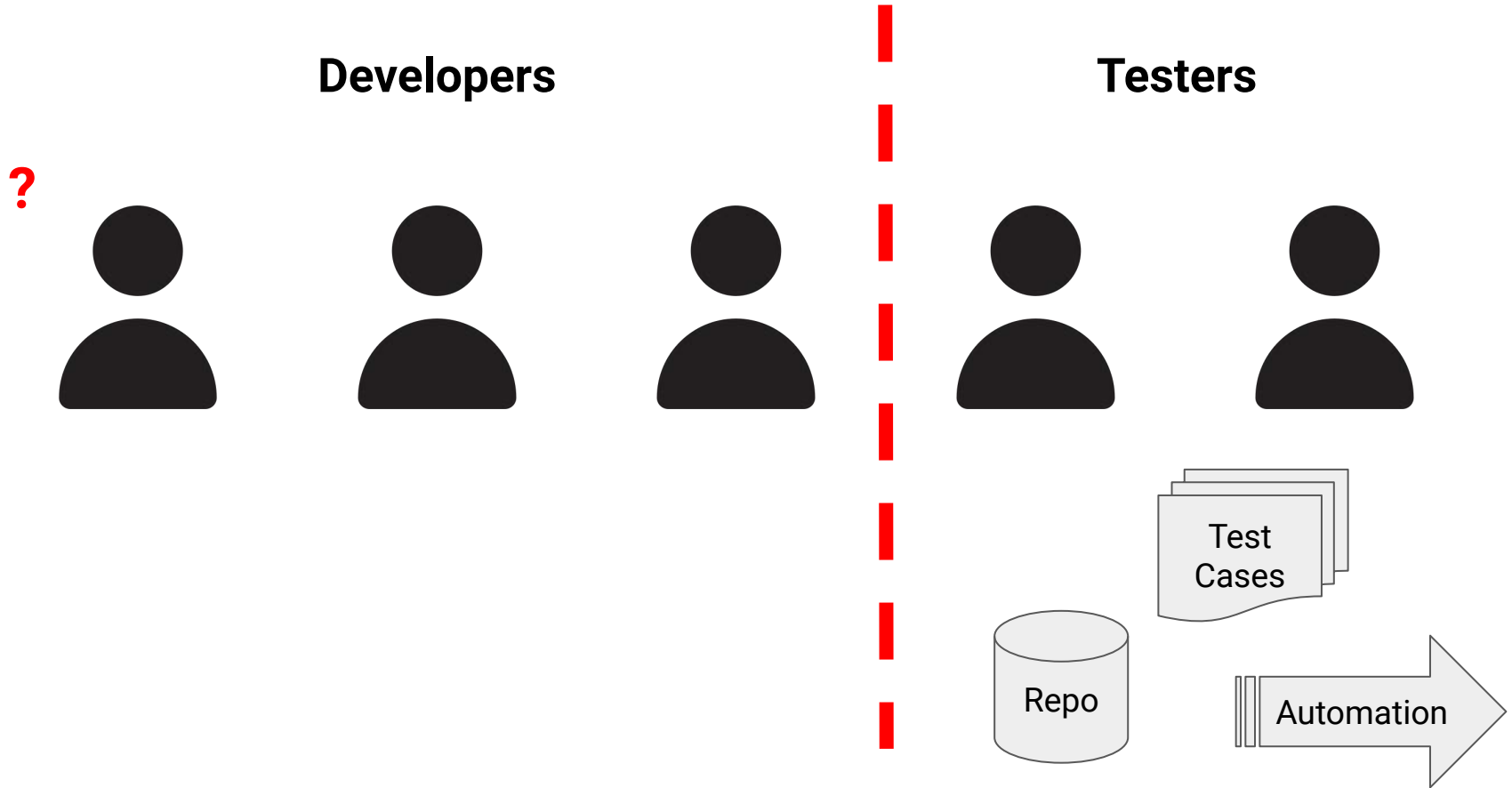


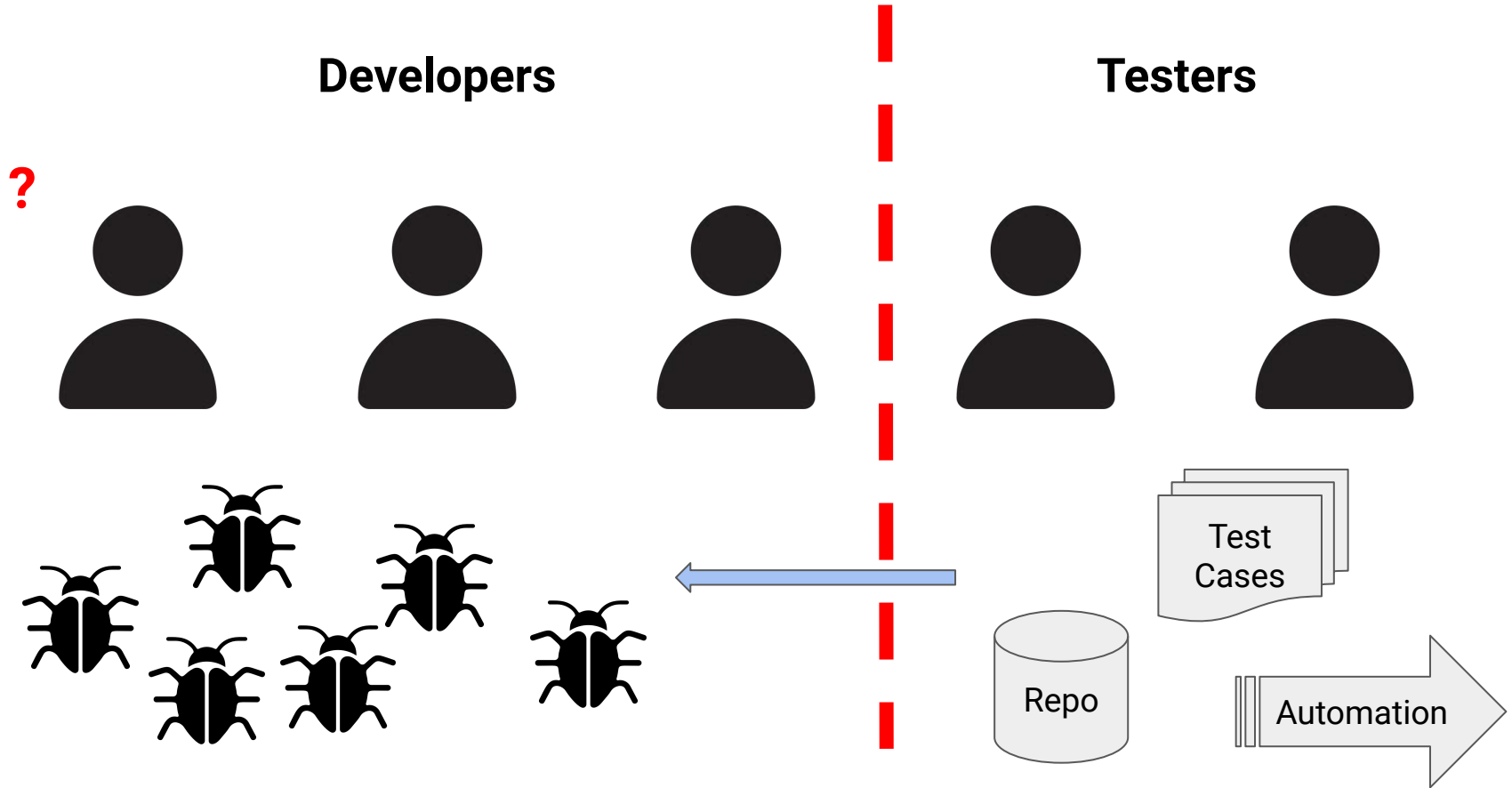
Developers

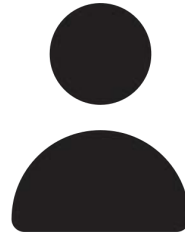
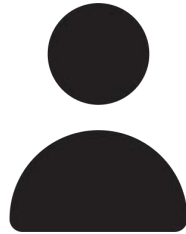
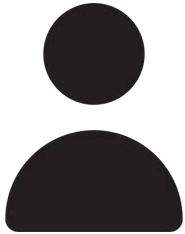


Testers

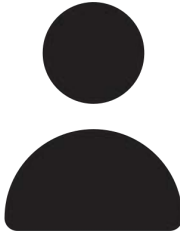
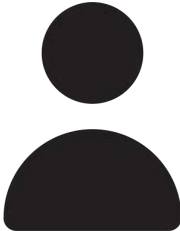
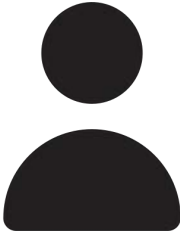




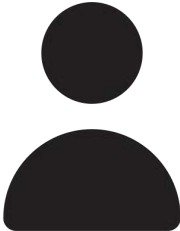




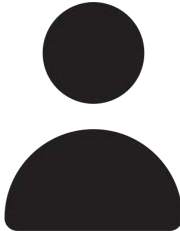
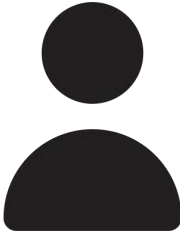
Biz



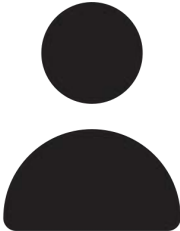
Biz



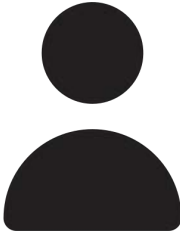
Dev



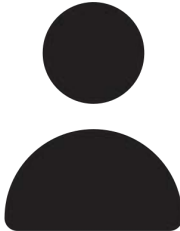
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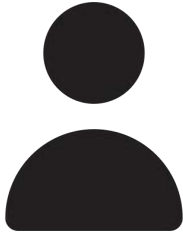
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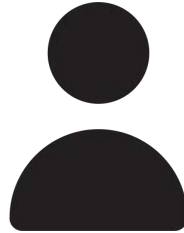
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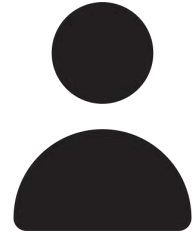
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Dev

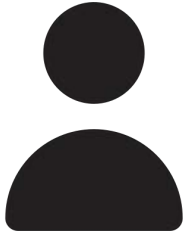


Test

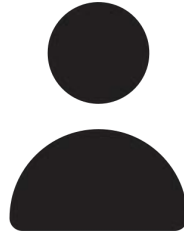


The Three Amigos

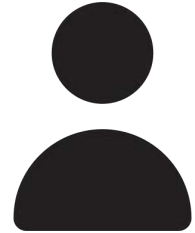
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Dev

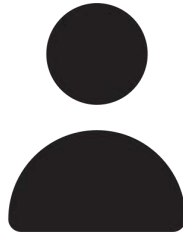


Test

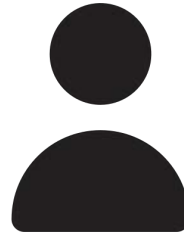


The Three Amigos

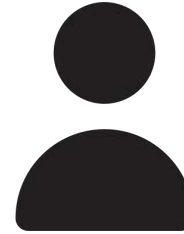
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Dev

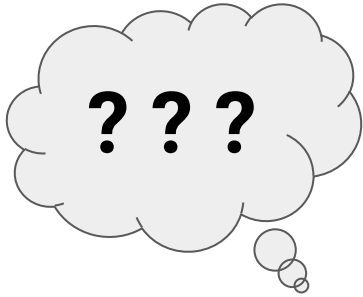


Test

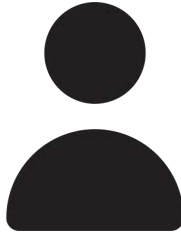


The Three Amigos

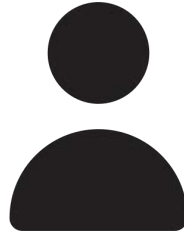
Question Storming



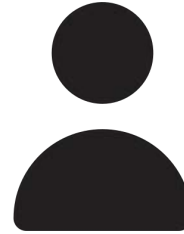
Biz



Dev



Test

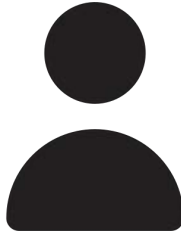


The Three Amigos

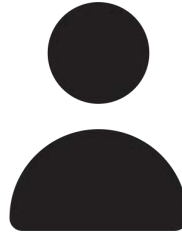
Question Storming



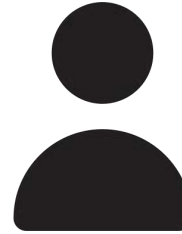
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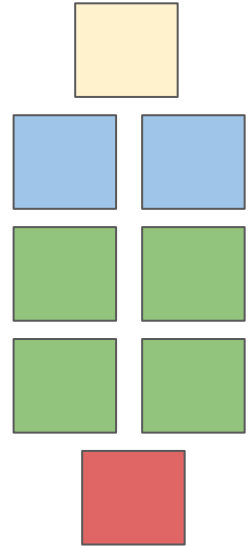
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Test

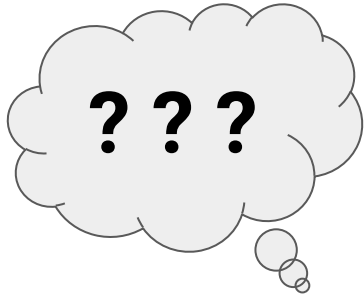


Example Mapping

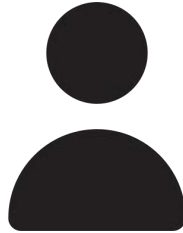


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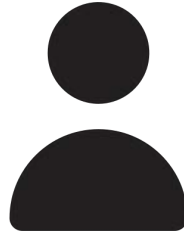
Question Storming



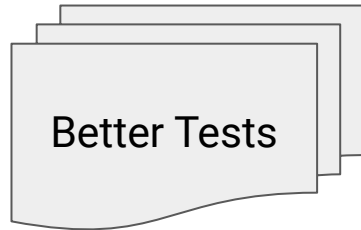
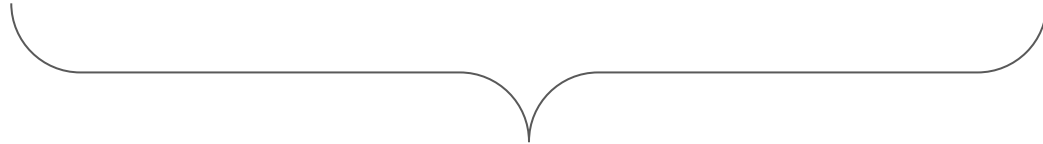
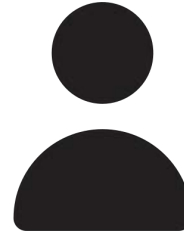
Biz



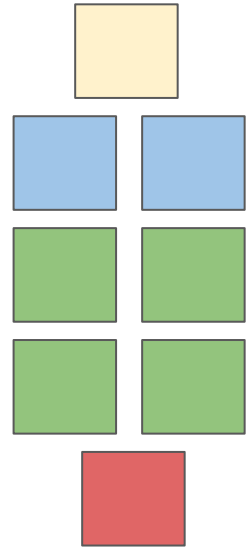
Dev



Test



Example Mapping





Steve



Steve



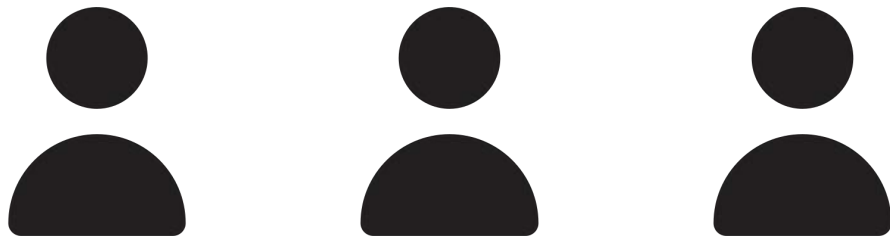
Software Engineer at Q2

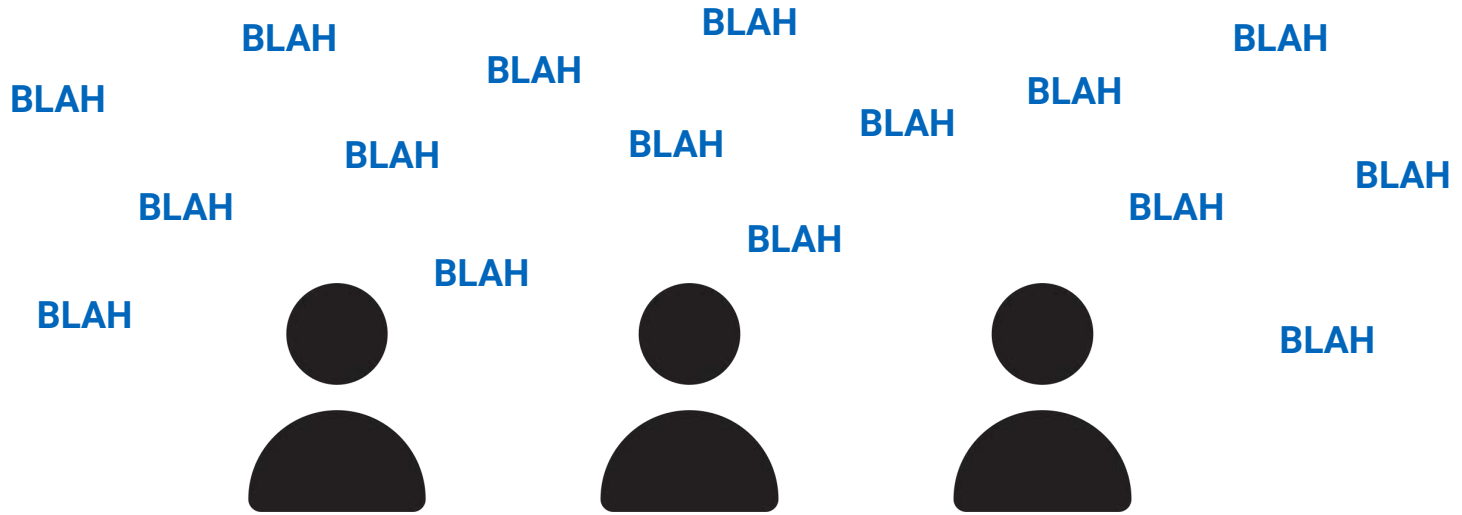
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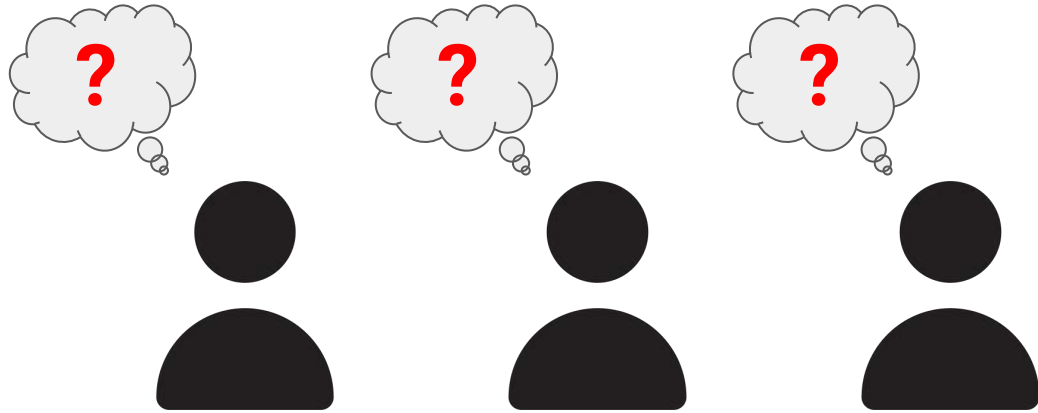


Software Engineer at Q2

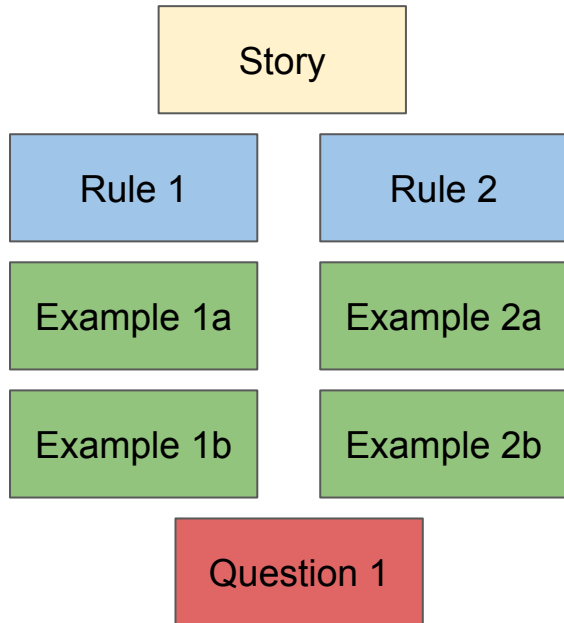
In Test



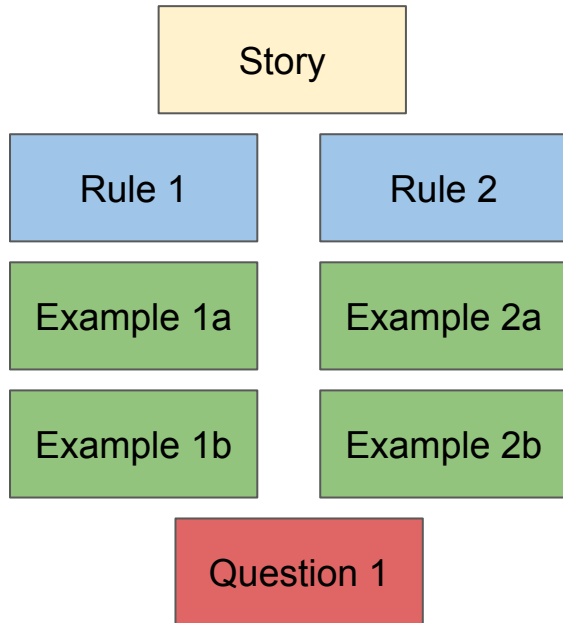




Example Mapping



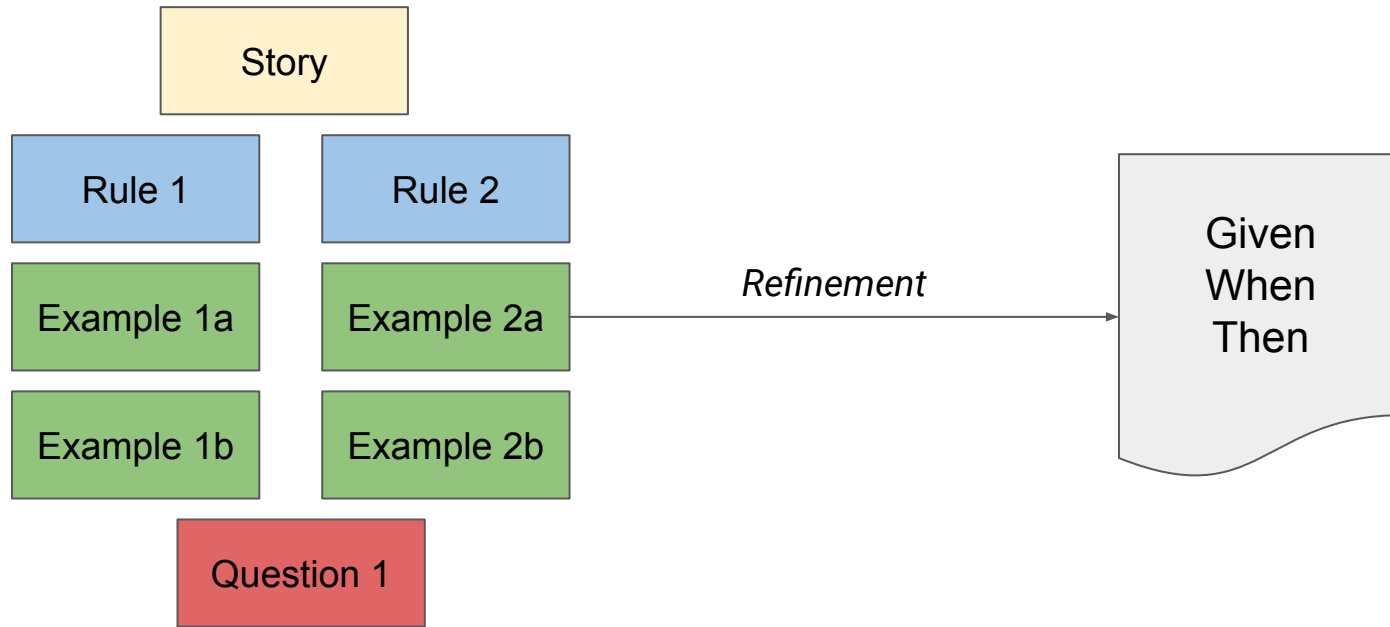
Example Mapping



<https://automationpanda.com/2018/02/27/bdd-example-mapping/>

Example Mapping

Specification by Example



<https://automationpanda.com/2018/02/27/bdd-example-mapping/>

As a web surfer,
I want to find pages online,
So I can learn new things.

Search engine returns pages
related to search phrases.

Search for “panda” and get
pages about pandas.

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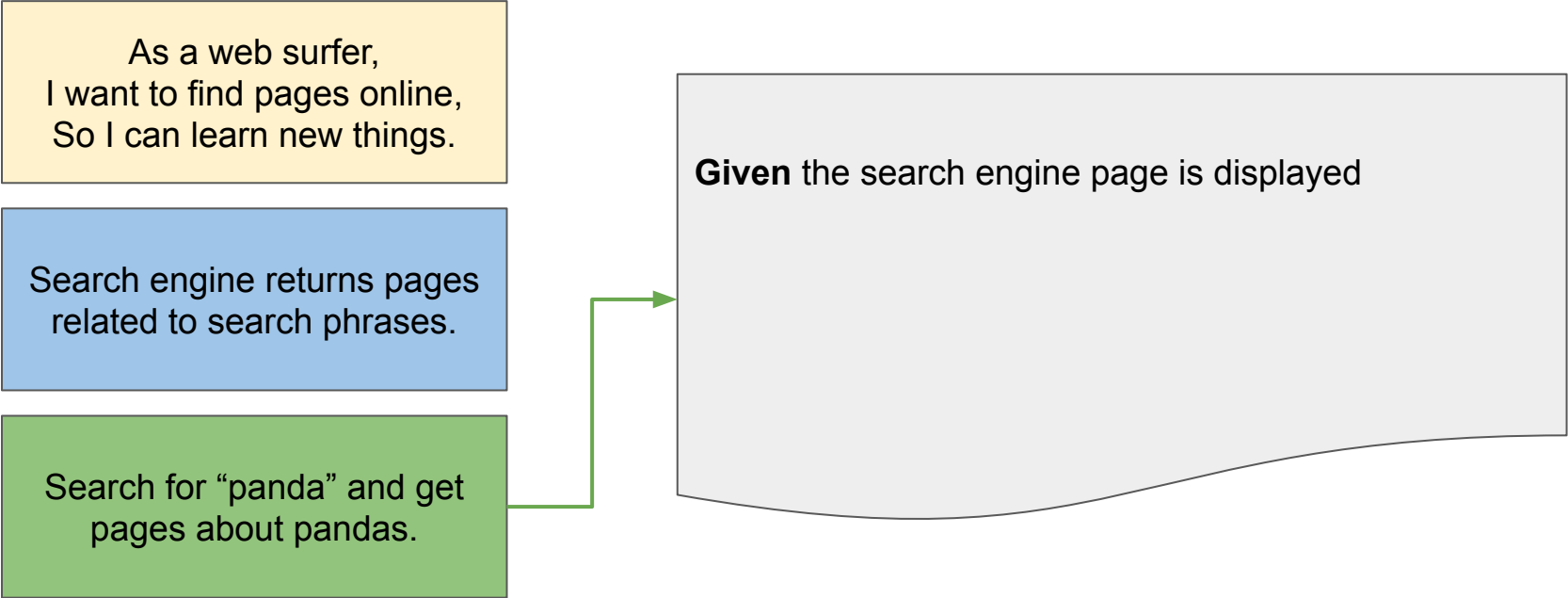


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Given the search engine page is displayed



As a web surfer,
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Search engine returns pages
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Search for “panda” and get
pages about pandas.

Given the search engine page is displayed

When the user searches for the phrase “panda”

As a web surfer,
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So I can learn new things.

Search engine returns pages
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Search for “panda” and get
pages about pandas.

Given the search engine page is displayed

When the user searches for the phrase “panda”

Then the results page shows a list of links for “panda”

As a web surfer,
I want to find pages online,
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Search engine returns pages
related to search phrases.

Search for "panda" and get
pages about pandas.

Gherkin Scenario - Arrange, Act, Assert!

Given the search engine page is displayed

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When the user searches for the phrase "panda"

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"Specification by Example"

Multifaceted Artifacts

Behavior specifications are:

Multifaceted Artifacts

Behavior specifications are:

1. Requirements

Multifaceted Artifacts

Behavior specifications are:

1. Requirements
2. Acceptance criteria

Multifaceted Artifacts

Behavior specifications are:

1. Requirements
2. Acceptance criteria
3. Test cases

Multifaceted Artifacts

Behavior specifications are:

1. Requirements
2. Acceptance criteria
3. Test cases
4. Automated scripts

Multifaceted Artifacts

Behavior specifications are:

1. Requirements
2. Acceptance criteria
3. Test cases
4. Automated scripts
5. **Living documentation**

specflow



PrecisionLender Boa Tests

generated Sep 21, 2021, 05:49 PM EDT

Living Documentation Analytics

Filter by Keyword	Filter by	Scenario Result	X
+ -		Test results	<input checked="" type="checkbox"/>
Boa.TestCases.PrecisionLender	128 Passed	0 Failed	0 Others
Features	128 Passed	0 Failed	0 Others
Administration	3 Passed	0 Failed	0 Others
Application	10 Passed	0 Failed	0 Others
DataLibrary	1 Passed	0 Failed	0 Others
Opportunities	108 Passed	0 Failed	0 Others
Creation	6 Passed	0 Failed	0 Others
Opportunity Copy			
Opportunity Copy Security			
Opportunity Creation			
Opportunity Creation Security			
Opportunity Deletion			
Opportunity Deletion Security			
Dashboard	2 Passed	0 Failed	0 Others
Data	9 Passed	0 Failed	0 Others
Deposits	3 Passed	0 Failed	0 Others
Edit	10 Passed	0 Failed	0 Others
Grid	4 Passed	0 Failed	0 Others
Loans	43 Passed	0 Failed	0 Others
Notes	2 Passed	0 Failed	0 Others
Other	7 Passed	0 Failed	0 Others

@continuous @pl-app @opportunities @creation @init-PL-Login

Feature: Opportunity Creation

As a lender,
I want to create opportunities for my clients,
So that I can give them the best deal while meeting the bank's target.

@user-Admin @continuous @pl-app @opportunities @creation @init-PL-Login

Scenario: New Opportunity dropdown shows all products in order 1s 804ms

- Given the PrecisionLender home page is displayed
- When the user clicks the New Opportunity dropdown
- Then the New Opportunity dropdown shows all products in the correct order

@smoke @smoke-1dev @user-Standard @continuous @pl-app @opportunities @creation @init-PL-Login

Scenario: Create a new opportunity with default values 20s 520ms

- Given the PrecisionLender home page is displayed
- When the user creates a new opportunity
- And the opportunity name is set to a unique name
- And the opportunity is saved and closed
- Then the opportunity appears in the "All" opportunities grid

@user-Standard @continuous @pl-app @opportunities @creation @init-PL-Login

Scenario: Navigate away from unsaved opportunity 7s 910ms

PrecisionLender Boa Tests

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Living Documentation Analytics

Filter by Keyword Filter by Scenario Result

Test results

- Boa.TestCases.PrecisionLender
 - Features
 - Administration
 - 3 Passed 0 Failed 0 Others
 - Application
 - 10 Passed 0 Failed 0 Others
 - DataLibrary
 - 1 Passed 0 Failed 0 Others
 - Opportunities
 - 108 Passed 0 Failed 0 Others
 - Creation
 - Opportunity Copy
 - Opportunity Copy Security
 - Opportunity Creation**
 - Opportunity Creation Security
 - Opportunity Deletion
 - Opportunity Deletion Security
 - Dashboard
 - 2 Passed 0 Failed 0 Others
 - Data
 - 9 Passed 0 Failed 0 Others
 - Deposits
 - 3 Passed 0 Failed 0 Others
 - Edit
 - 10 Passed 0 Failed 0 Others
 - Grid
 - 4 Passed 0 Failed 0 Others
 - Loans
 - 43 Passed 0 Failed 0 Others
 - Notes
 - 2 Passed 0 Failed 0 Others
 - Other
 - 7 Passed 0 Failed 0 Others

continuous @pl-app @opportunities @creation @init-PL-Login

✓ **Feature: Opportunity Creation**

As a lender,
I want to create opportunities for my clients,
So that I can give them the best deal while meeting the bank's target.

@user-Admin @continuous @pl-app @opportunities @creation @init-PL-Login

✓ **Scenario: New Opportunity dropdown shows all products in order** 1s 804ms

- ✓ **Given** the PrecisionLender home page is displayed
- ✓ **When** the user clicks the New Opportunity dropdown
- ✓ **Then** the New Opportunity dropdown shows all products in the correct order

@smoke @smoke-1dev @user-Standard @continuous @pl-app @opportunities @creation @init-PL-Login

✓ **Scenario: Create a new opportunity with default values** 20s 520ms

- ✓ **Given** the PrecisionLender home page is displayed
- ✓ **When** the user creates a new opportunity
- ✓ **And** the opportunity name is set to a unique name
- ✓ **And** the opportunity is saved and closed
- ✓ **Then** the opportunity appears in the "All" opportunities grid

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✓ **Scenario: Navigate away from unsaved opportunity** 7s 910ms

Filter by Keyword Filter by Scenario Result Test results

Boa.TestCases.PrecisionLender	128 Passed	0 Failed	0 Others
Features	128 Passed	0 Failed	0 Others
Administration	3 Passed	0 Failed	0 Others
Application	10 Passed	0 Failed	0 Others
DataLibrary	1 Passed	0 Failed	0 Others
Opportunities	108 Passed	0 Failed	0 Others
Creation	6 Passed	0 Failed	0 Others
Opportunity Copy			
Opportunity Copy Security			
Opportunity Creation			
Opportunity Creation Security			
Opportunity Deletion			
Opportunity Deletion Security			
Dashboard			
Data	9 Passed	0 Failed	0 Others
Deposits	3 Passed	0 Failed	0 Others
Edit	10 Passed	0 Failed	0 Others
Grid	4 Passed	0 Failed	0 Others
Loans	43 Passed	0 Failed	0 Others
Notes	2 Passed	0 Failed	0 Others
Other	7 Passed	0 Failed	0 Others

@continuous @pl-app @opportunities @creation @init-PL-Login

Feature: Opportunity Creation

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@user-Admin @continuous @pl-app @opportunities @init-PL-Login

Scenario: New Opportunity dropdown shows all products

- Given the PrecisionLender home page is displayed
- When the user clicks on the New Opportunity dropdown
- And the New Opportunity dropdown is displayed in the correct order

@user-Standard @continuous @pl-app @opportunities @creation @init-PL-Login

Scenario: Create a new opportunity with default values 20s 520ms

- Given the PrecisionLender home page is displayed
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@user-Standard @continuous @pl-app @opportunities @creation @init-PL-Login

Scenario: Navigates user from unsaved opportunity to 0s 0ms

What if users and customers could see these results?

PrecisionLender Boa Tests

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Living Documentation Analytics

Filter by Keyword	Filter by	Scenario Result	X
+ -		Test results	<input checked="" type="checkbox"/>
Boa.TestCases.PrecisionLender	128 Passed	0 Failed	0 Others
Features	128 Passed	0 Failed	0 Others
Administration	3 Passed	0 Failed	0 Others
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Scenario: Navigate away from unsaved opportunity 7s 910ms

JUnit 

TestNG

 Cucumber
Supported by SMARTBEAR



 specflow

 Jasmine





 pytest



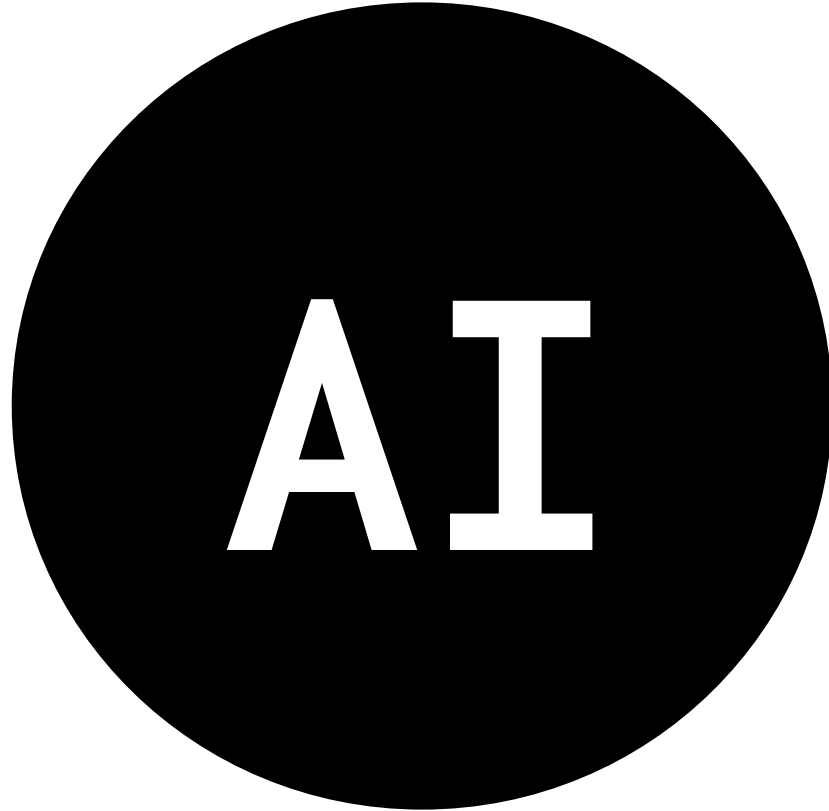
ROBOT
FRAME
WORK/

 fluent
ASSERTIONS

DUPLICATION



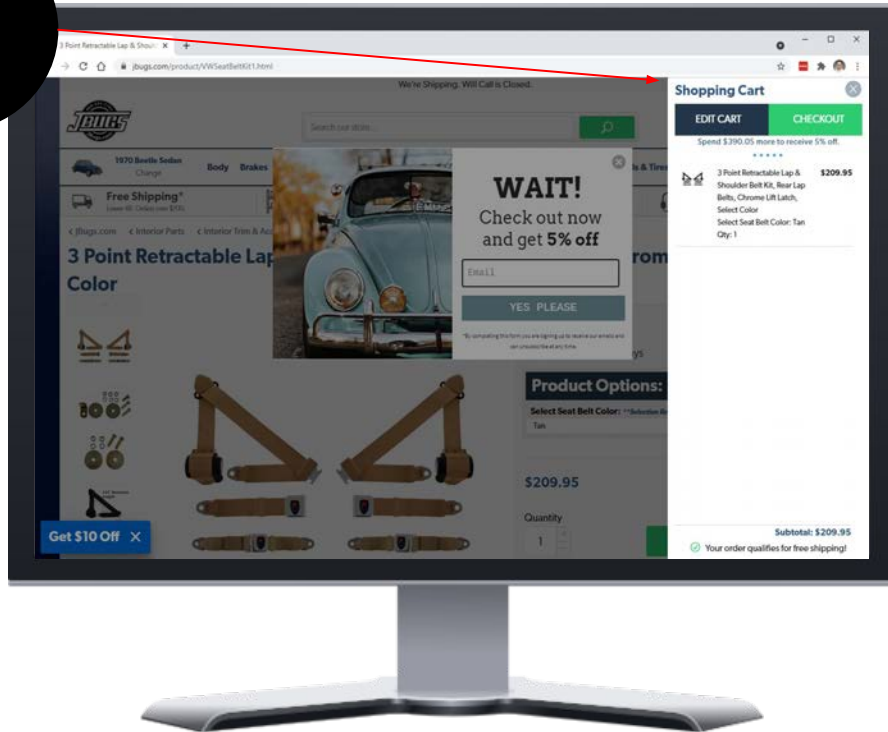
**Why do we keep duplicating
the same tests?**



AI

Common Shopping Tests:

- Add item to cart
- Add multiple items to cart
- Remove item from cart
- Empty the whole cart
- Proceed to checkout



Run-On-Any-System Tests



ROAST Login



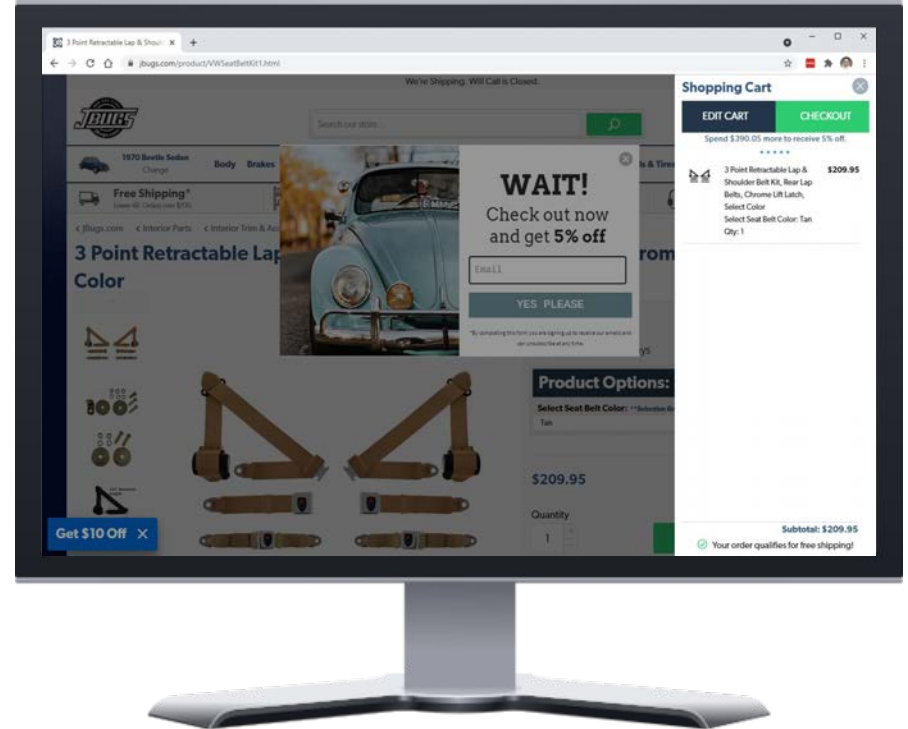
ROAST Product Search



ROAST Shopping Cart



ROAST Payment



Open Testing

Open Testing

1. Openness in collaboration

Open Testing

1. Openness in collaboration
2. Openness in Specification by Example and Living Documentation

Open Testing

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2. Openness in Specification by Example and Living Documentation
3. Openness in sharing test and their results

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4. Openness in sharing tools, frameworks, and platforms

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6. **Openness in other ways?**

Open Testing

1. Openness in collaboration
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4. Openness in sharing tools, frameworks, and platforms
5. Openness in shared test suites for common behaviors
6. **Openness in other ways?**
7. **Should some things remain closed?**

A Conversation

A Conversation

1. How is your testing today?
 - a. In what ways is it open?
 - b. In what ways is it closed?

A Conversation

1. How is your testing today?
 - a. In what ways is it open?
 - b. In what ways is it closed?
2. How could your testing improve with *incremental* openness?

A Conversation

1. How is your testing today?
 - a. In what ways is it open?
 - b. In what ways is it closed?
2. How could your testing improve with *incremental* openness?
3. How could your testing improve with *radical* openness?

Open testing is a means to an end:

Open testing is a means to an end:

QUALITY

A man with glasses and a dark t-shirt featuring a Pikachu character is standing at a wooden podium. He is gesturing with his right hand. A white speech bubble with the word "Thanks!" is positioned above his head. The background is dark.

Thanks!

Open Testing:

What if we open our testing like we open our source?

Andrew Knight

@AutomationPanda
Applitools Developer Advocate
Test Automation U Director