

Quality Assurance Overview



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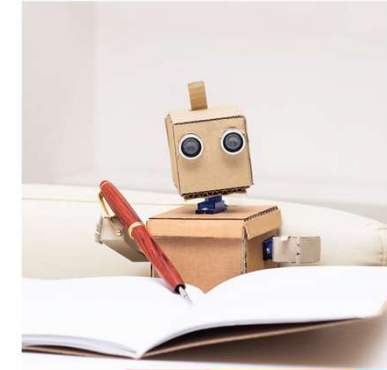
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Octavio Hidalgo González
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Senior Quality Assurance Engineer

Education background
University of Costa Rica

Work Experience
2002 – 2008 Dev Engineer
2008 – Today QA Engineer

Knowledge
Functional testing
API Testing
Automation testing
Performance testing
Mobile testing

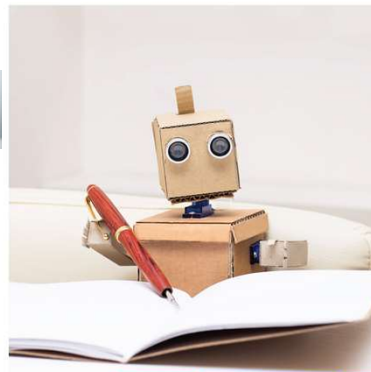


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Quality Assurance - Current State

- Equality
- Open positions
- Career path
- Project variety

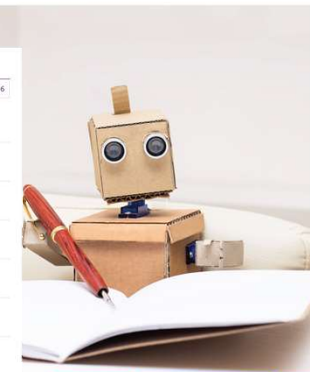
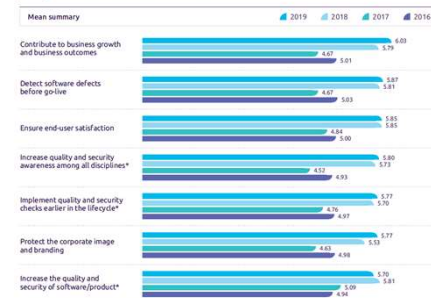


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Quality Assurance - Current State

Fig 1 Executive management objectives with QA and testing on a scale of 1-7, where 7 = very important

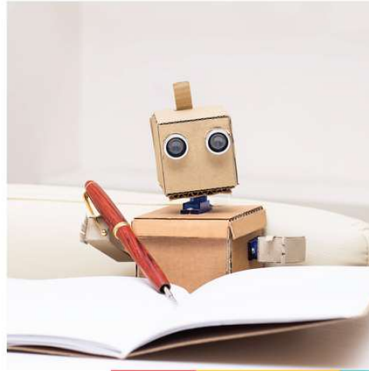


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Agenda

- What is QA?
 - Quality Assurance
 - Quality Control
 - Testing
 - Test Types
 - Test Cases
 - Bugs
 - Benefits
 - Impact
 - Tester and QAE Skills
- Test Management tools
- Test Execute tools
 - Web testing
 - API Testing
 - Performance Testing
 - Security testing
 - Automation testing



What is Software Quality Assurance?

THINK
OUTSIDE
THE BOX

Software Quality Assurance

The function of software quality that assures that the standards, processes, and procedures are appropriate for the project and are correctly implemented. [NASA.gov]

Software Quality Control

Set of procedures used by organizations to ensure that a software product will meet its quality goals at the best value to the customer, and to continually improve the organization's ability to produce software products in the future [Wikipedia.com].

Quality Assurance Vs Quality Control

Quality Assurance Vs Quality Control

QUALITY ASSURANCE

Focus on the prevention of defects

Proactive process

Process-based approach

Manages Quality

QUALITY CONTROL

Focus on the identification of defects

Reactive process

Product-based approach

Verify the Quality

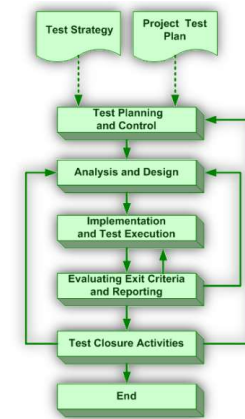
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Testing

Testing is the process of executing a program with the intent of finding errors. [G. Myers]

The act of designing, debugging and executing tests. [B. Beizer]



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Test Categories

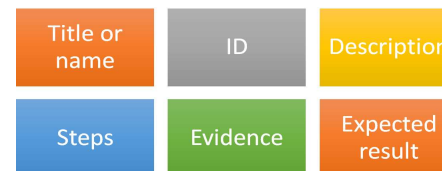


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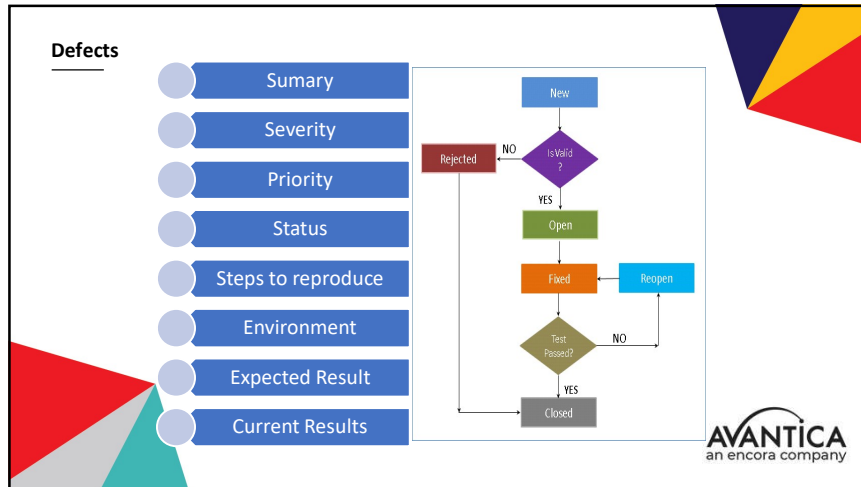
Test Case

A set of test inputs, execution conditions, and expected results developed for a particular objective, such as to exercise a particular program path or to verify compliance with a specific requirement.



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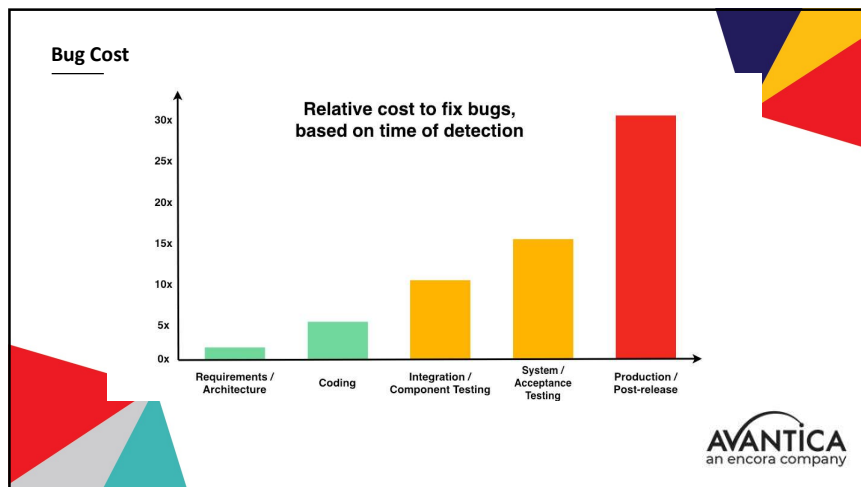
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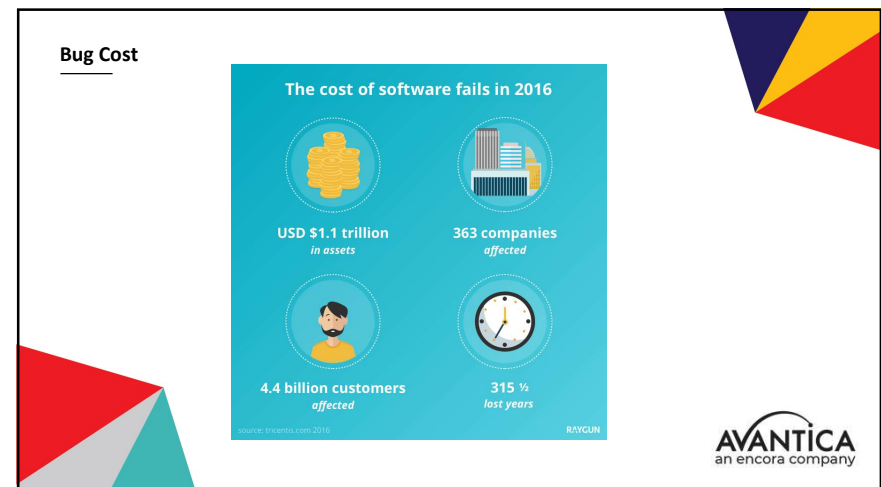
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Bug Impact

Remember the Mars Climate Orbiter incident from 1999?

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Bug Impact

Recap: Software that Kills

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- Early to mid-1980s
- Revolutionary *Double-Pass* medical particle accelerator
- Moved to complete software control
- Injured 6 people, killing 3 of them
- Two different underlying bugs
- But it was more than just bugs
 - Poor software engineering practices



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Bug Impact

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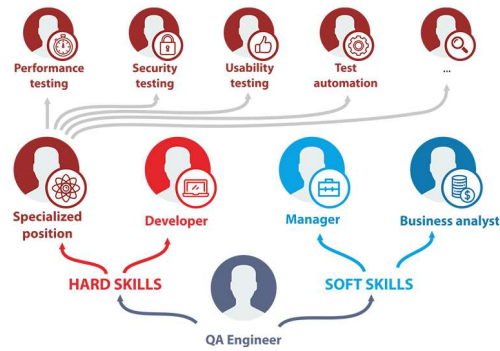
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Tester and QAE Skills

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Tester and QAE Skills



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Test Management tools

THINK
OUTSIDE
THE BOX

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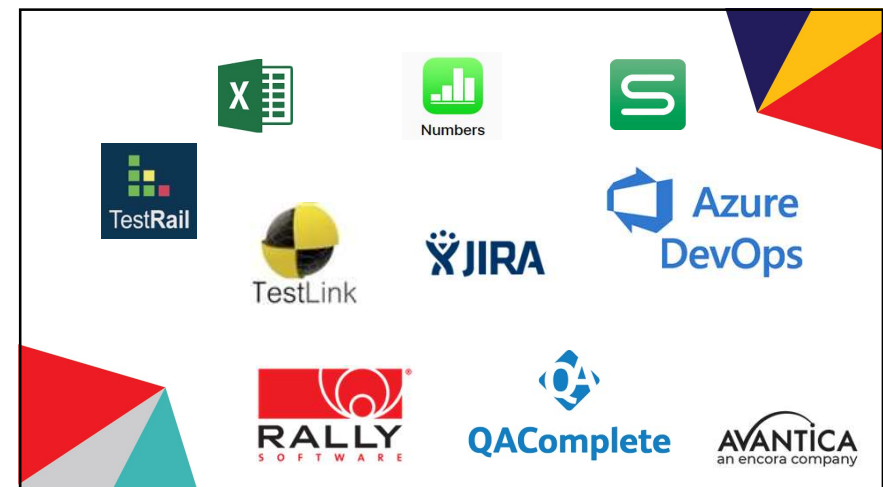
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Test Management

- Where do we store them?
- How do we know if they have been executed?
- When was the last time it was executed?
- What features or component are they testing?
- Do they have any associated defects?

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Test Management - Features

- Easy to use.
- Easy learning curve.
- No license needed *
- Metrics
- Integration with other tools **

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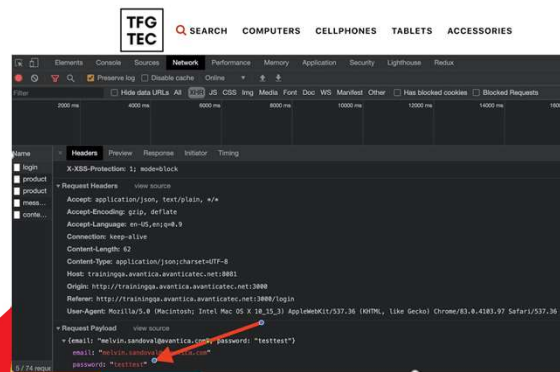
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Test Execution tools

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Browser developer tools

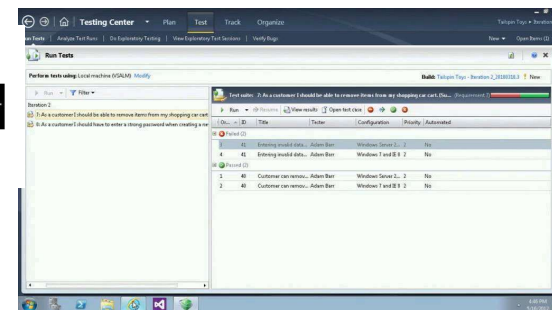


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Manual testing tools


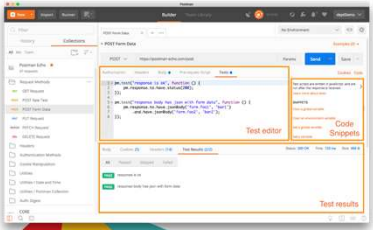
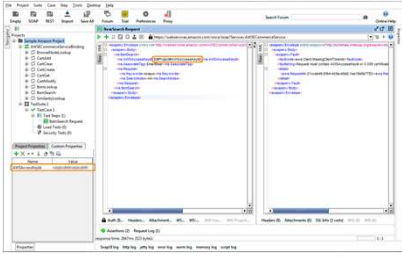
Microsoft
Test Manager



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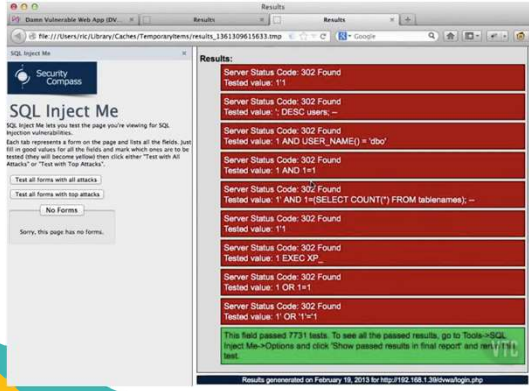
API Testing

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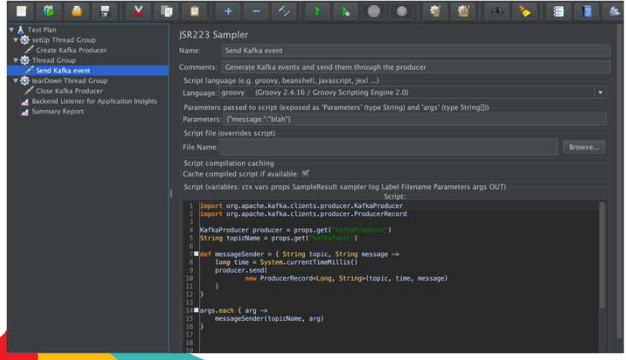
SQL InjectMe – Security Testing



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JMeter – Performance Testing



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Test Automation Tools



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Test Automation Tools – Selenium WebDriver



- Industry standard
- Supported by major browser vendors
- Open Source
- Java, C#, Ruby, Python, JavaScript

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Regular test VS automated test

Preconditions

Navigate to the login page

Steps

Enter valid username
Enter valid password
Click on Login button

Expected result

The "Welcome User" message is displayed

REGULAR TEST CASE

```
1 @test
2 public void testValidLogin() {
3     loginPage.typeCredentials("john.smith", "myPassword123");
4     loginPage.clickLoginButton();
5     loginPage.waitForUserNameVisible();
6     assertTrue(loginPage.isUserNameVisible());
7 }
```

AUTOMATED TEST CASE

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Test Automation Benefits

- Minimizing the **time** required for testing cycles.
 - Faster feedback
 - Accelerated results
- Eliminate **repetitive** tasks in quality control activities.
- Improvement testing **efficiency**
- Higher **test coverage**

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Test Automation Risks

- False Negatives and/or False Positives.
- Wrong election of technology can lead to a bad Automation Framework.
- Not following Good Coding Practices can make our framework something unmaintainable.
- Automation is not the solution to everything.

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References

Avantica

- Open Operations: 1993
- Costa Rica (San José, Cartago, Liberia, San Carlos), Colombia, Peru, Bolivia.
- EEUU (Sillicom Valley, Nueva York).
- Encora Group
- Create QA & Testing Unit: 2008
- QA Unit: 200 QAs
- My Project: 37 team-members

Talent Acquisition: jobs@avantica.com



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Bonus pack

Communities

- TestingCR
- QALabsCR
- QA Minds Community
- Testing n QA Group
- <https://www.federico-toledo.com/>
- <https://claudia-badell.com/>
- <https://megatestingweek.com>

testingCR



QA LABS
Improve your skills!



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Bonus pack

International Certifications

- International Software Testing Qualifications Board
- International Institute for Software Testing
- International Software Quality Institute



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Questions?



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Let's Start a Project Together!

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