

Software QA Automation

The Fundamentals of Quality Assurance Automation

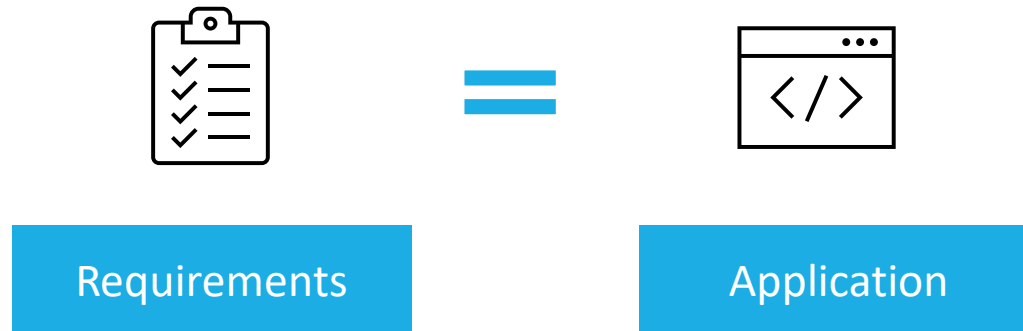
Contents

- What is Software Quality Assurance?
- What are QA Automation Tests?
- How Does QA Automation Testing Work?
- Why is Automation Testing Important?
- How will AI Impact Software QA?

What is Software Quality Assurance?

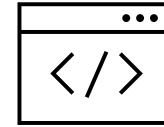
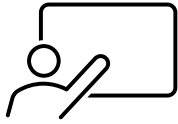


What is Software Quality Assurance?



QA ensures the software is defect-free and reliable [1].

What is Software Quality Assurance?



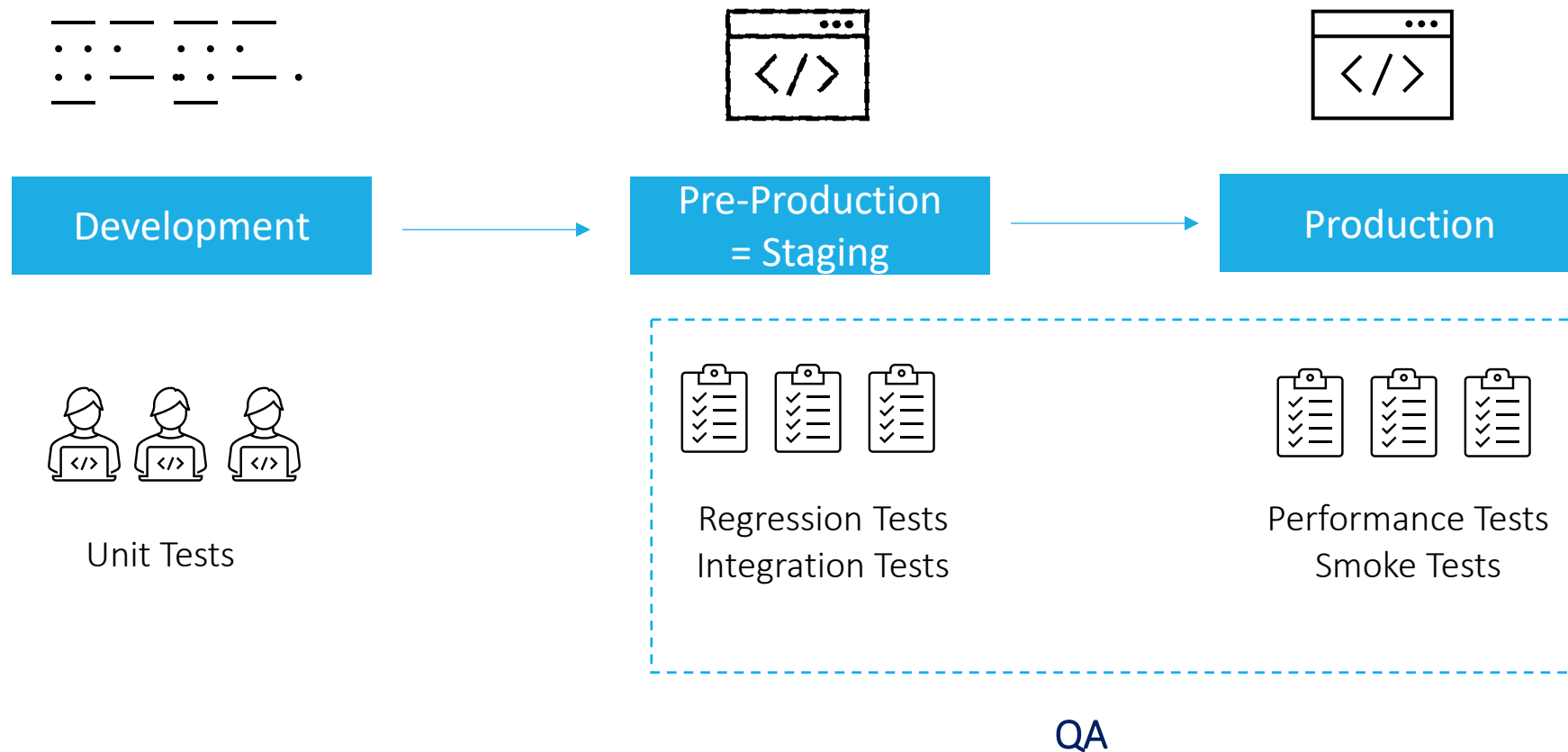
Requirements

Application

Performance Tests
Integration Tests
API Tests
Regression Tests
Design Regression Tests

Performance Issues
Component Interaction
API Functionality
Assess Impact
Design Consistency

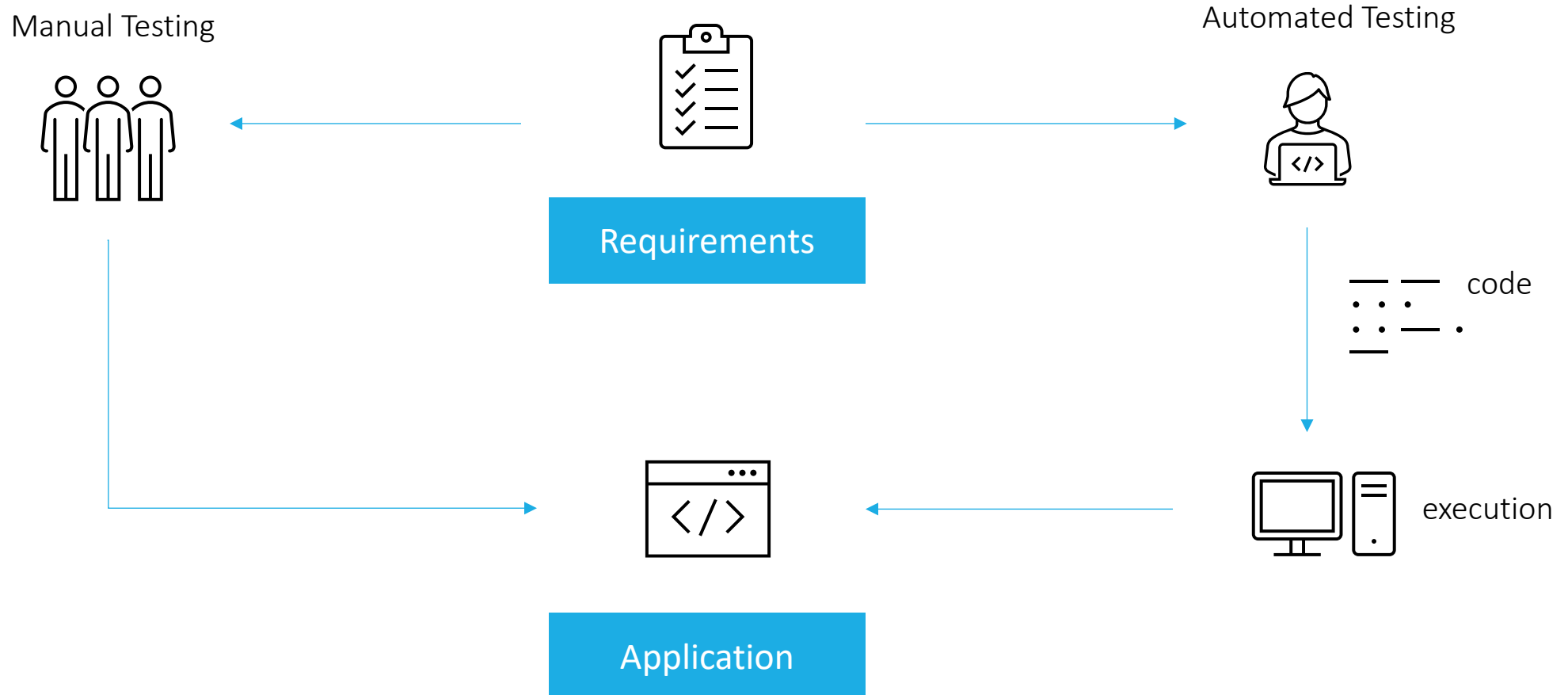
What is Software Quality Assurance?



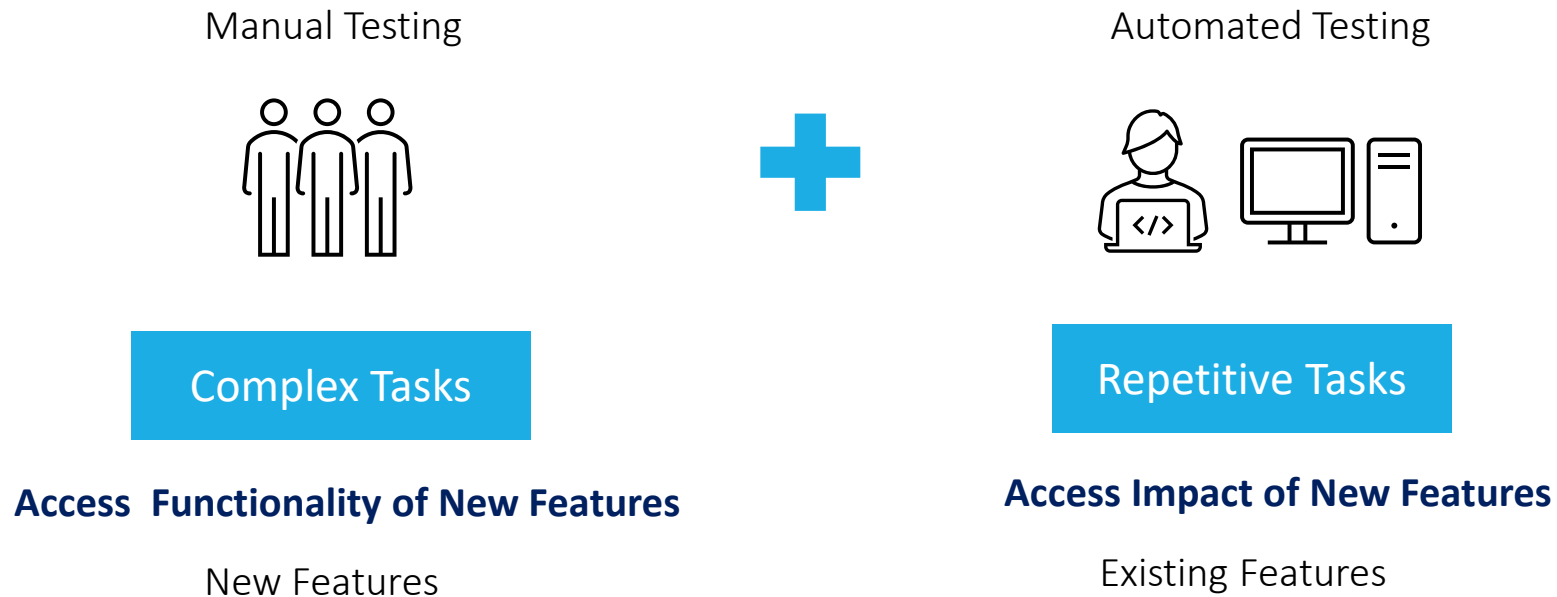
What are QA Automation Tests?



What are QA Automation Tests?

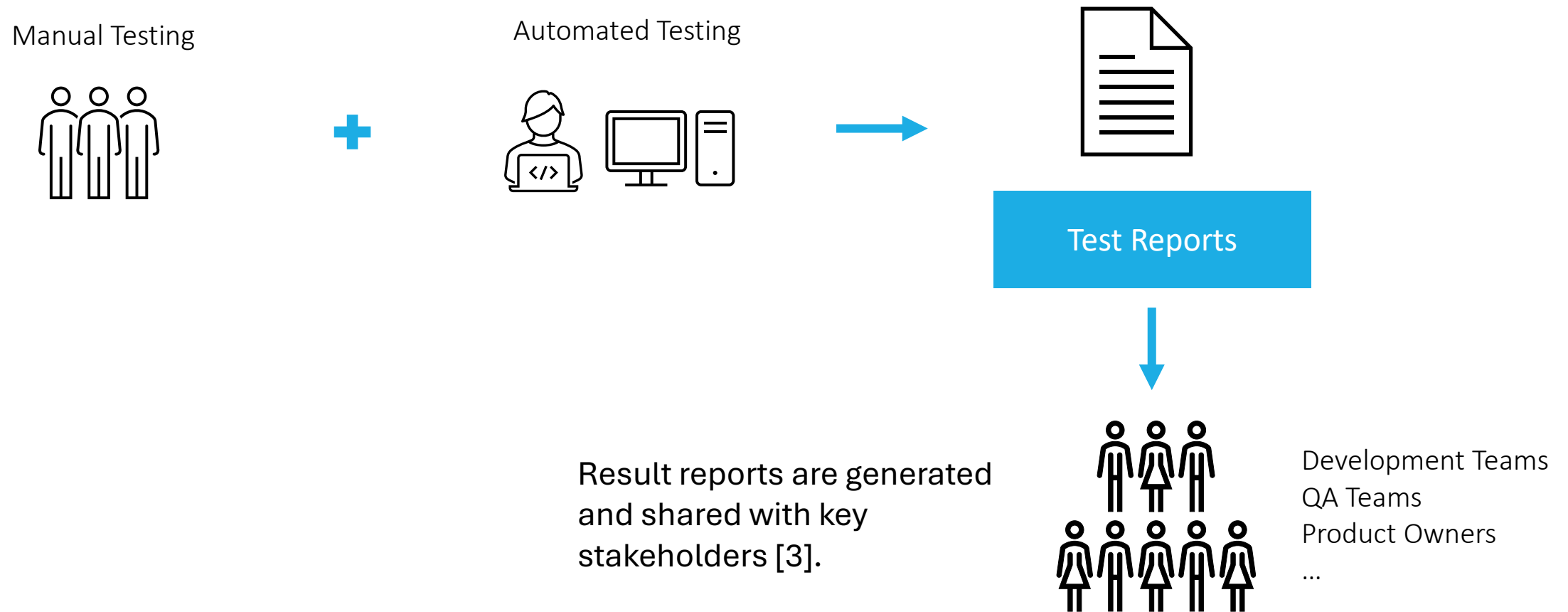


What is QA Automation Tests?



Manual and automated testing complement each other [2].

What are QA Automation Tests?



[Log In](#), then add the game to your Wishlist. You can receive sales perks and update information.



Purchase Cataclismo

Sale ends after 2025.04.03 13:00(UTC-4)

Coupon

-35% ~~USD 29.99~~ **USD 19.49**

Cart



Related Events



March 2025 New Releases

Tag

#StoveKor

#3D

#Medieval

Game Description

Cataclismo is a mix of real-time strategy and tower defense from the creators of Moonlighter. Defend the last bastion of humanity in a ruined world, building fortresses brick by brick to fend off waves of Horrors. Withstand the siege and rise above the haze in a story of hope, resilience, and community.



Game Rating

15+

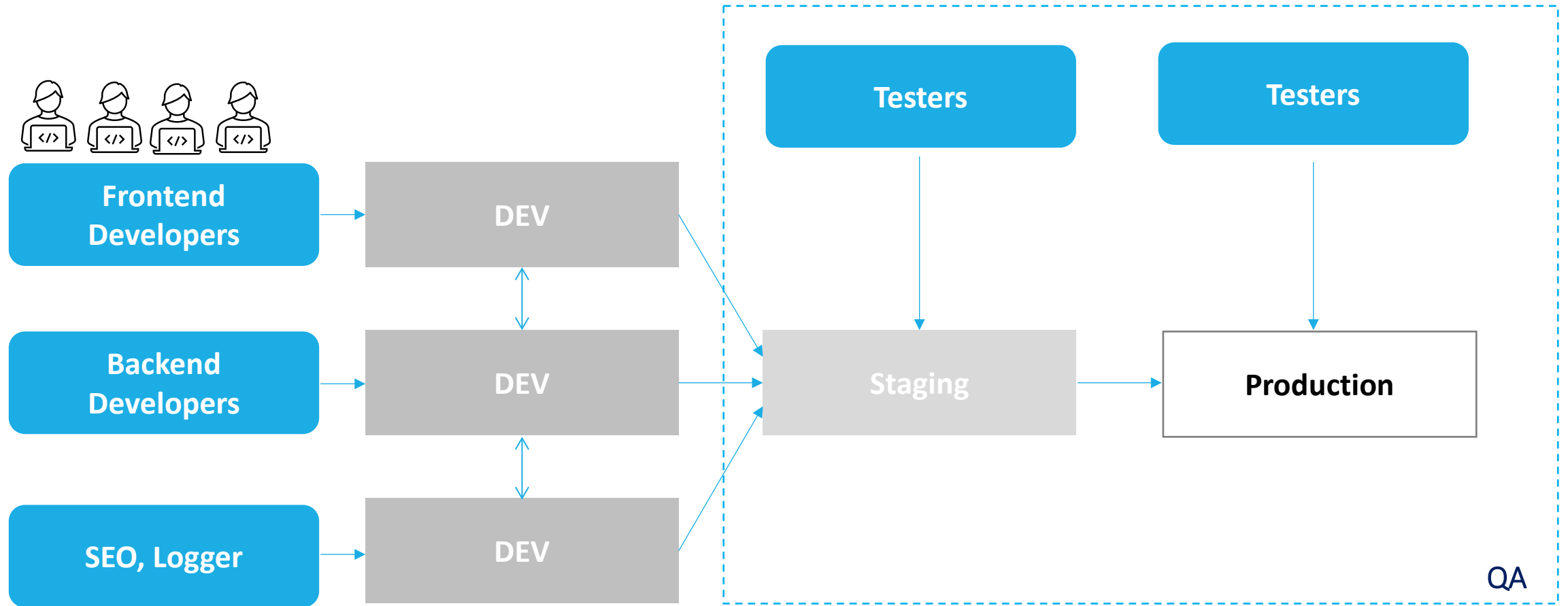
This game can only be purchased and used by users over the age of 15.



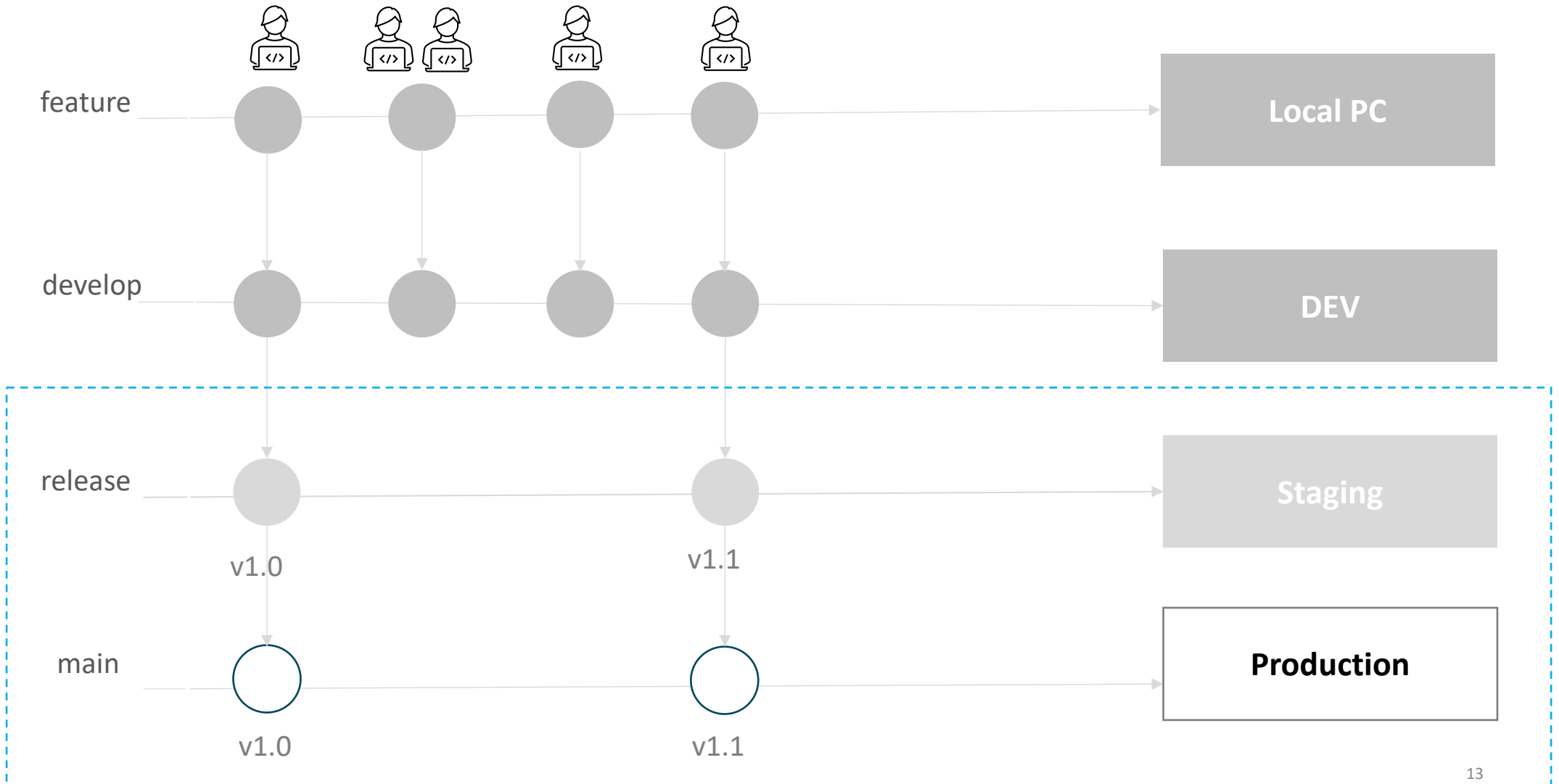
User Rating

<https://store.onstove.com/en/games/3054>

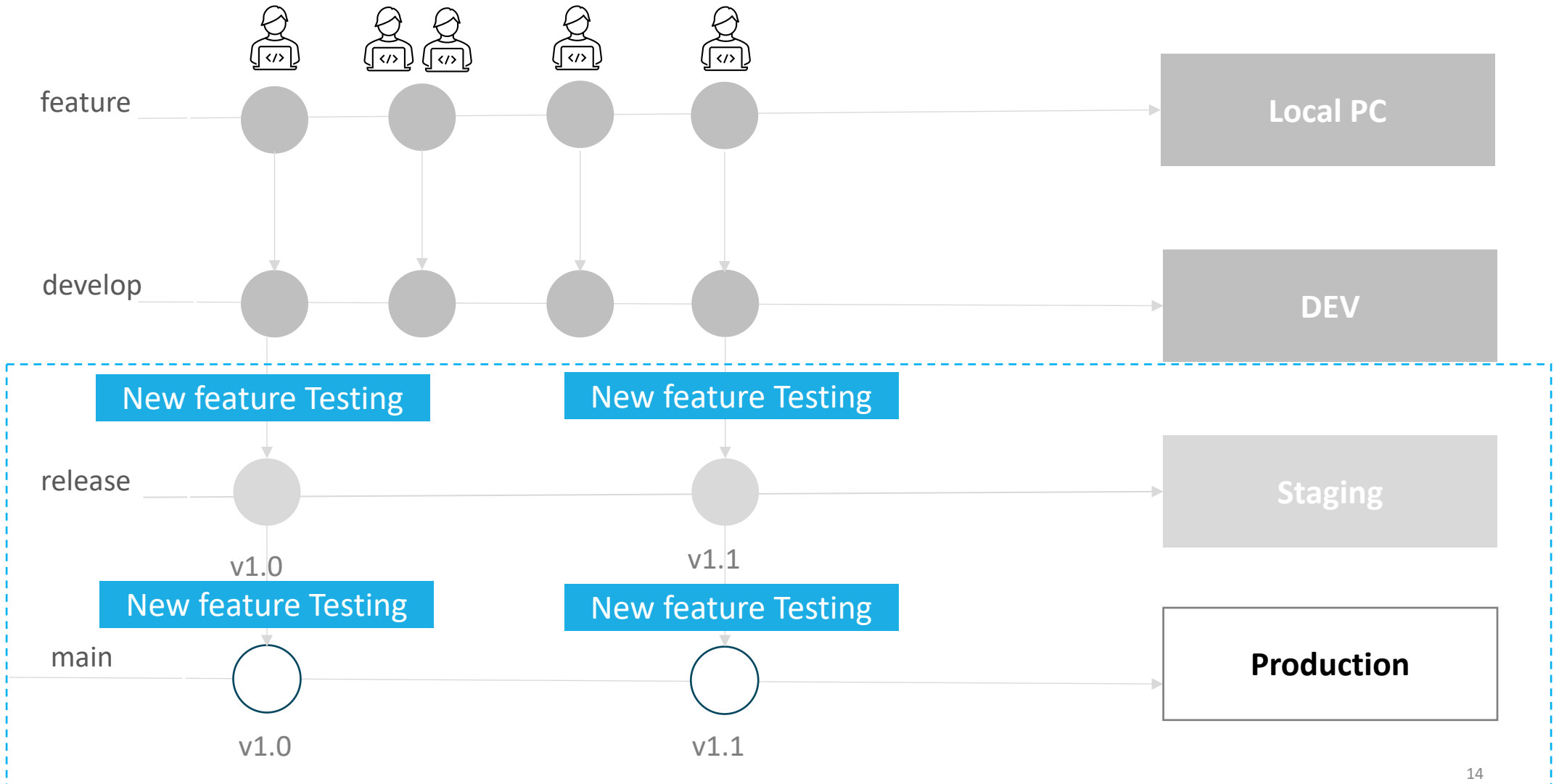
What are QA Automation Tests?



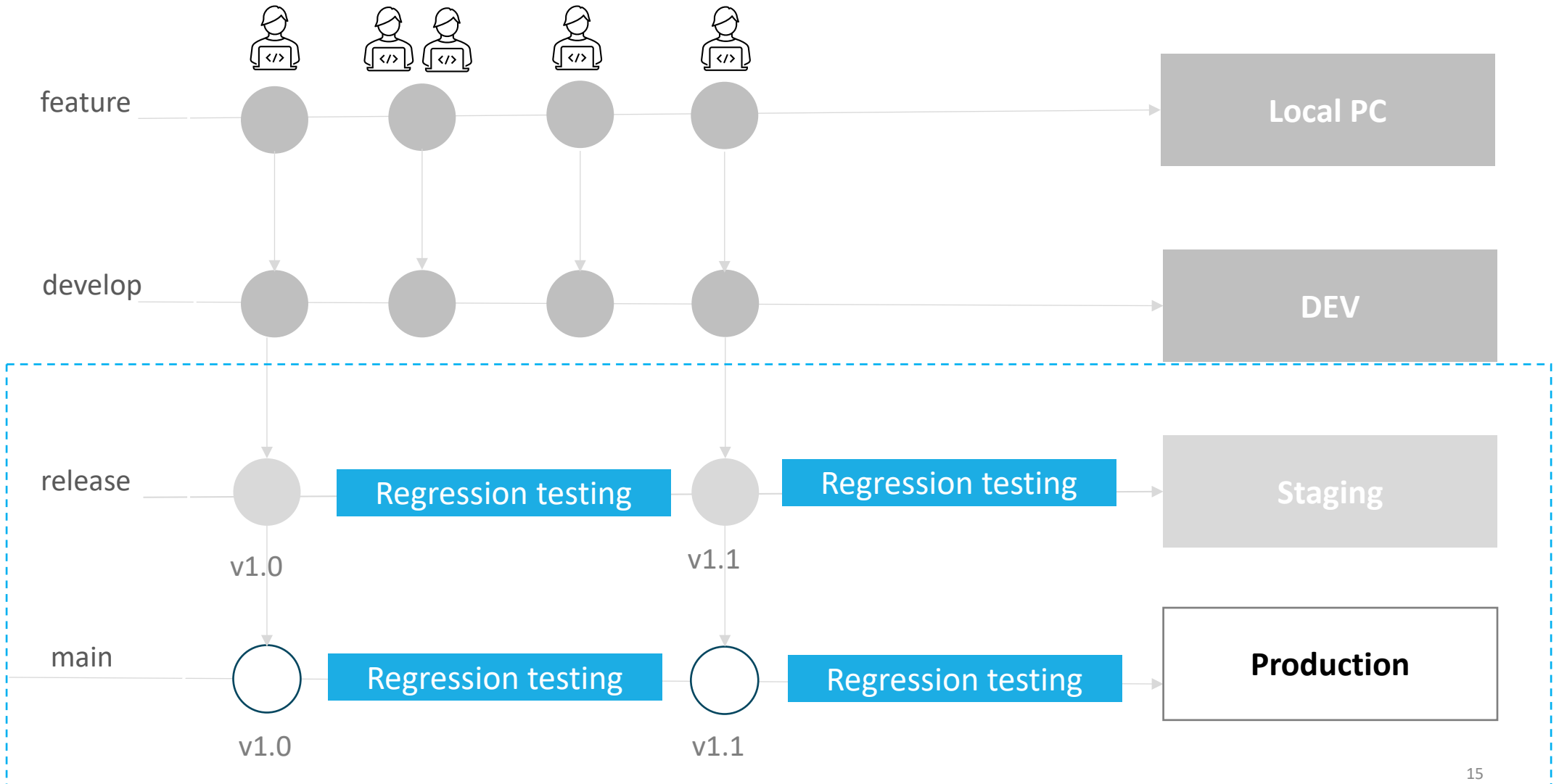
What are QA Automation Tests?



What are QA Automation Tests?



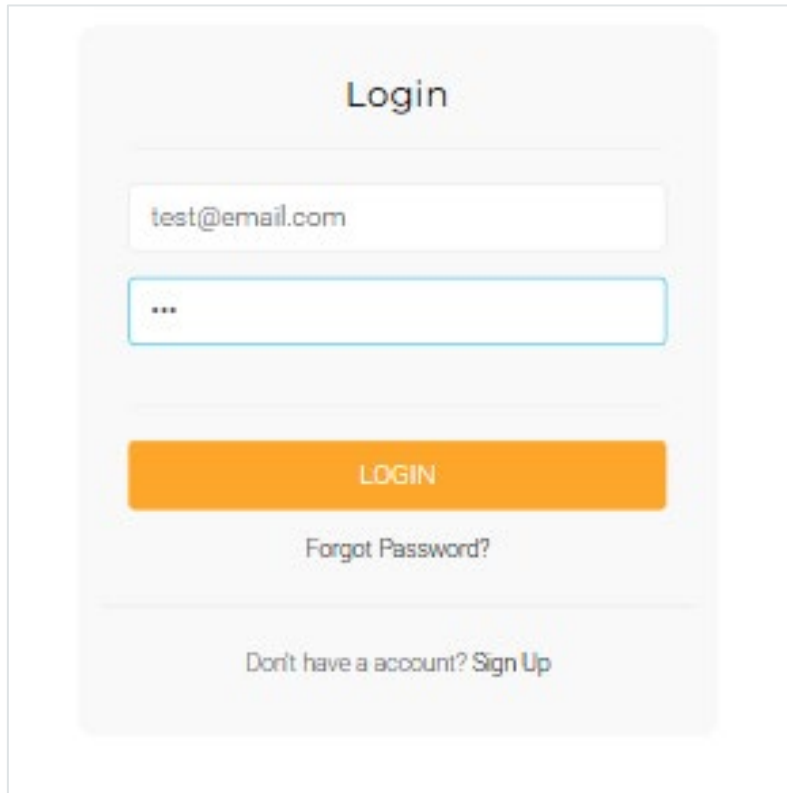
What are QA Automation Tests?



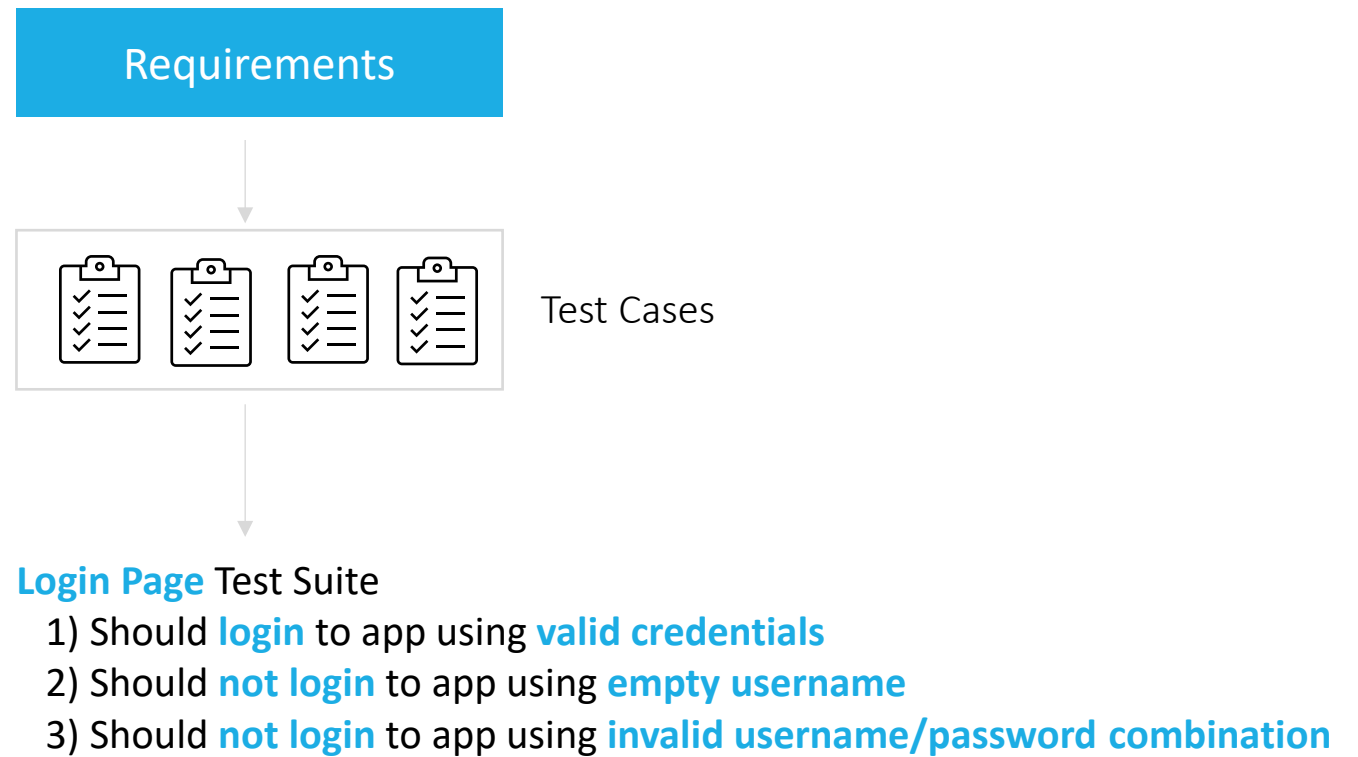
How Does QA Automation Testing Work?



How Does QA Automation Testing Work?



A mockup of a login page. At the top, the word "Login" is centered. Below it is a text input field containing "test@email.com". Underneath that is a password input field with three dots "..." indicating it is masked. Below the password field is an orange button with the text "LOGIN" in white. Under the button is a link that says "Forgot Password?". At the bottom of the page is a link that says "Don't have an account? Sign Up".



How Does QA Automation Testing Work?

```
03_page_object.cy.js x
4 describe( title: 'Login Page Test Suite', fn: () : void => {
7   before( fn: () : void => {
8     cy.fixture( path: 'login_data').then( fn: data => {
9       //.data = data;
10      login_data = data;
11    })
12  })
13
14  beforeEach( name: 'This is beforeEach hook', fn: () : void => {
15    login.navigateToLoginPage()
16  })
17
18  it( title: 'Should login to app using valid credentials', config: () : void => {
19    cy.login(login_data.testId1.username, login_data.testId1.password)
20    cy.logout()
21    cy.get( selector: 'a[href="/login"]').should( chainer: 'have.text', value: 'Sign In')
22  })
23
24  it( title: 'Should not login to app using empty username', config: () : void => {
25    login.loginToApp(login_data.testId2.username, login_data.testId2.password)
26    login.verifyEmailRequiredError()
27  })
28 }
```

How Does QA Automation Testing Work?

Playwright



JavaScript/TypeScript
Python
C#
Java

Selenium



Java
Python
C#
JavaScript(Node.js)
Ruby
Kotlin
...

Cypress



JavaScript/TypeScript

How Does QA Automation Testing Work?

Cypress



JavaScript/TypeScript

End-to-End Testing (E2E Testing)

Real-Time Browser Interaction

Screenshots

Videos

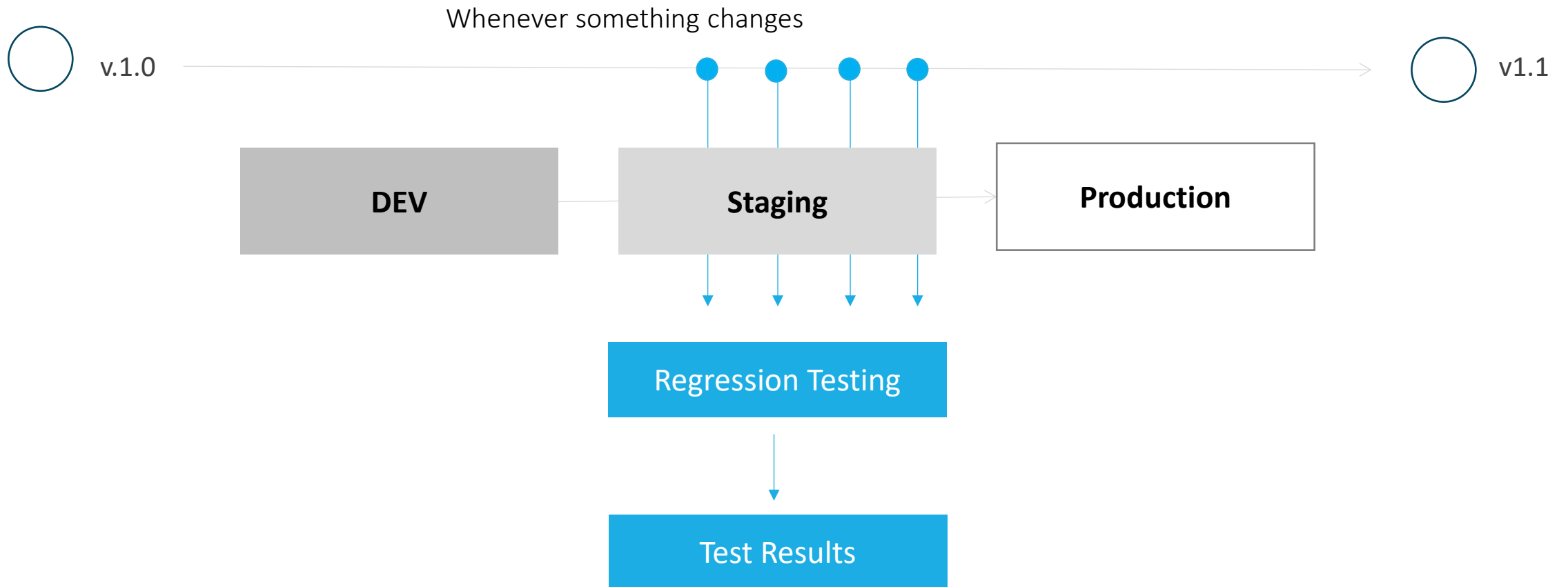
[Dashboard](#)

Custom Reports

CI/CD Integration

...

How Does QA Automation Testing Work?

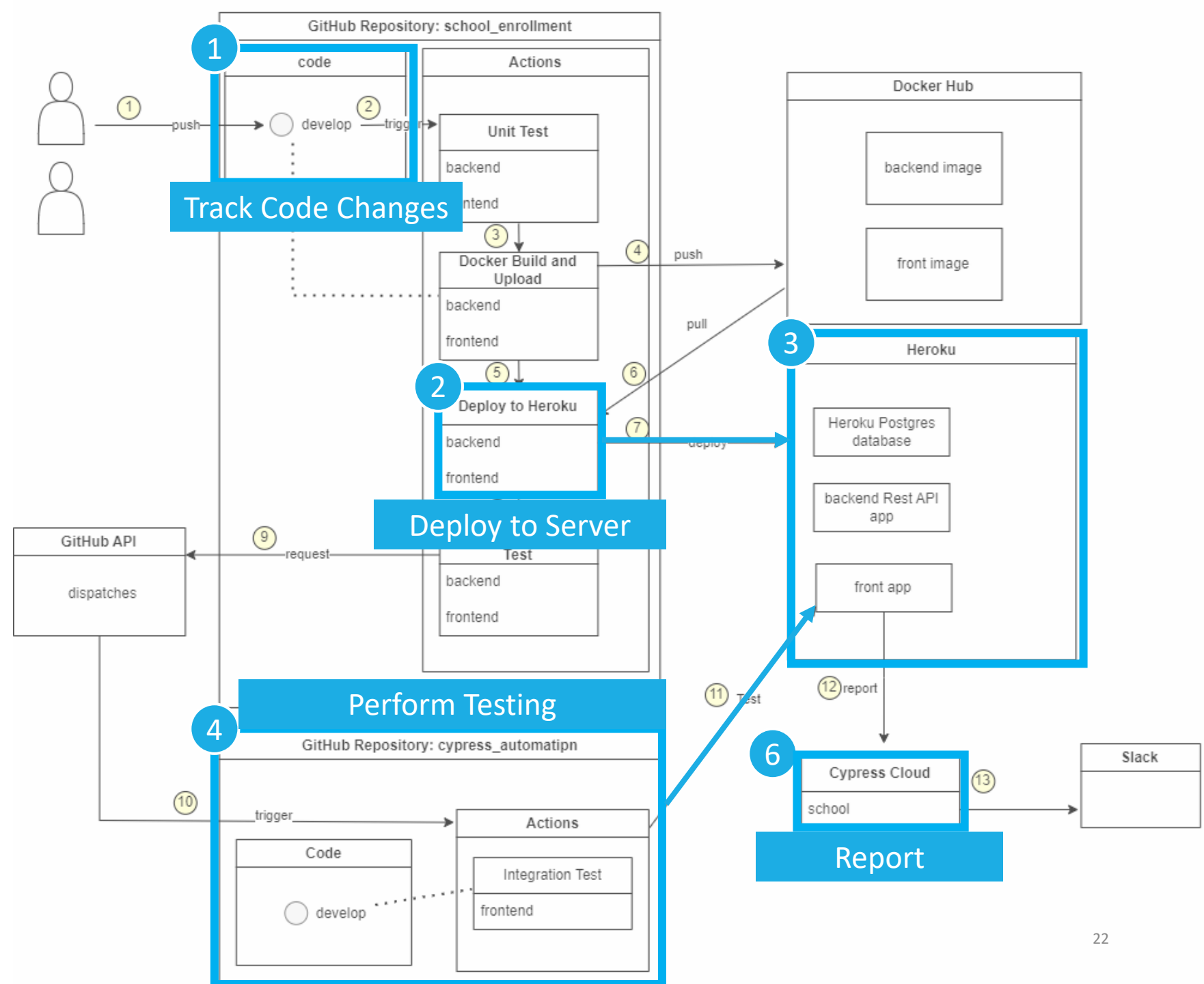


How Does QA Automation Testing Work?



...
CI/CD Integration
...

CI/CD tools run
automated tests [5].



How Does QA Automation Testing Work?

main
2 contributors and 10 runs over the last 30 days

Review Runs

Base main #9 Changed main #10 Submit Feedback

Branch Review

| | |
|----------|---|
| Tests | 3 |
| Failures | 1 |
| Flaky | 0 |
| Pending | 0 |
| Added | 0 |
| Modified | 0 |

Tests > Failures 1 existing 1 total

0-7-page-object/03_page_object.cy.js
00:19 • Linux • Electron • E2E

1 existing failure

Login Page Test Suite > ... not login to app using invalid username/password combination

How Does QA Automation Testing Work?

The screenshot displays the Cypress test runner interface. At the top, the breadcrumb navigation shows the file path: `03_page_object.cy.js` on a `Linux` environment using `Electron 118`. A `Report an issue` button is located in the top right corner.

The main interface is divided into three primary sections:

- Left Panel (Command Log):** Displays the execution of the `Login Page Test Suite`. The test title is `...in to app using invalid username/password combination`. The command log shows a sequence of actions: `get #login`, `click`, and `get .error`. A failure is indicated by a red circle and the message: `-assert expected <span#incorrectdetails.error> to have text IIncorrect login details. Please try again., but the text was Incorrect login details. Please try again.`
- Center Panel (Application View):** Shows a live view of the application at the URL `https://www.letscodeit.com/login`. The application displays a login form with the email `test@email.com` entered, an empty password field, and an orange `LOGIN` button. Below the button are links for `Forgot Password?` and `Don't have an account? Sign Up`.
- Right Panel (Network Log):** Lists the network requests made during the test. The log includes various GET and POST requests, such as `200 GET /JTUSjlg1_i6t8kCHKm459Wlhyw.woff2` and `204 POST collect?v=2&tid=G-ORSG8EPSH6>m...`. A search filter is available at the top of this panel.

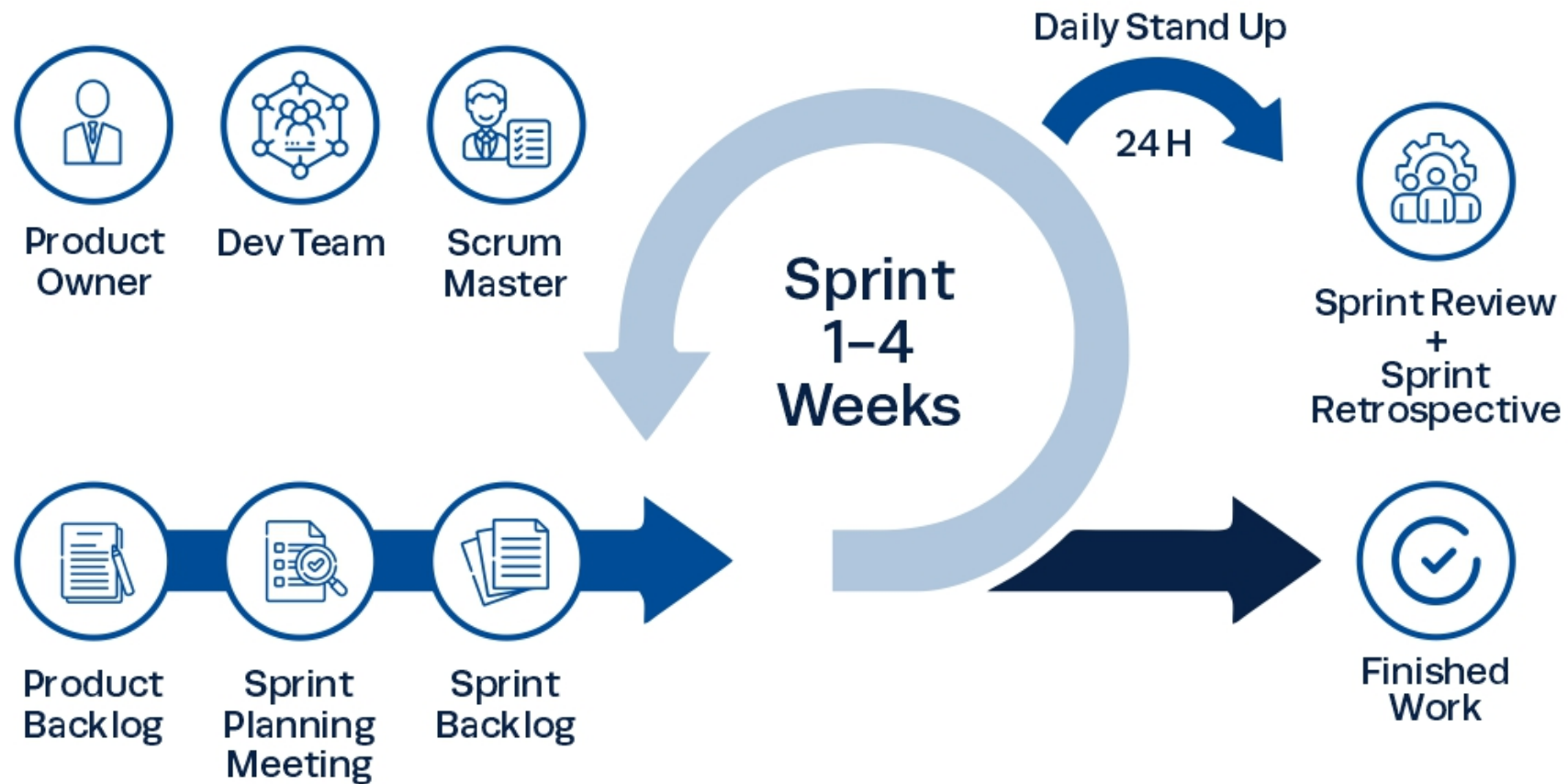
At the bottom of the interface, a progress bar indicates the test is at `Attempt 1 of 2`. The current step is highlighted with a blue bar, and the duration of the current step is shown as `2524ms`. The overall test duration is `00:02 / 00:06`, and the zoom level is set to `1x`.

[To Cypress Dashboard](#)

Why is Automation Testing Important?

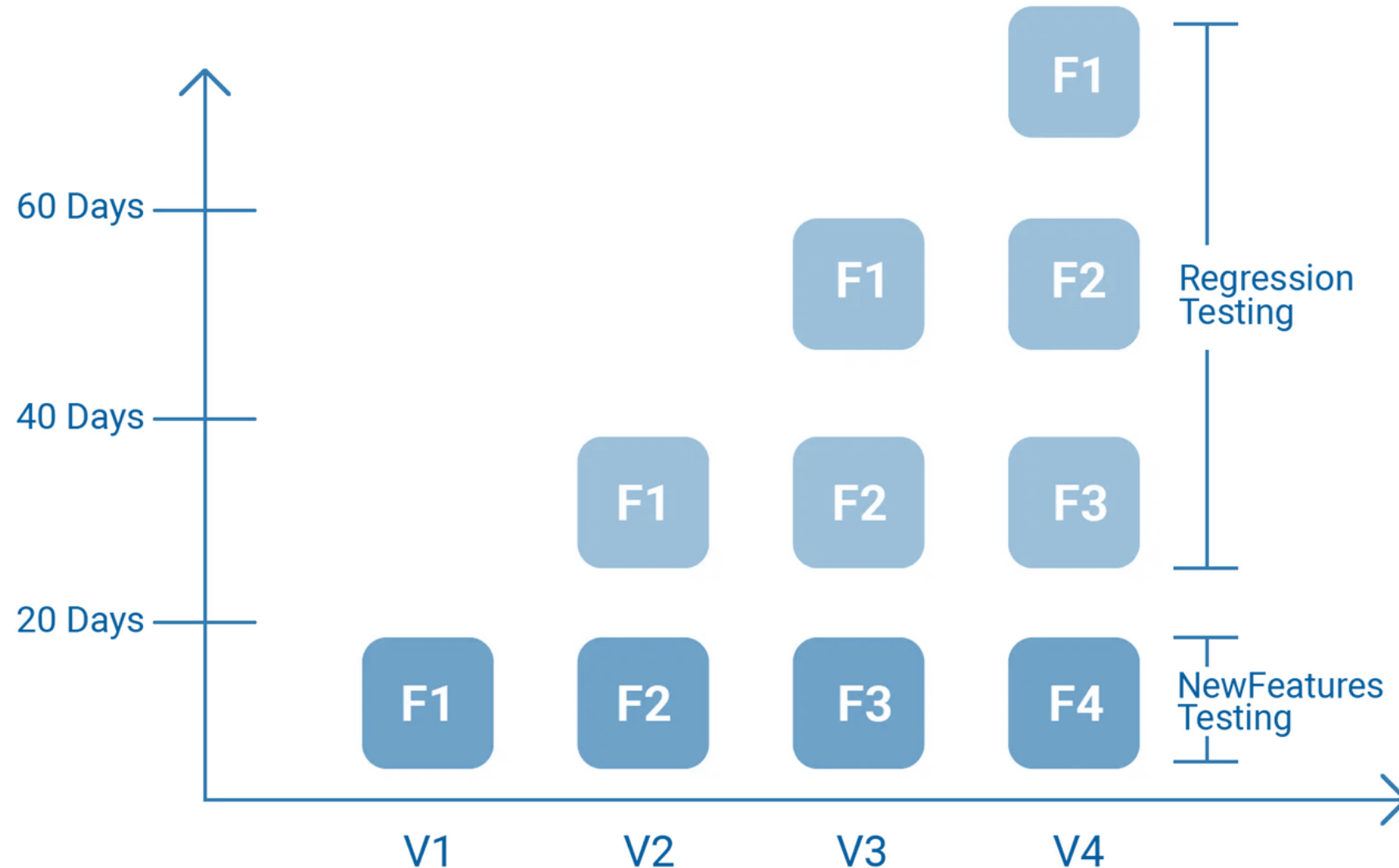


Why is Automation Testing Important?

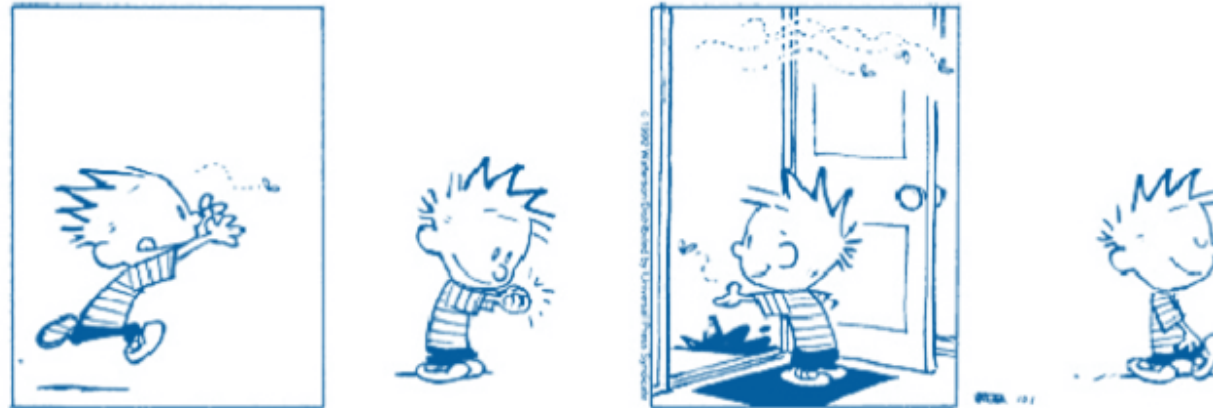


Agile principal aims for fast delivery [6].

Why is Automation Testing Important?



Why is Automation Testing Important?



“When you fix one bug, you introduce several newer bugs [7].”

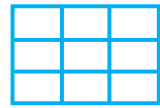
How Will AI Impact Software QA?



How Will AI Impact Software QA?



Create Test Cases



Generate Test Data



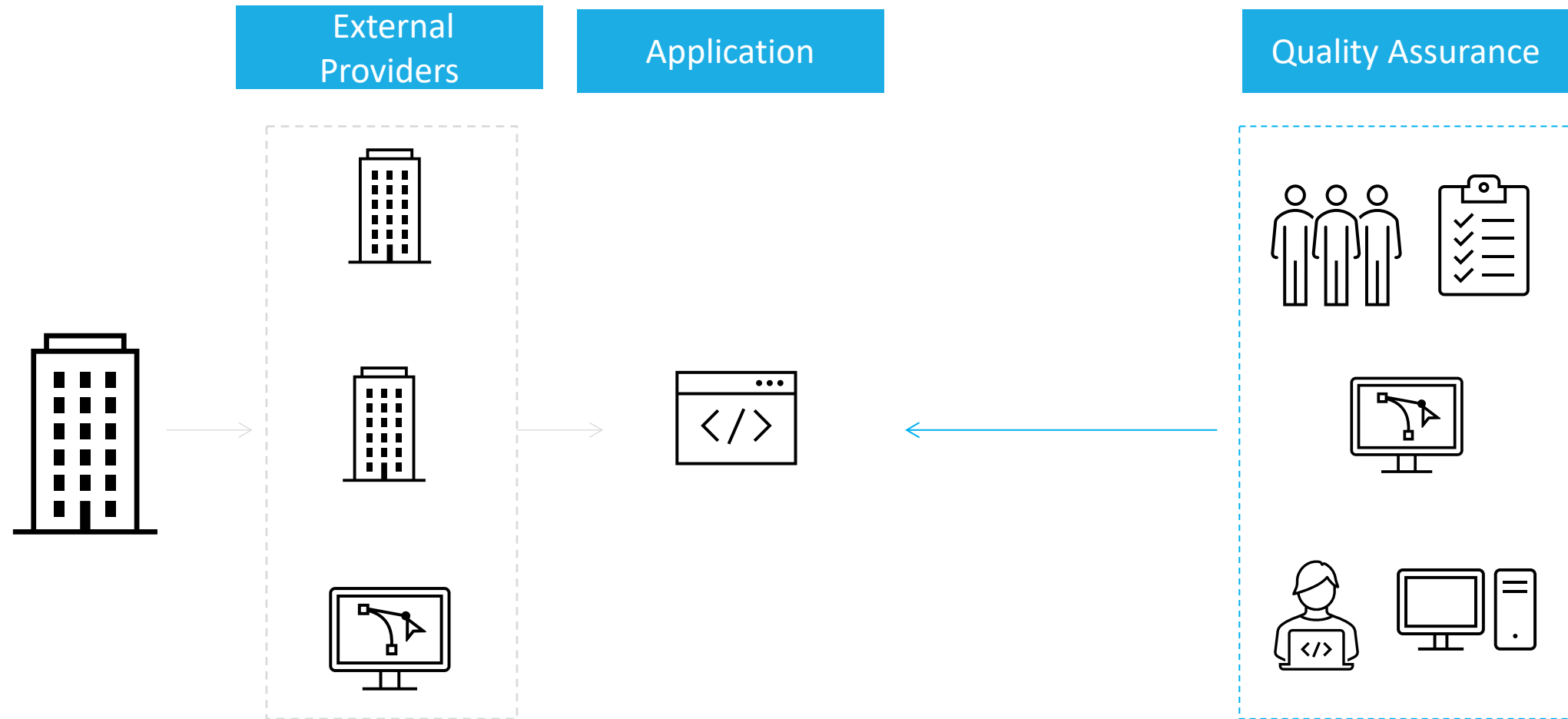
Automatic Bug Detection



Automatic Bug Fix

AI is powerful and has already impacted the QA industry [8].

How Will AI Impact Software QA?



Depending external providers requires more QA practices [9].

Q&A



References

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