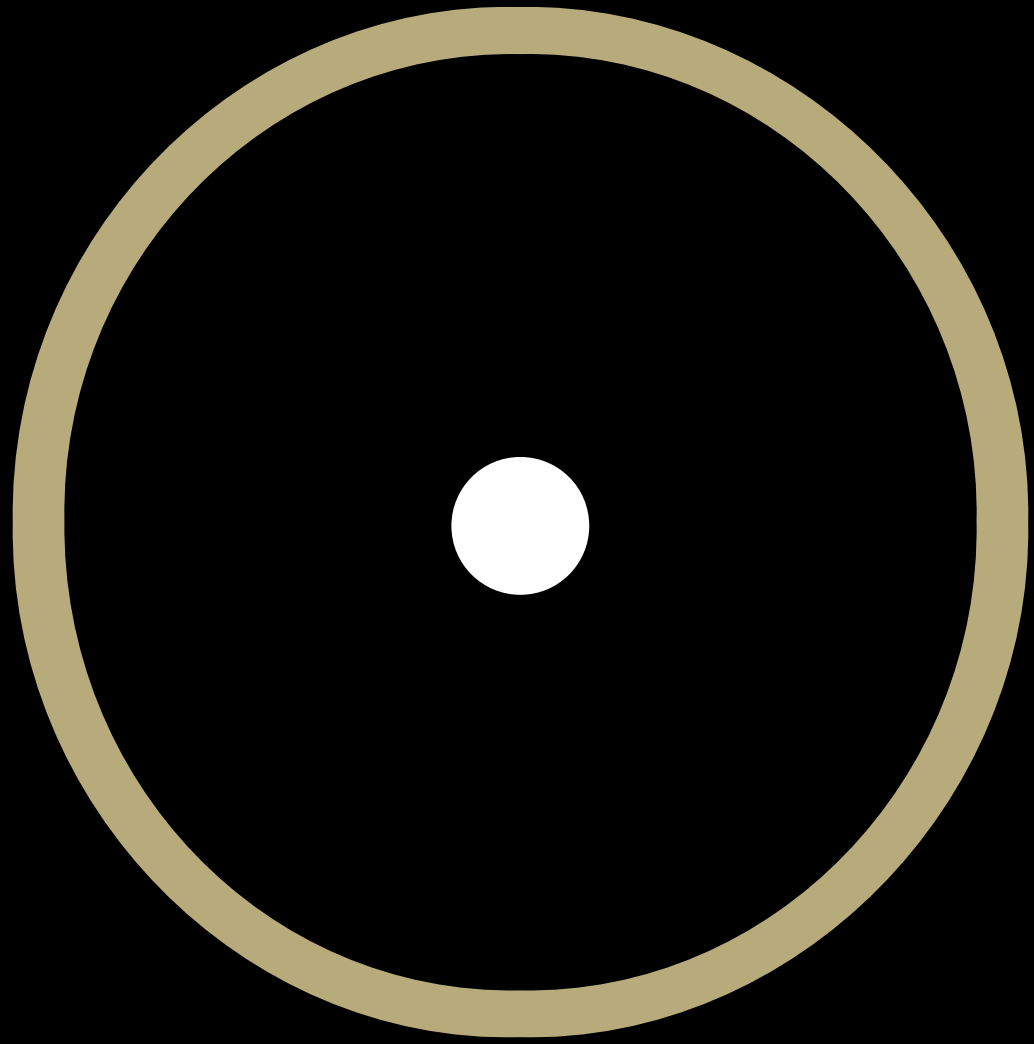
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Konstantinos Kyratsoulis

Senior Test Automation Engineer



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From Classroom to Career

Exploring Test Automation as a Career Path for Computer Science Graduates



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CloudArchitect
Back-endDeveloper
TechnicalWriter
NetworkAdministrator
DevopsEngineer
MobileAppDeveloper
QualityAssuranceAnalyst
ArtificialIntelligence/MachineLearningEngineer
Full-StackDeveloper
SoftwareEngineer
DatabaseAdministrator
Front-endDeveloper
ProjectManager
UXdesigner
DataScientist
GameDeveloper
WebDeveloper
SecurityAnalyst
DataAnalyst

Why do universities and colleges do not have courses in software manual and automation testing as part of their Curriculum?

- Struggle to evolve Curriculum
- Focus on Fundamentals
- Varied Specialization
- Industry-Specific Skills
- Practical Training Opportunities

Search Results in LinkedIn

developer in Greece

1,223 results

- Java Developer
- PHP Developer
- Full Stack Magento
- UI Dev
- ReactJS Front-End
- Web Developer
- Firmware Engineer

tester in Greece

543 results

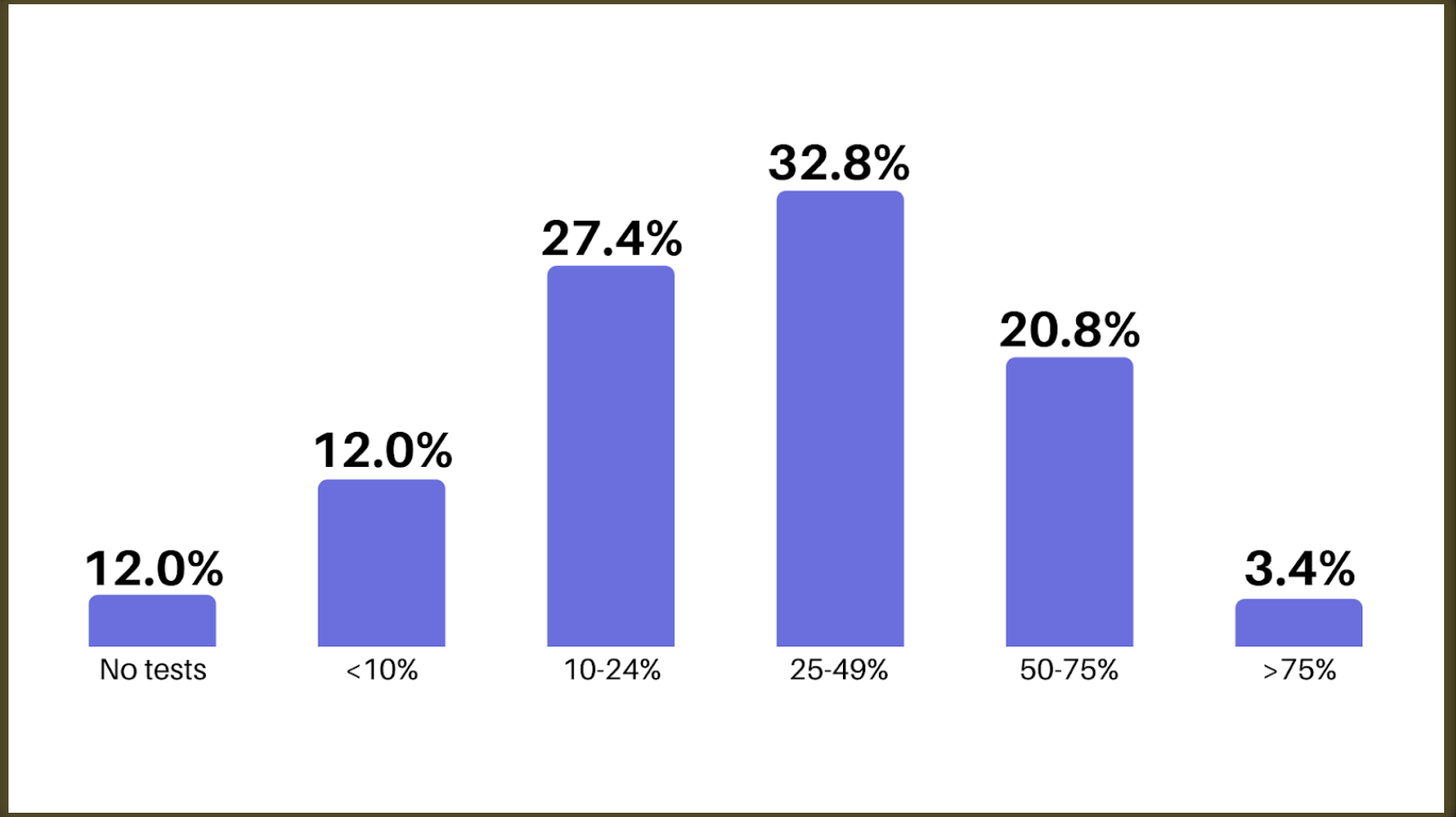
- Test Automation Engineer
- Software Test Analyst
- QA Test Lead
- Test Manager
- Mobile QA Automation Eng.
- Lead Machine Learning Eng.

scrum in Greece

806 results

- Scrum Master
- Agile Deliver Lead
- Scrum Product Owner
- Technical Product Owner

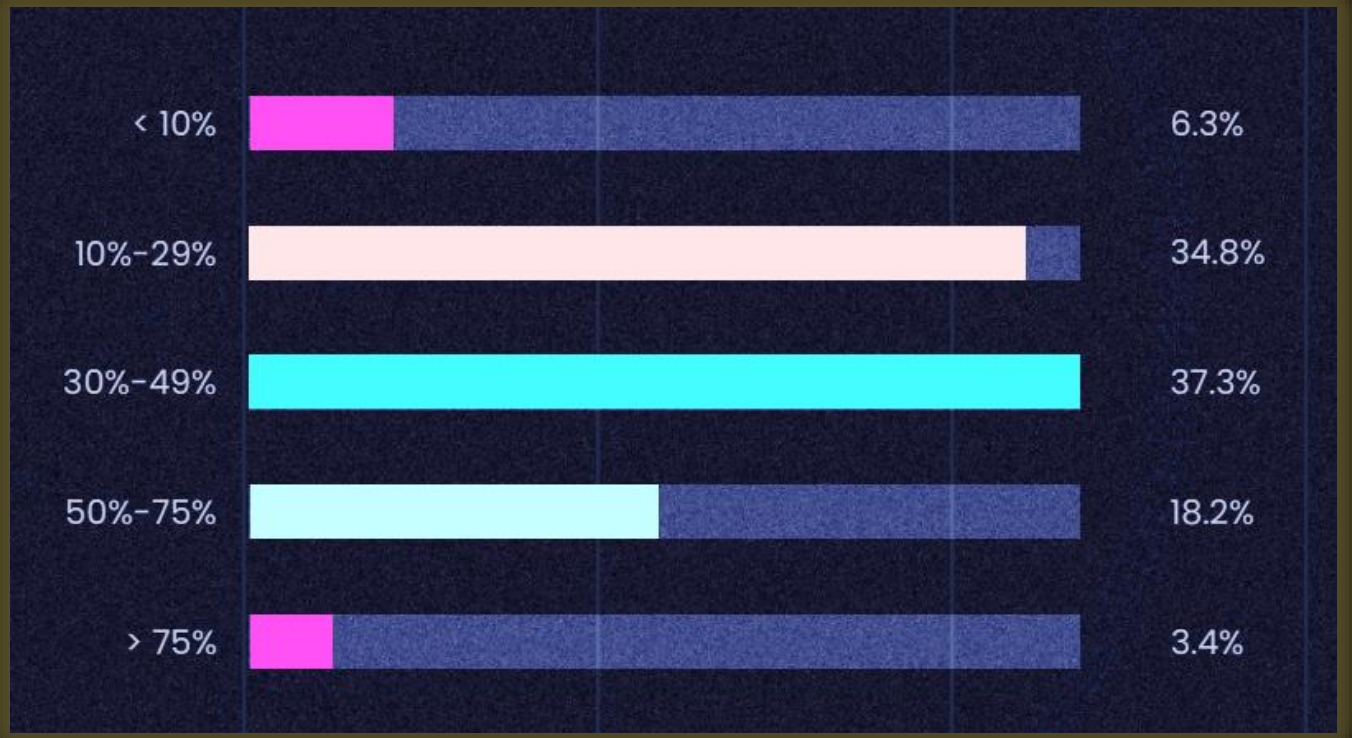
Share of automated test cases



data provided by Katalon(Software Quality Management Platform)

Test automation budget allocation (US)

Most companies using test automation allocate 10% to 49% of the QA budget to test automation



Source: Kobiton

Automation testing can help **boost** your career in computer science in several ways

Graduates – Candidates for future jobs in Software testing

- It demonstrates your knowledge in software testing techniques
- It opens new job opportunities

Manual testers or even developers who want to alternate their career path

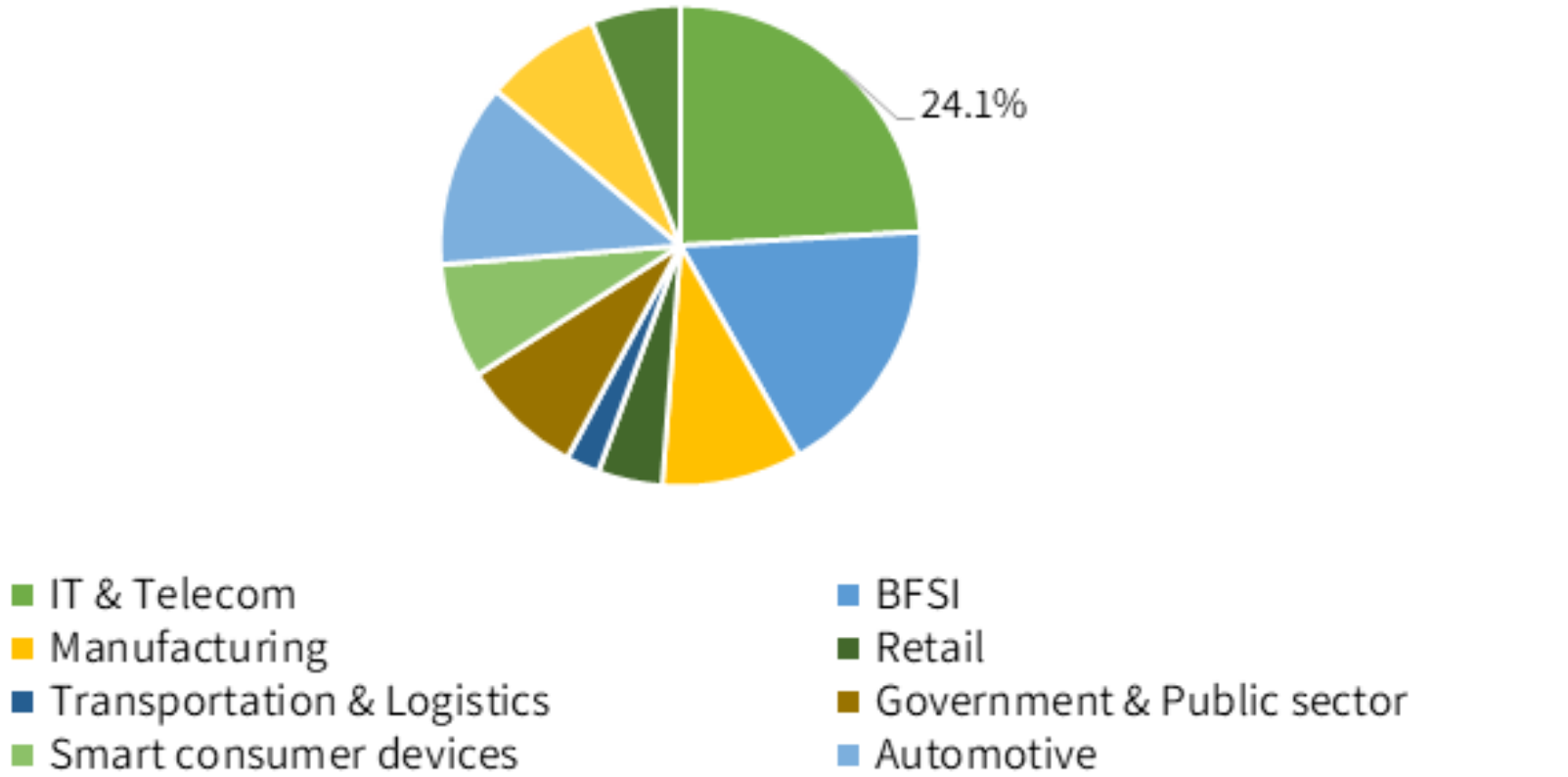
- It increases your efficiency
- It improves software quality

Automation testing is an
important and valuable
skill to have



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Automation Testing Market Share, By Application, 2022 (%)



Source: www.gminsights.com

What is Automation Testing?

Use of software tools to automate the testing process of software and hardware products

- Set of test cases (inscope/regression) to verify that the software or hardware meets its requirements.
- Improve accuracy and efficiency of testing & reduce time and resources.
- Software applications / hardware parts complexity > increasing need for testing.
- Manual testing > time-consuming and error-prone, thus we can automate testing process, improve accuracy and save time.



Benefits to automation testing

- Saves Time and Money
- Increases Your Test Coverage
- Improves Accuracy
- Helps both Developers and Testers
- Improves QA/Dev/Agile Team Morale
- Does What Manual Testing Cannot

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Challenges to endure in automation testing



- Costly Initial Setup and Implementation
- Rely upon the work of others:
  - Wait manual testers / POs for scenarios
  - Developers' coding not "automation friendly"
  - Developers may change front-end code or UI
  - Infrastructure issues
  - Resources limitations

Failures: 0, Errors: 0, Skipped: 0

PASSED

Failures: 0, Errors: 0, Skipped: 0

PASSED

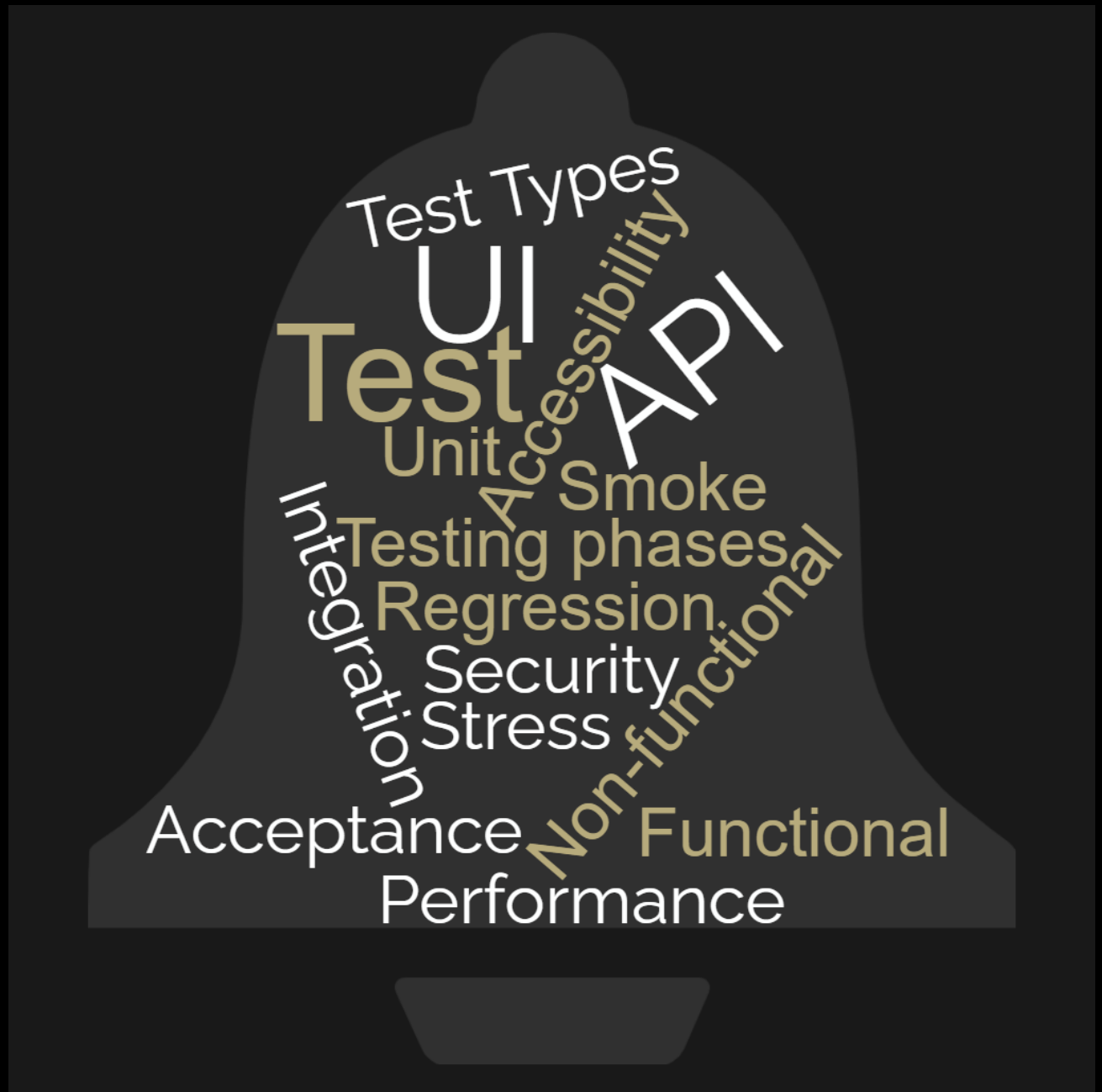
Failures: 0, Errors: 0, Skipped: 0

PASSED

Failures: 0, Errors: 0, Skipped: 0



Types of automation testing



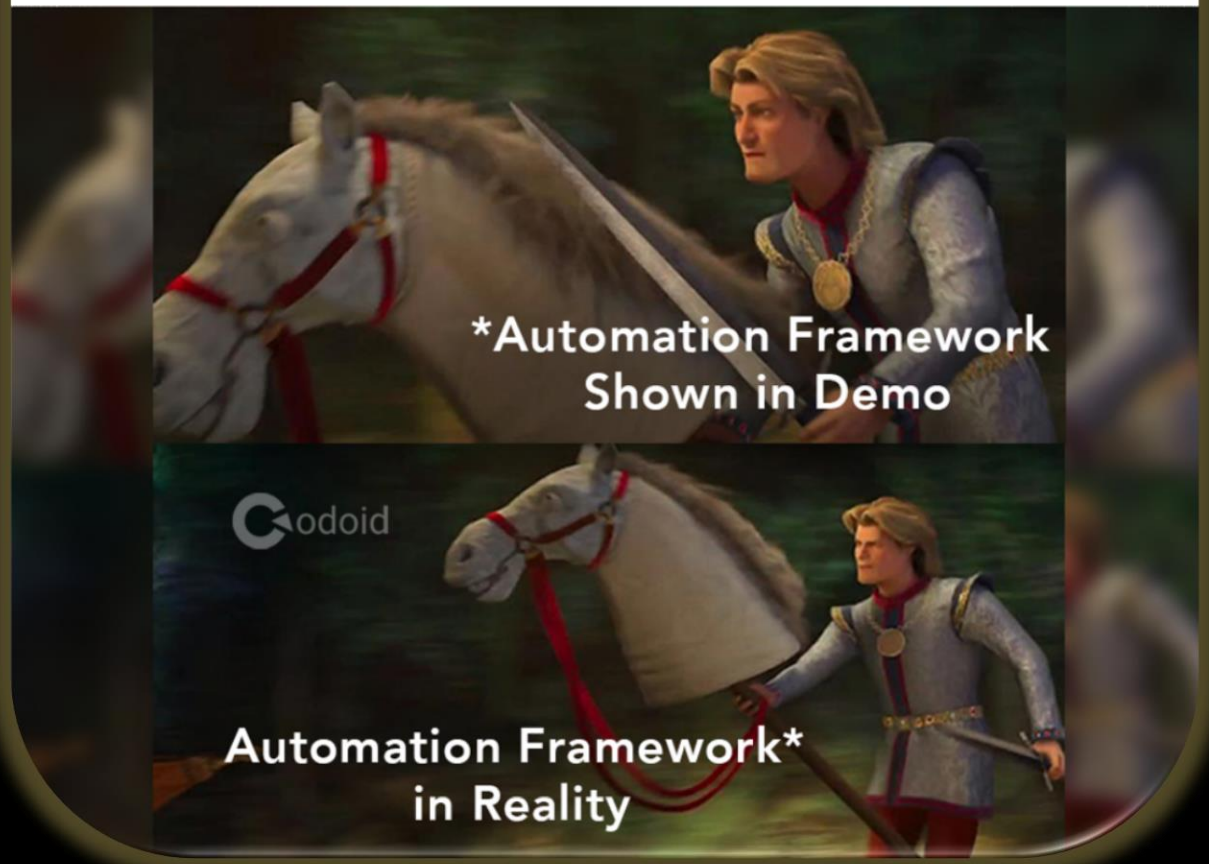
Behavior-Driven Development & Cucumber

- **Emphasizes collaboration** and **communication**
- **Uses** an **easily understood language** (often using Gherkin syntax
- **Cucumber** interprets **Gherkin** and executes automated tests focusing on the **behavior** of the system rather than its implementation.
- **Gherkin** uses **keywords** such as “Given”, “When”, “Then”, “And” and “But” in a step-by-step format.





That moment when you have to Develop an Automation Framework for a Quick Demo



```
@UI @Cart_Operations @PI01S01
Feature: Cart User Operations
  Description: The purpose of this feature is to test the user actions to the cart.


  Background: Website is up and user is Logged In
    Given the user navigates to LUMA home page
    When the user logs in as Admin
    Then the user should be logged in


  @UI @LUMA-6 @Cart
  Scenario: Add product to the cart and check that Size and Color are required fields
    Given the user navigates to Men page and type Jackets
    When the user adds product Proteus Fitness Jackshirt to the cart
    Then the user is notified that Size and Color are required fields

    @UI @LUMA-1 @Cart
    Scenario Outline: Cart - Add product to the cart successfully and then remove it
      Given the user navigates to the following Path
        | Page  | Type                |
        | Women | Hoodies & Sweatshirts |
      When the user adds product "<Product>" to the cart with size "<Size>" and color "<Color>"
      Then the correct product is added to the cart
      And the user removes product "<Product>" from the cart
      Examples:
        | Product                | Size | Color  |
        | Circe Hooded Ice Fleece | S    | Purple |
        | Eos V-Neck Hoodie       | M    | Blue   |
        | Helena Hooded Fleece    | XS   | Gray   |
```

How you doin' ???


When you Finish your Testing
When you Realize you tested in the Wrong Environment
odoid
*Tester

Agile Scrum Team

agilekrc

SCRUM

***Core artifacts**
Product backlog
Sprint backlog
Increment

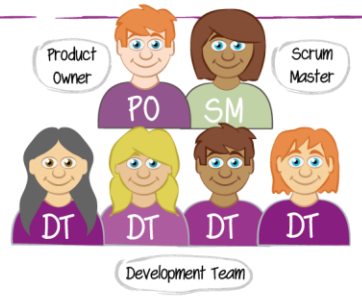
START

1 Select Scrum Team

Product Owner – represents the customer, communicates the priorities and vision to the team.

Scrum Master - acts as a facilitator between the Product Owner and team.

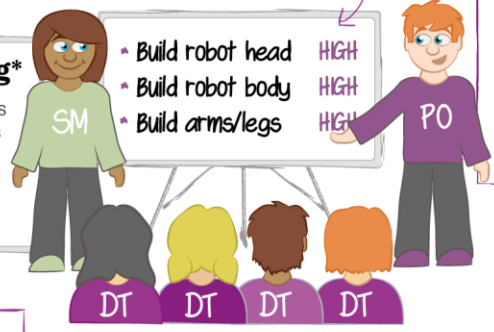
Development Team – self-organized, responsible for developing the product.



Product backlog*

The Product Owner creates a product backlog which is a 'prioritized wishlist'. The Product Owner owns the backlog but everyone can add to it.

Highest priority items (user stories) from product backlog



2 Sprint planning

The Product Owner presents the highest priority items from the Product Backlog to the Development Team. The Development Team decide what they can complete for the sprint and break user stories into tasks, estimating the effort and transferring them to a sprint backlog.

Sprint backlog*

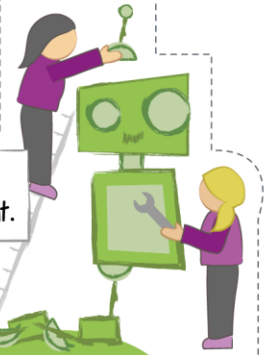
Stories	Tasks	Effort
Head		21
Body		34
Arms		13
Legs		13



3 The sprint

One sprint cycle lasts 2-4 weeks

Working on the increment and tracking progress continues throughout the sprint.



Tracking progress



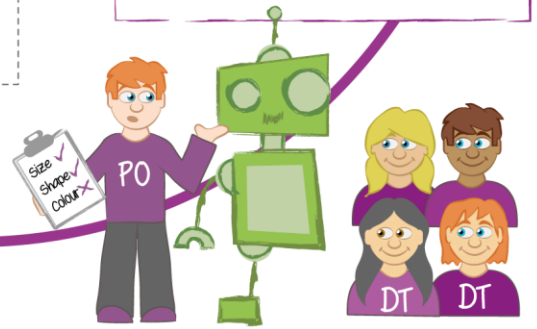
Working on increment

15 mins max

Daily team meetings are held to discuss progress and daily plans, overseen by the Scrum Master.

4 Sprint review

The Development Team members demo the product increment to the Product Owner, who makes necessary changes to the Product Backlog. Feedback and suggestions are given.



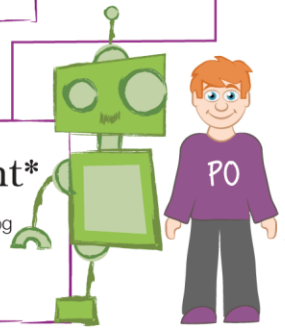
5 Sprint retrospective

The team evaluate the sprint. They decide what worked and what didn't in order to improve the next sprint.



6 Product increment*

The increment is the output of all product backlog items completed during the sprint and previous sprints. It must be in a useable condition. The Product Owner decides whether to release it.



Final delivery

FINISH

Once all the user stories are completed to the Product Owner's satisfaction, the product is ready to give to the customer.



Interim delivery

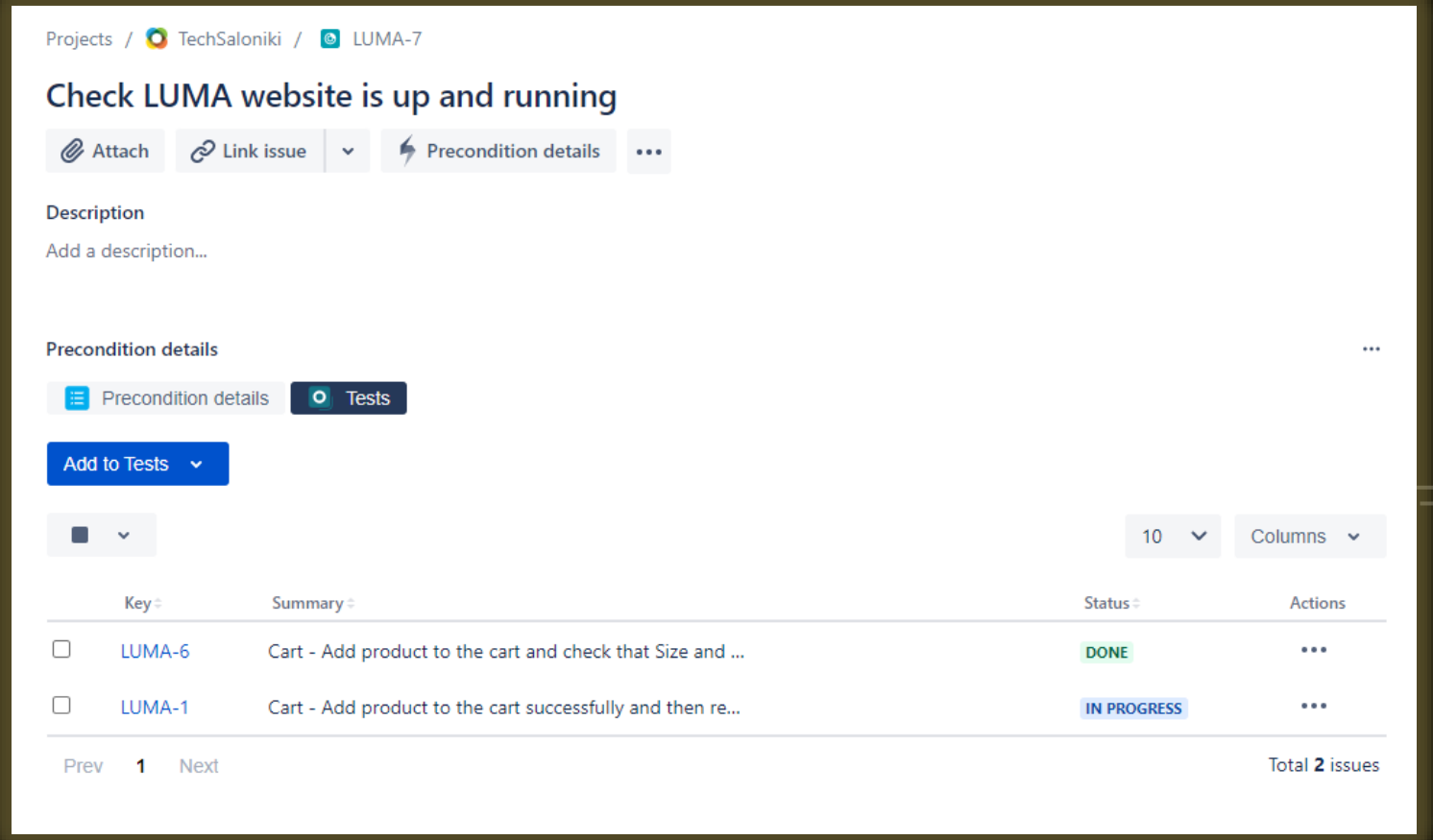
The product increment is tested by the customer. If the product is incomplete, the Development Team return to the product backlog to prepare for another sprint. This cycle repeats until all user stories are completed to the Product Owner's satisfaction.



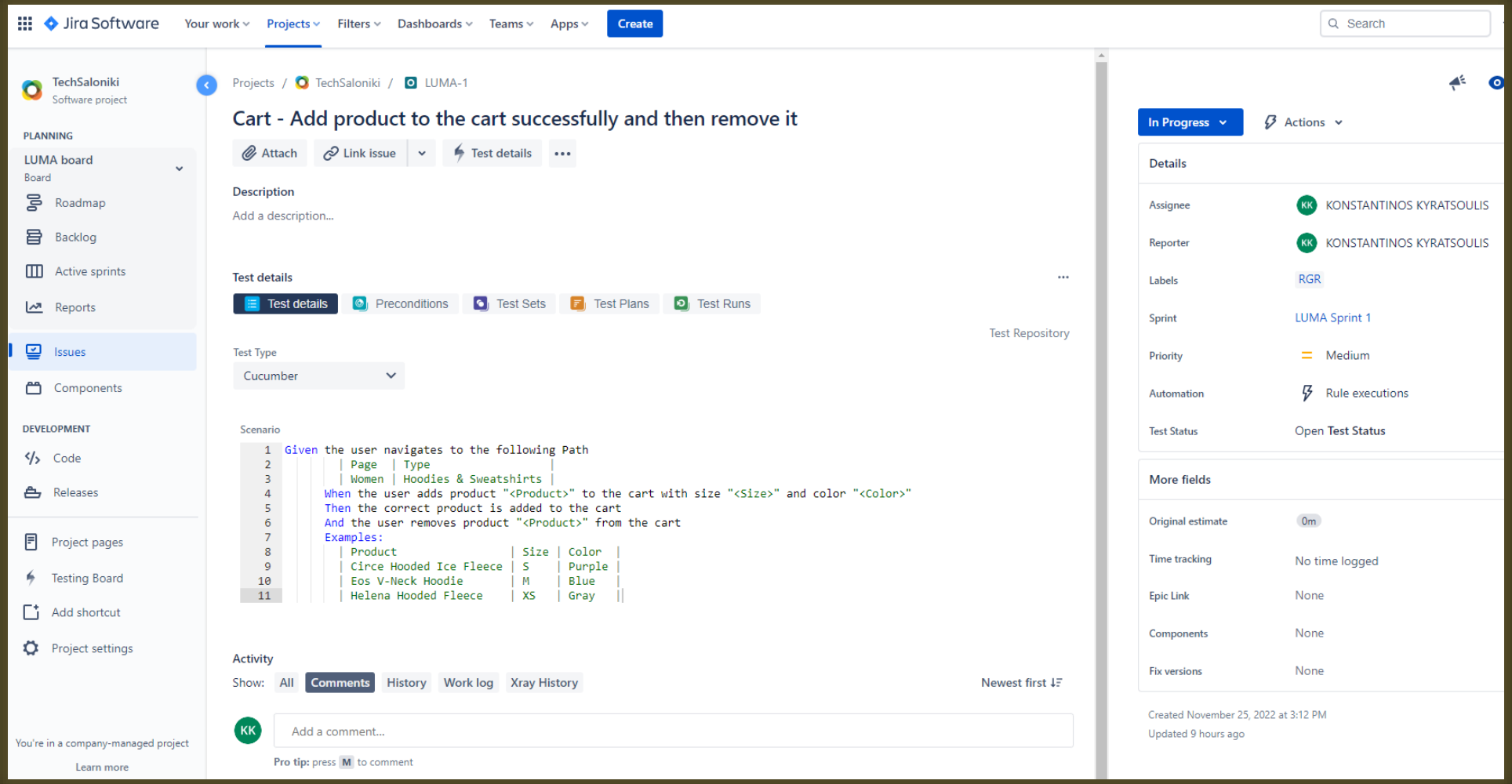
Copyright © 2020 agileKRC Ltd. All Rights Reserved.

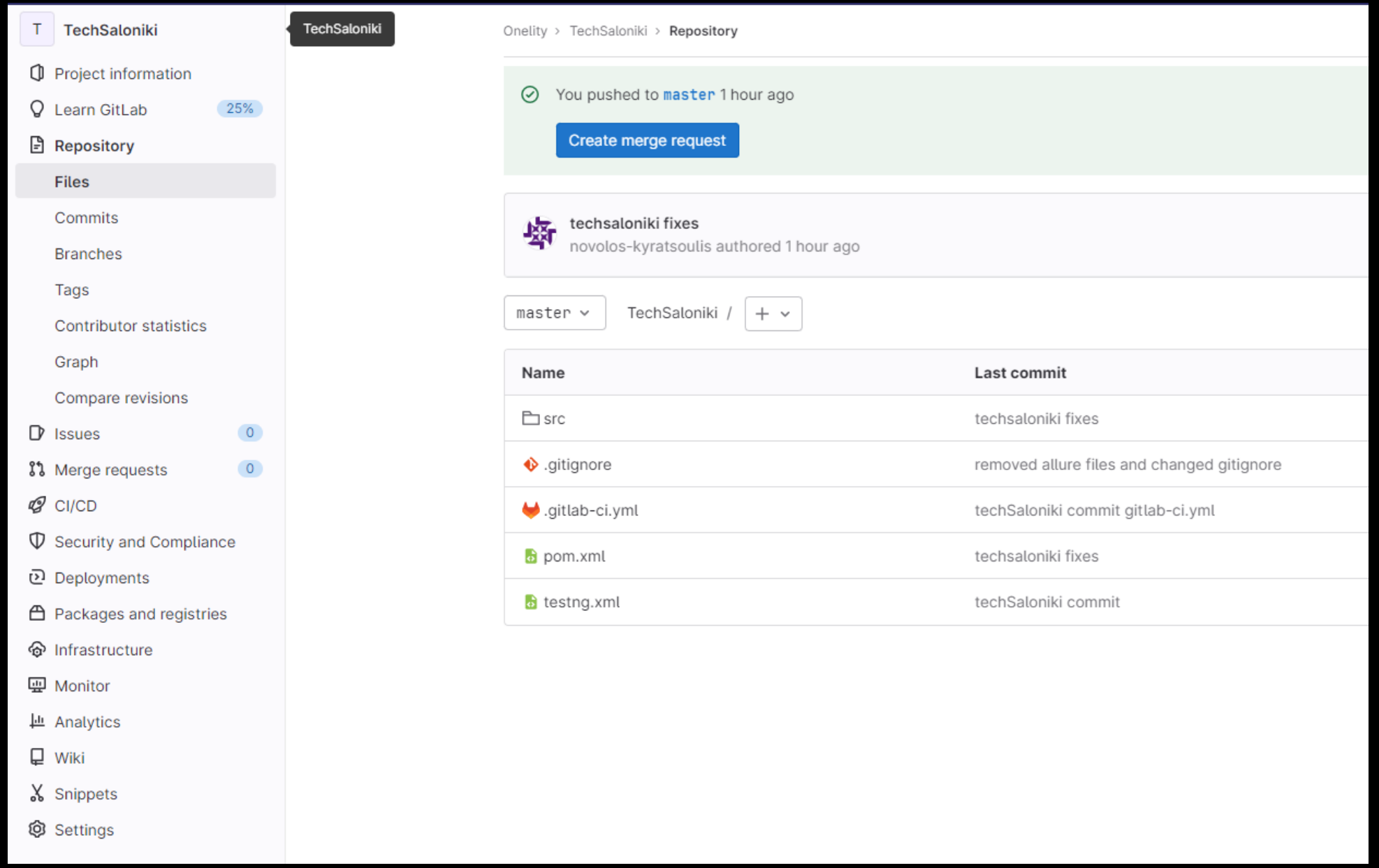
Precondition in JIRA (Background in feature file)

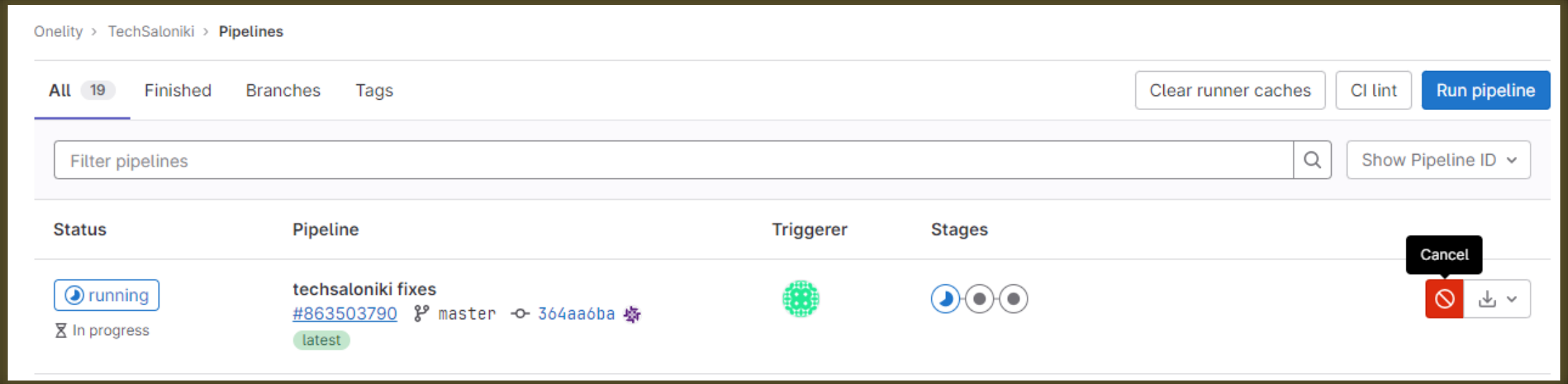


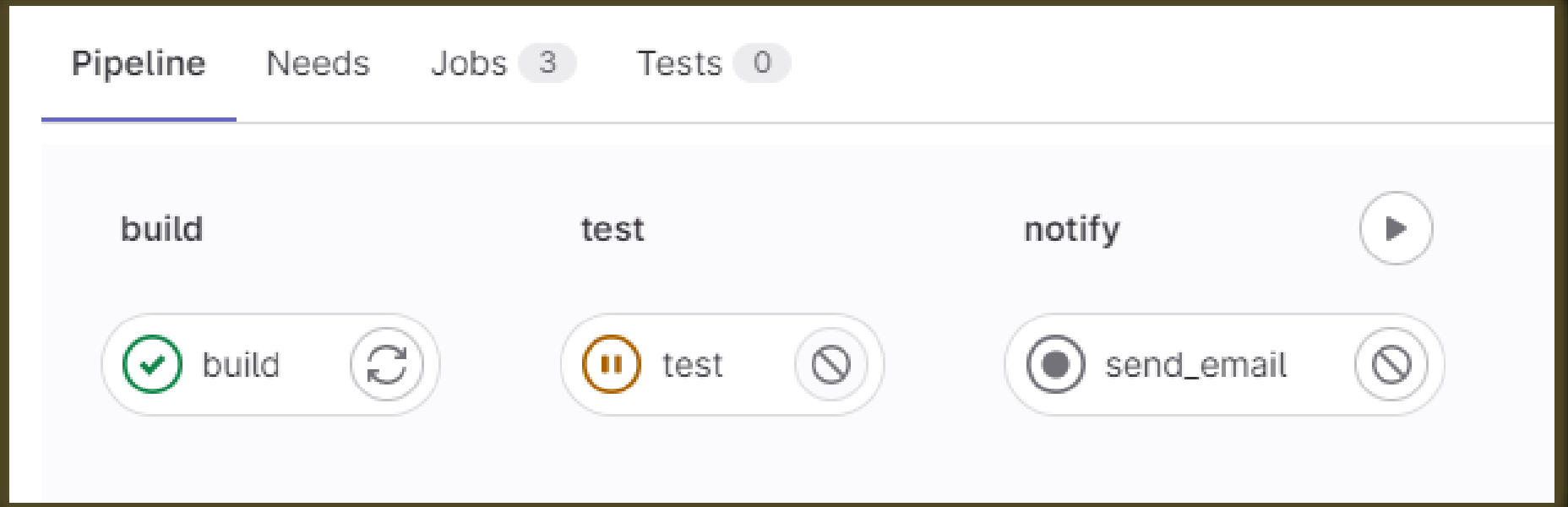


Automation Tests – Cucumber Scenario




T
TechSaloniki
TechSaloniki
Project information
Learn GitLab
25%
Repository
Files
Commits
Branches
Tags
Contributor statistics
Graph
Compare revisions
Issues
0
Merge requests
0
CI/CD
Security and Compliance
Deployments
Packages and registries
Infrastructure
Monitor
Analytics
Wiki
Snippets
Settings
Onelity › TechSaloniki › Repository
You pushed to master 1 hour ago
Create merge request
techsaloniki fixes
novolos-kyratsoulis authored 1 hour ago
master
TechSaloniki /
Name
Last commit
src
techsaloniki fixes
.gitignore
removed allure files and changed gitignore
.gitlab-ci.yml
techSaloniki commit gitlab-ci.yml
pom.xml
techsaloniki fixes
testng.xml
techSaloniki commit


Onelity › TechSaloniki › Pipelines
All 19
Finished
Branches
Tags
Clear runner caches
CI lint
Run pipeline
Filter pipelines
Show Pipeline ID
Status
Pipeline
Triggerer
Stages
Cancel
running
In progress
techsaloniki fixes
#863503790
master
364aa6ba
latest


Pipeline
Needs
Jobs 3
Tests 0
build
test
notify
build
test
send_email

ONELITY



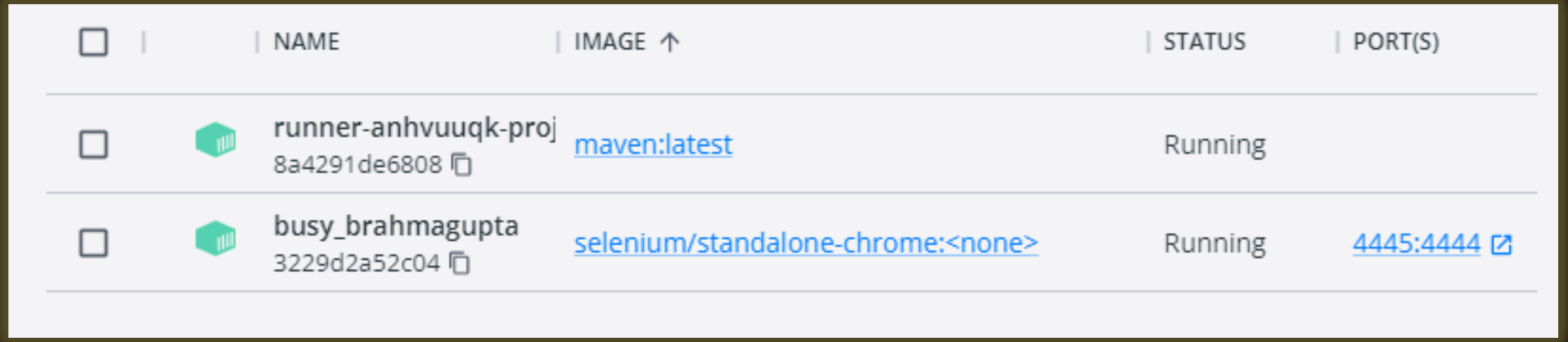

```
# WebDriver Configuration
BROWSER=chrome
DRIVER.REMOTE.URL=http://172.17.0.2:4444/wd/hub
#DRIVER.REMOTE.URL
```

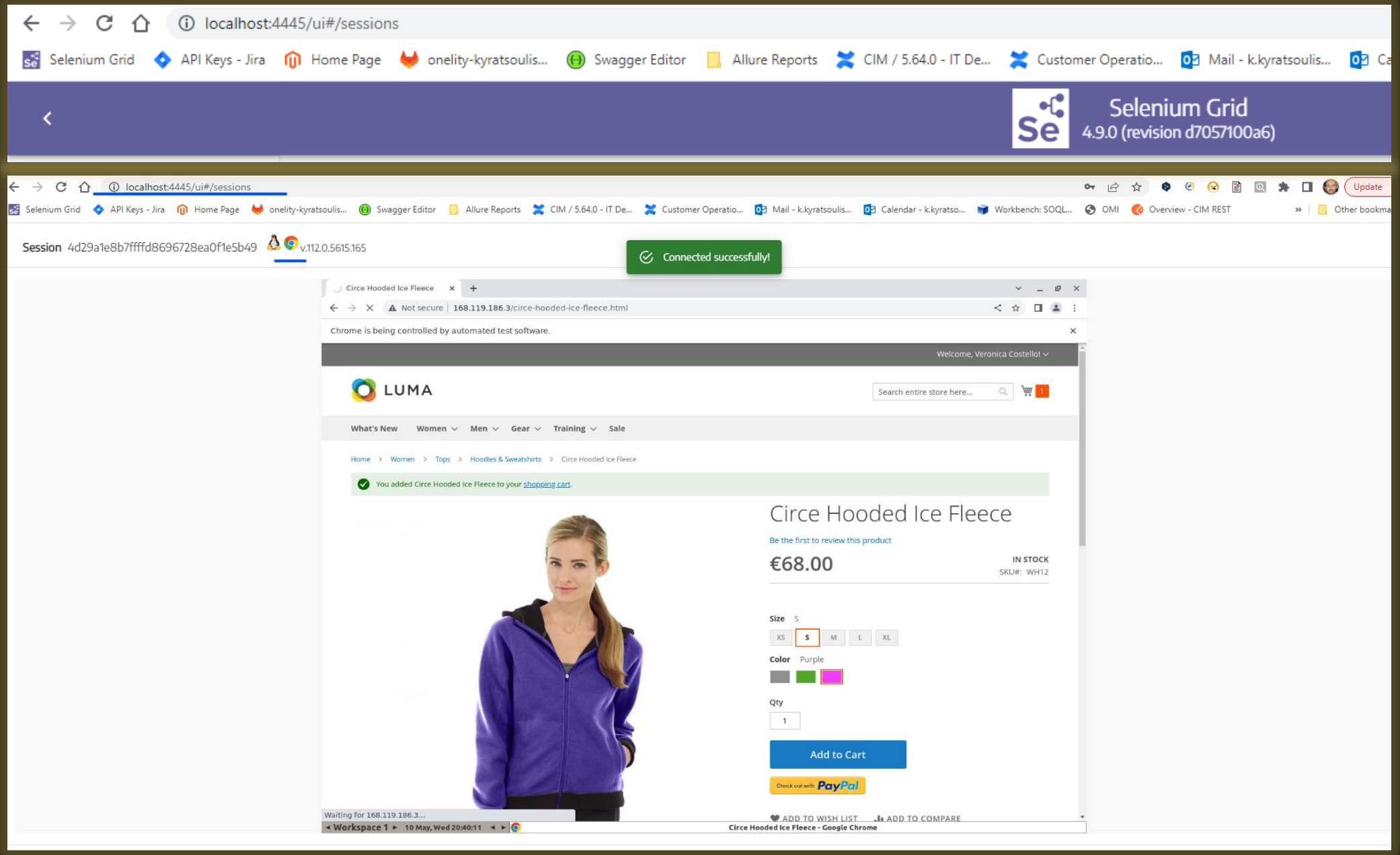
```yaml
variables:
  SELENIUM_REMOTE_URL: http://172.17.0.2:4444/wd/hub
  GITLAB_TARGET_SELENIUM_REMOTE_URL: http://172.17.0.2:4444/wd/hub
  GIT_SSL_NO_VERIFY: "true"
  MAVEN_OPTS: "-Dmaven.repo.local=.m2/repository"

stages:          # List of stages for jobs, and their order of execution
  - build
  - test
  - notify

build:
  stage: build
  script:
    echo "Build project"
    mvn clean install -DskipTests
```

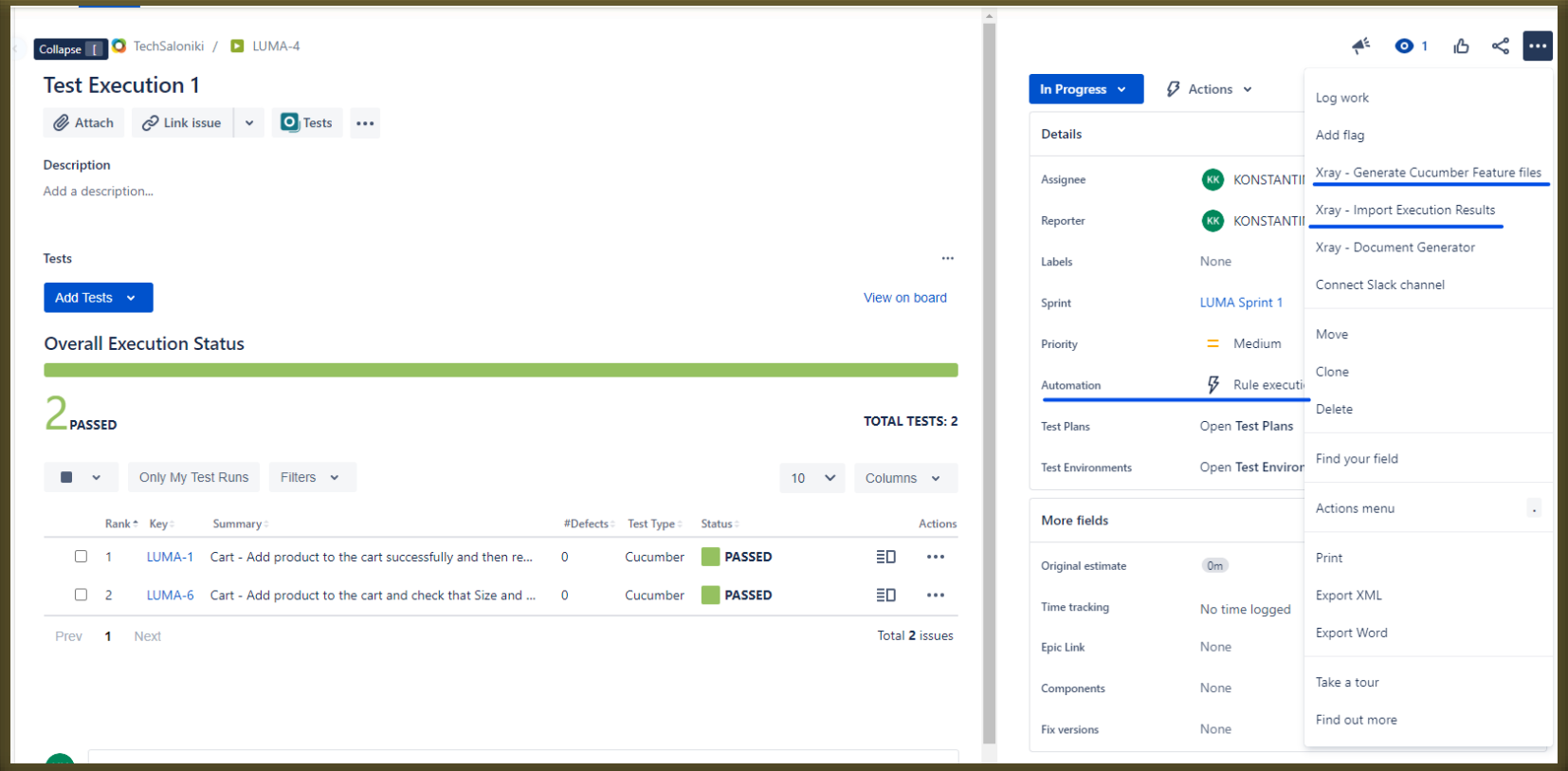
```yaml
  script:
    - |
      echo "Running tests..."
      mvn test "-Dcucumber.filter.tags=@UI"
      echo "Creating report..."
      mkdir public
      mv target/cucumber-JVM-reports/cucumber-html-reports/ public/
      export token=$(curl -H "Content-Type: application/json" -X POST --data "{\"client_id\": \"$client_id\", \"client_secret\": \"$client_secret\" }" $xray_endpoint/api/v1/authenticate| tr -d '"')
      curl -H "Content-Type: application/json" -X POST -H "Authorization: Bearer ${token}" --data @target/cucumber_linear.json "$xray_endpoint/api/v1/import/execution/cucumber"
```


NAME
IMAGE
STATUS
PORT(S)
runner-anhvuuqk-proj
8a4291de6808
maven:latest
Running
busy_brahmagupta
3229d2a52c04
selenium/standalone-chrome:<none>
Running
4445:4444

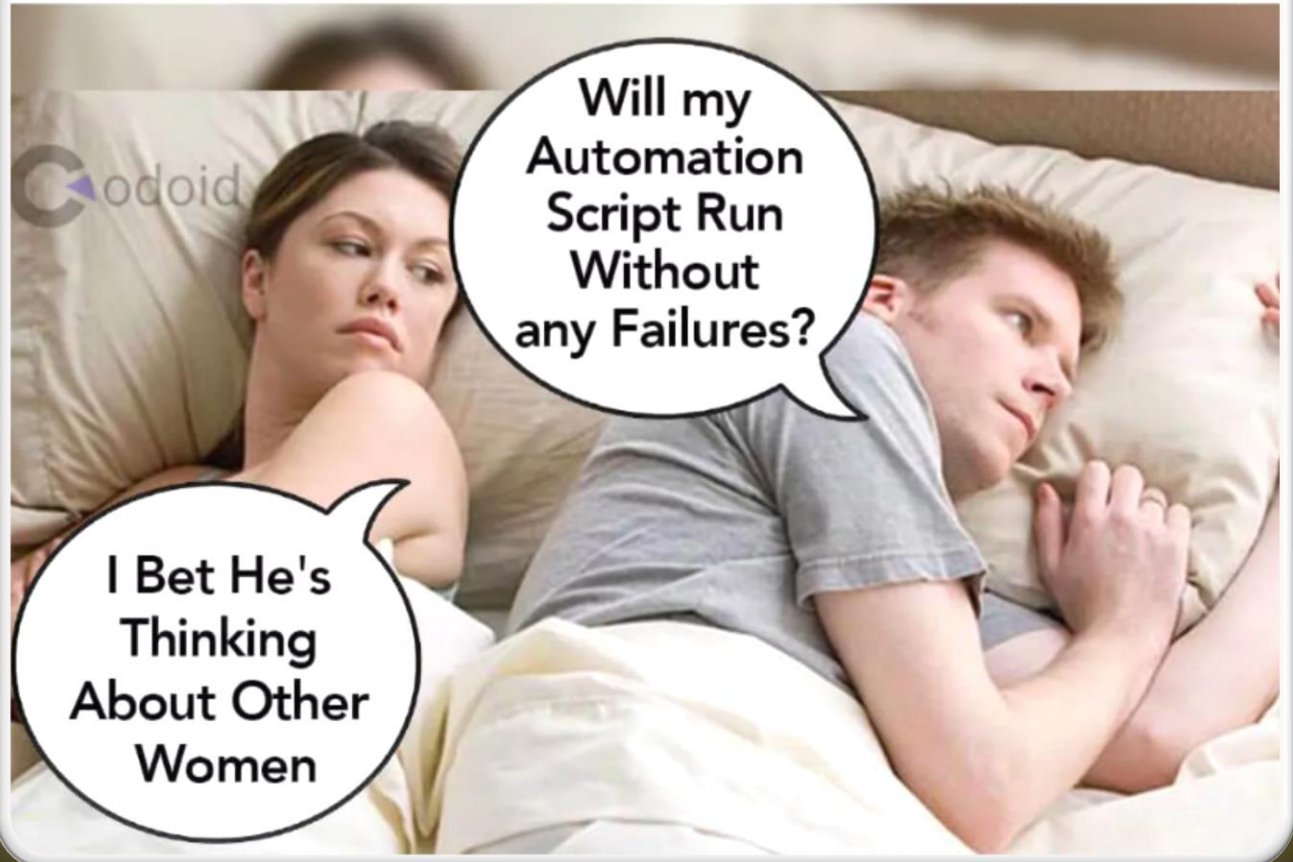

localhost:4445/ui#/sessions
Selenium Grid
API Keys - Jira
Home Page
onelity-kyratsoulis...
Swagger Editor
Allure Reports
CIM / 5.64.0 - IT De...
Customer Operatio...
Mail - k.kyratsoulis...
Selenium Grid
4.9.0 (revision d7057100a6)
Session 4d29a1e8b7ffffd8696728ea0f1e5b49
v.112.0.5615.165
Connected successfully!
Circe Hooded Ice Fleece
Not secure | 168.119.186.3/circe-hooded-ice-fleece.html
Chrome is being controlled by automated test software.
Welcome, Veronica Costello!
LUMA
Search entire store here...
What's New
Women
Men
Gear
Training
Sale
Home > Women > Tops > Hoodies & Sweatshirts > Circe Hooded Ice Fleece
You added Circe Hooded Ice Fleece to your shopping cart.
Circe Hooded Ice Fleece
Be the first to review this product
€68.00
IN STOCK
SKU#: WH12
Size S
XS S M L XL
Color Purple
Qty
1
Add to Cart
Check out with PayPal
ADD TO WISH LIST
ADD TO COMPARE
Waiting for 168.119.186.3...
Workspace 1
10 May, Wed 20:40:11
Circe Hooded Ice Fleece - Google Chrome

Test Execution (imported results or created via Gitlab Runner)

```
script:
  - |
    echo "Running tests..."
    mvn test "-Dcucumber.filter.tags=@UI"
    echo "Creating report..."
    mkdir public
    mv target/cucumber-JVM-reports/cucumber-html-reports/ public/
    export token=$(curl -H "Content-Type: application/json" -X POST --data "{\"client_id\": \"$client_id\", \"client_secret\": \"$client_secret\" }" $xray_endpoint/api/v1/
authenticate| tr -d '"')
    curl -H "Content-Type: application/json" -X POST -H "Authorization: Bearer ${token}" --data @target/cucumber_linear.json "$xray_endpoint/api/v1/import/execution/cucumber"
```

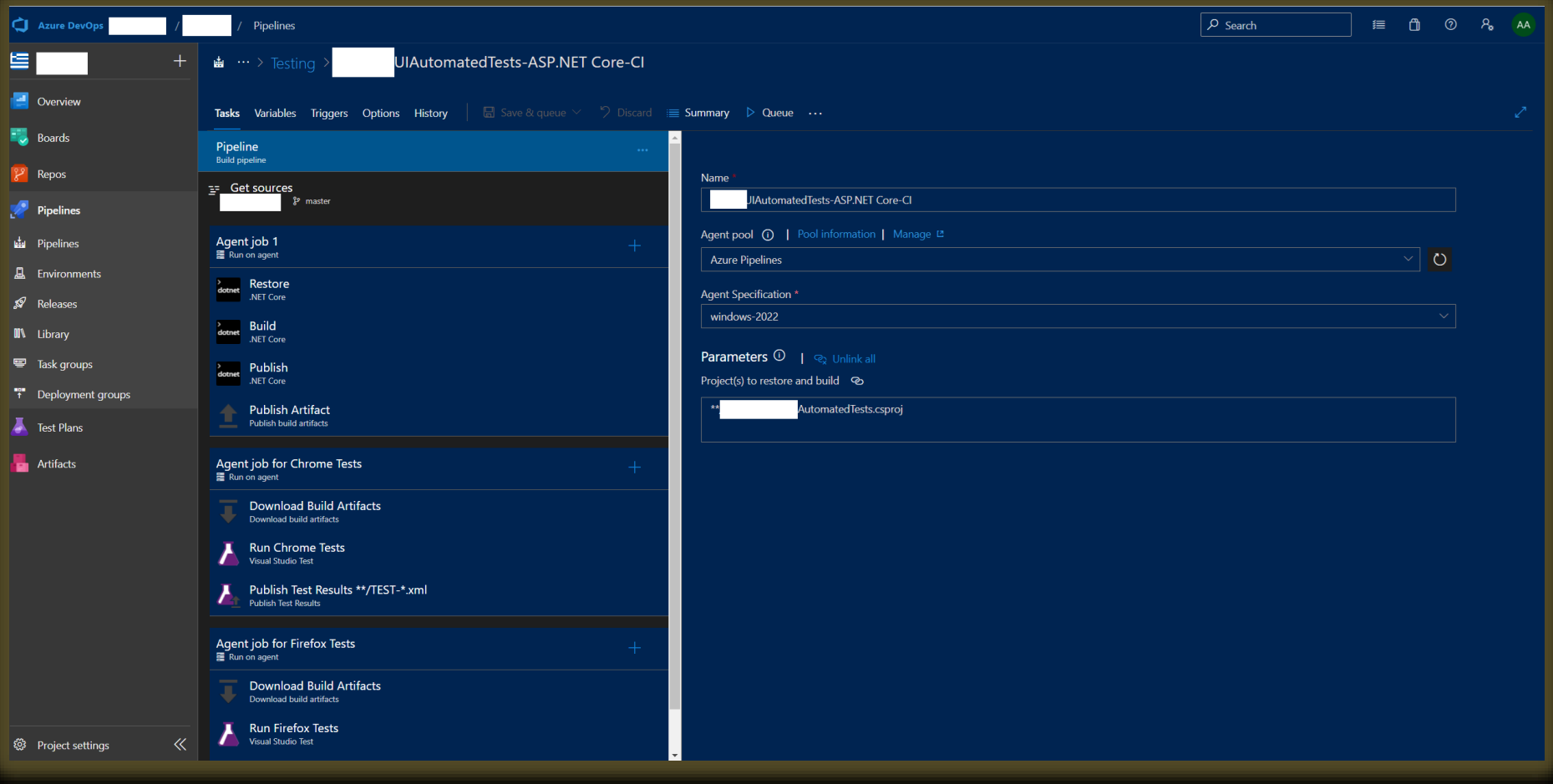


When a Hardcore Tester runs his automation scripts overnight



Azure DevOps: Issue management, Test Case/Test Plan/Test Suite/Bug/Report management

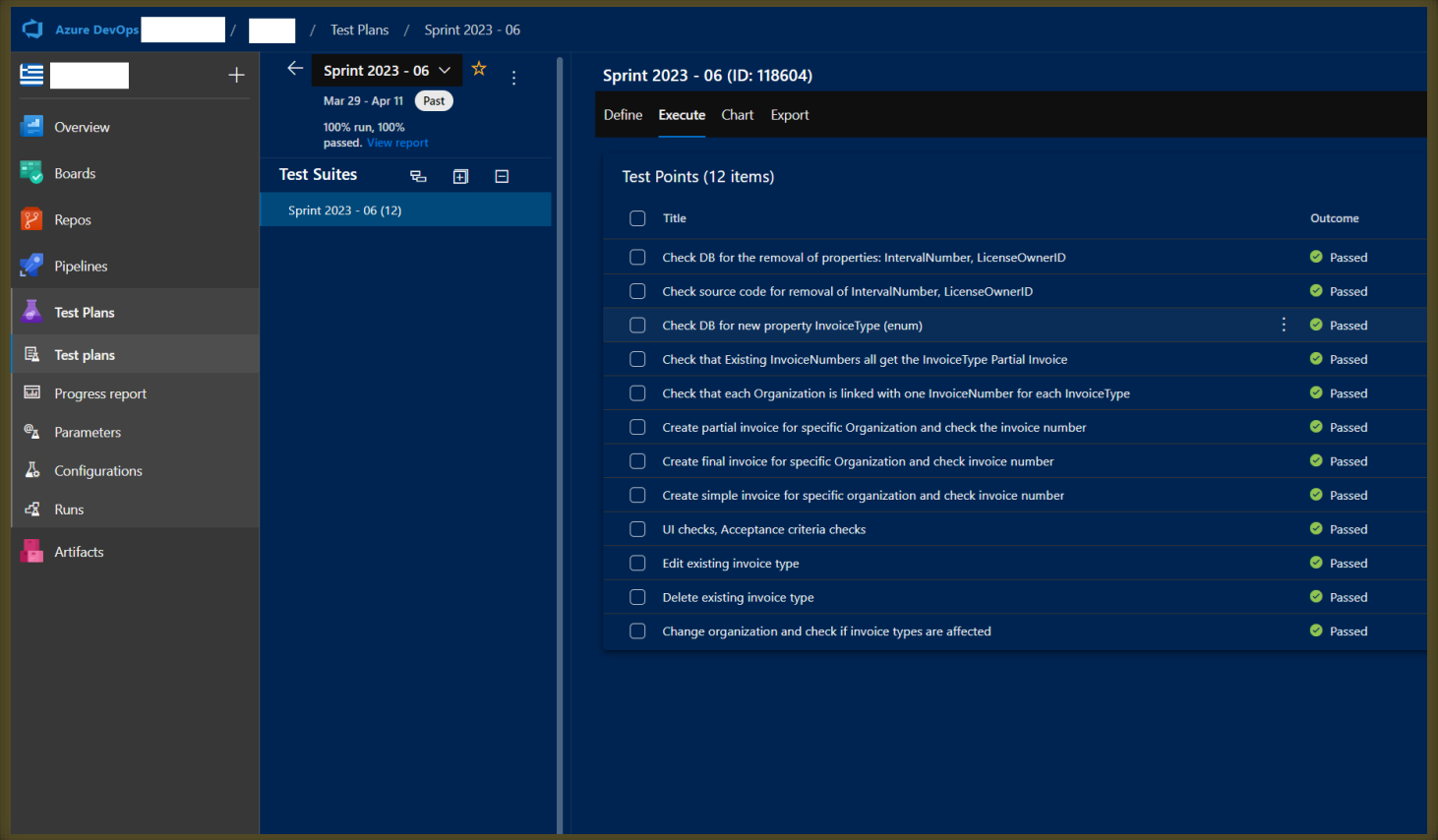
Testing Pipeline Setup

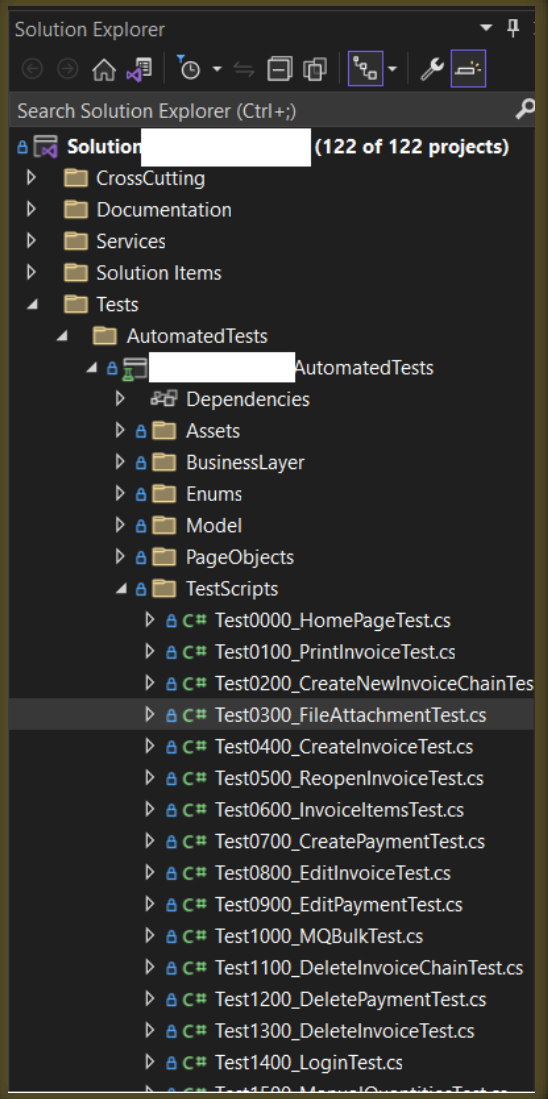




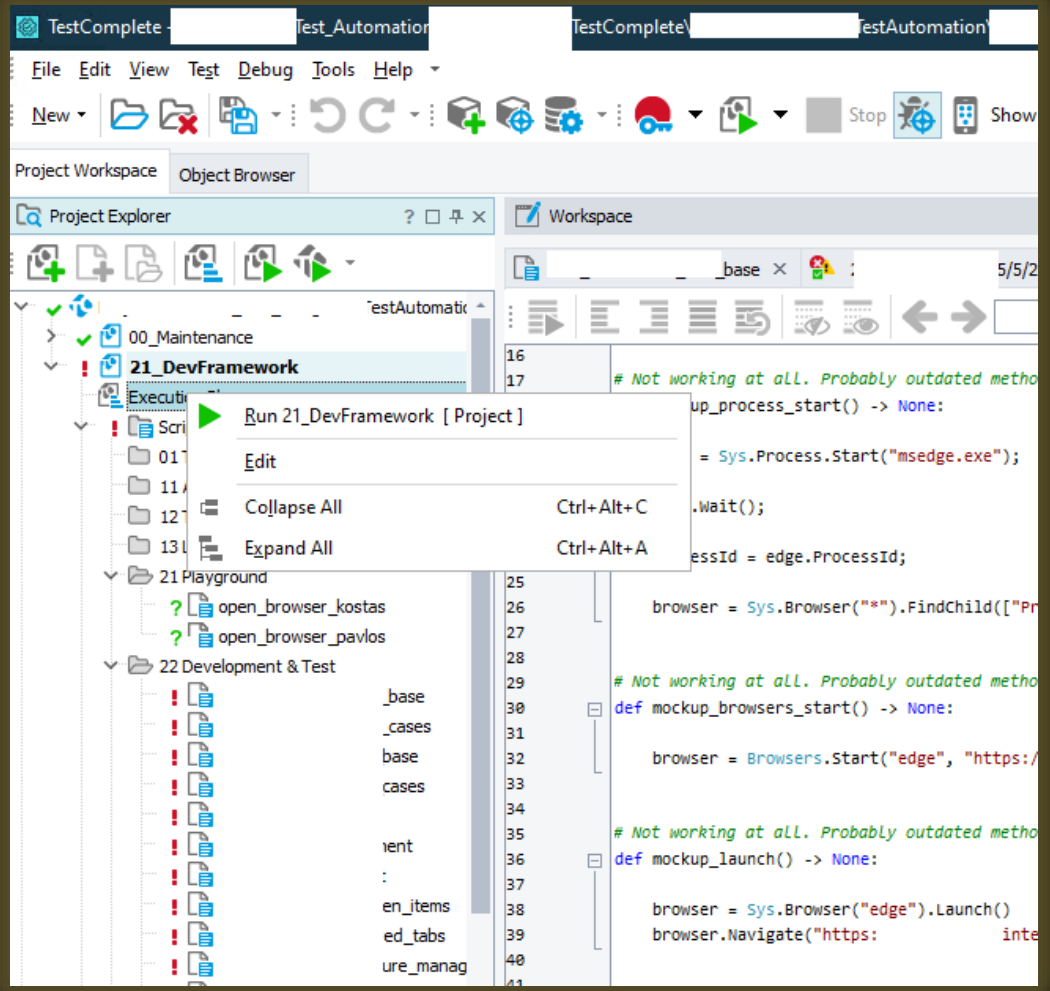
Visual Studio: branch testing, automation testing (Selenium, C# ASP.NET)

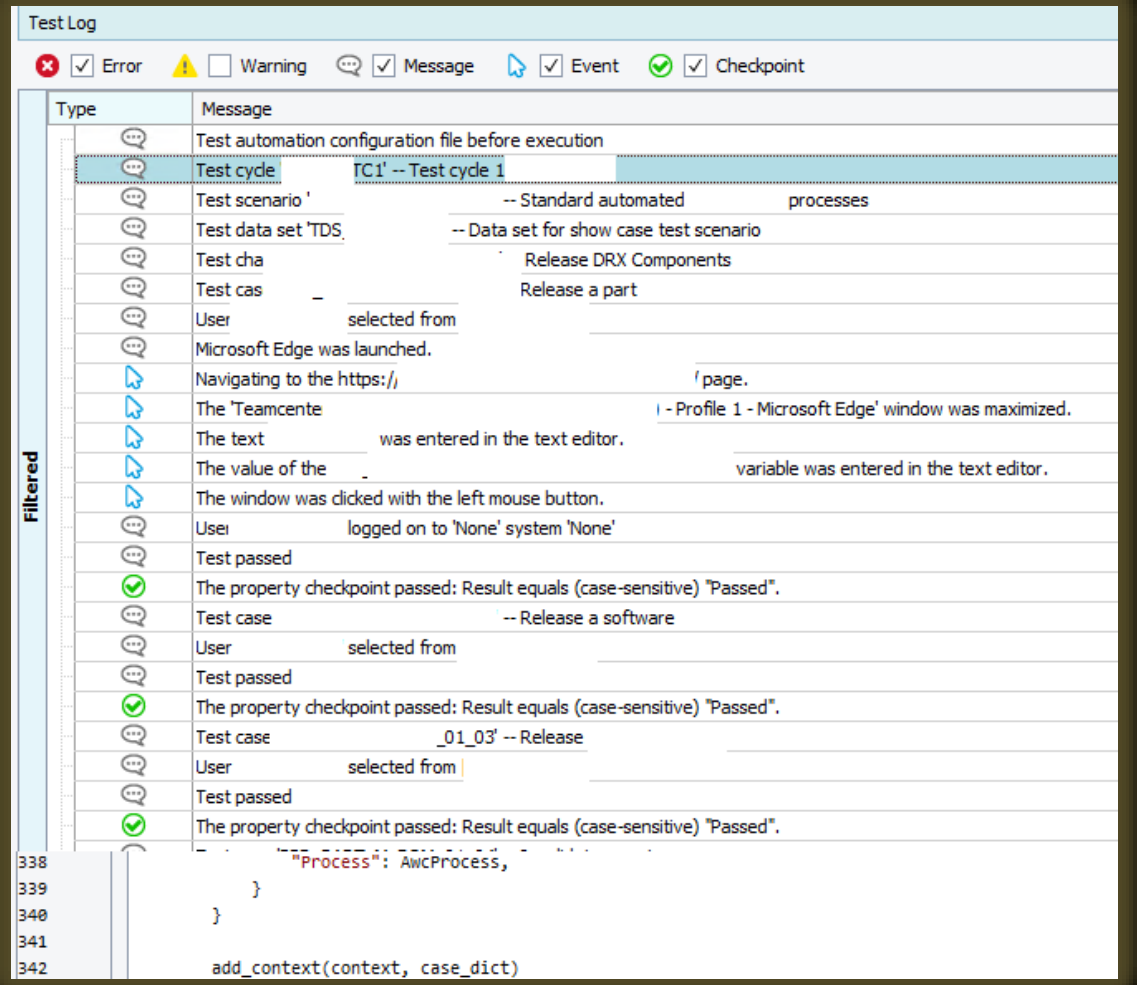
Test Configurations





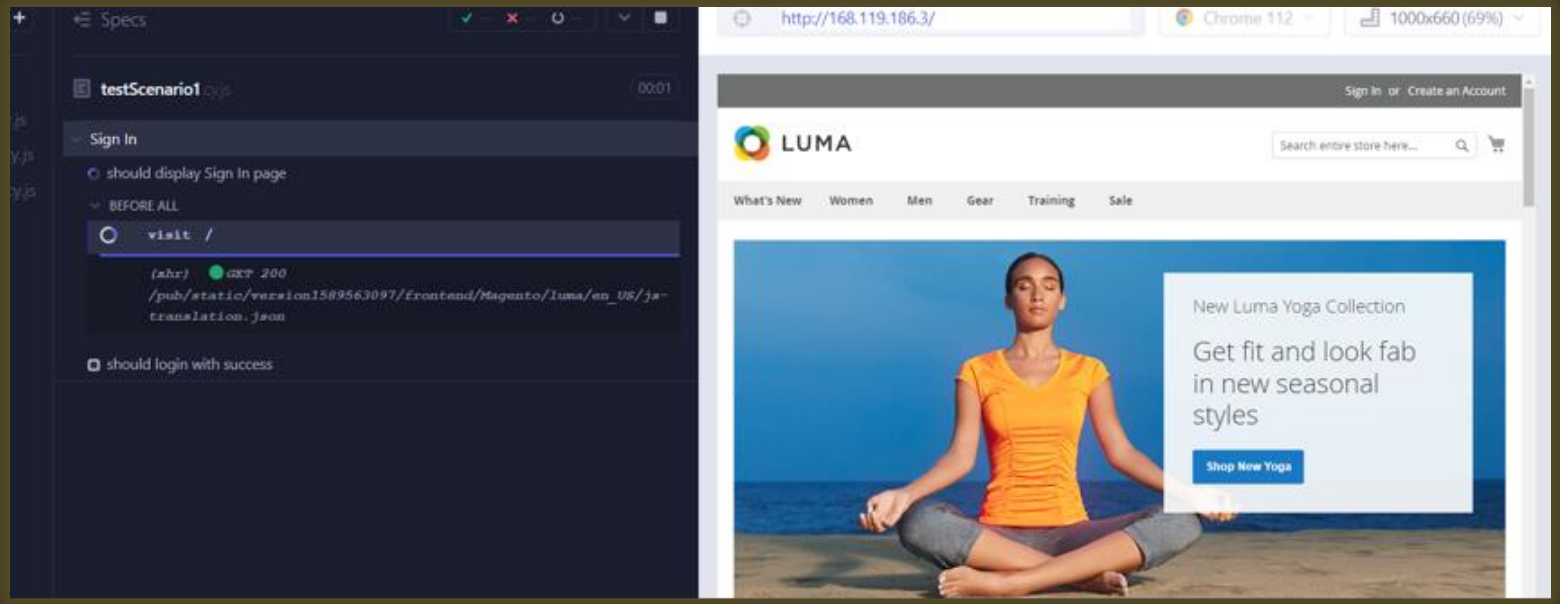
TestComplete (automated testing platform developed by SmartBear Software) & Python





Cypress & JavaScript





Cypress & JavaScript (Parallel execution with docker & lambdaTest for daily automation report in your email)

```
{
  "lambdatest_auth": {
    "username": "dai18033",
    "access_key": "xITYYUwkdC74XxBOMyuSdeQyMomZZyeMUVj1I9hC3Q0047N9ytE"
  },
  "browsers": [
    {
      "browser": "Chrome",
      "platform": "Windows 10",
      "versions": [
        "86.0"
      ]
    },
    {
      "browser": "Firefox",
      "platform": "Windows 10",
      "versions": [
        "86.0"
      ]
    },
    {
      "browser": "Edge",
      "platform": "Windows 11",
      "versions": [
        "83.0"
      ]
    }
  ],
  "run_settings": {
    "cypress_config_file": "cypress.json",
    "build_name": "build-name",
    "parallels": 3,
    "specs": "./cypress/e2e/./*.cy.js",
    "ignore_files": "cypress.config.js",
    "feature_file_suppport": false,
    "network": false,
    "headless": false,
    "reporter_config_file": "",
    "npm_dependencies": {
      "cypress": "9.0.0"
    }
  },
  "tunnel_settings": {
    "tunnel": false,
    "tunnel_name": null
  }
}
```

LAMBDATEST

Automation Daily Test Summary

Hi Team,

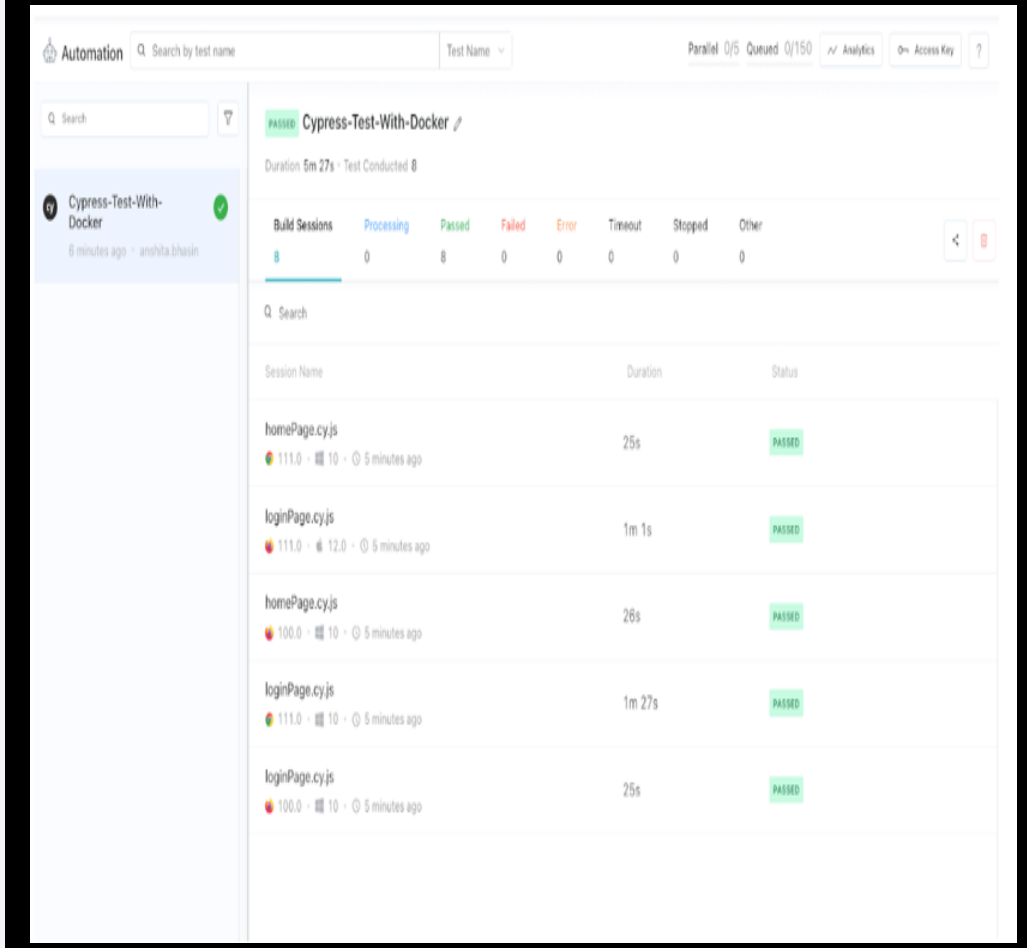
Here is the summary of your team's Builds/Tests Run in the last 24 hours

32	1	35 minutes 31 seconds
Total Tests	Builds	Total time

- 0 Passed
- 12 Failed
- 0 Complete
- 0 Timeout
- 31 Error

SEE ANALYTICS

If you are unable to open the analytics, please copy paste the url below
https://automation.lambdatest.com/analytics



CERTIFICATIONS - ACADEMY



CERTIFIED kubernetes SECURITY SPECIALIST

CERTIFIED kubernetes ADMINISTRATOR

CERTIFIED kubernetes APPLICATION DEVELOPER

CERTIFIED kubernetes APPLICATION DEVELOPER

aws certified Cloud Practitioner

PROFESSIONAL SCRUM Scrum.org PSM I MASTER I

ISTQB Certified Tester Advanced Level Test Automation Engineer

Certified Jenkins Engineer 2019

ISTQB Certified Tester Foundation Level Agile Tester

ORACLE Certified Associate JAVA SE 8 PROGRAMMER

ISTQB Certified Tester Advanced Level Test Manager

PROFESSIONAL SCRUM PRODUCT OWNER I Scrum.org PSPO I CERTIFIED

TRICENTIS Tosca

THE Open GROUP The TOGAF Standard — Version 9.2 UP-TO-DATE KNOWLEDGE

ISTQB Certified Tester Foundation Level

ONELITY

Thank you all!