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Agile & Testing

Integrating Testing Practices in Agile Frameworks

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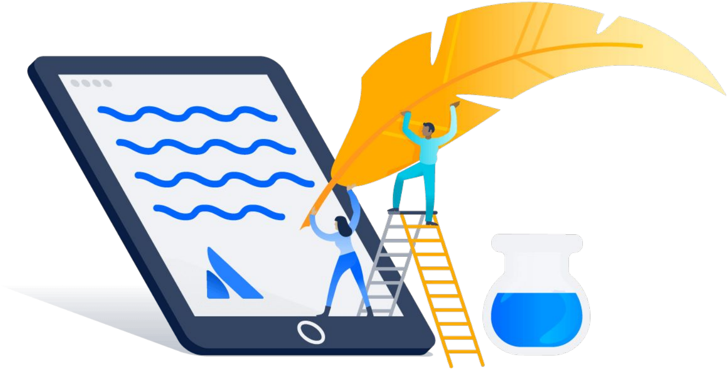
Course Overview

This course will cover a variety of topics, including Agile testing practices, test automation, Acceptance Test-Driven Development (ATDD), Behavior-Driven Development (BDD), and testing in cross-functional Agile teams.

Our goal is to understand how Agile principles and practices can be leveraged to enhance software quality and speed up development cycles.



Introduction to Agile

Agile Principles: Agile is a set of principles that focus on collaboration, adaptability, and iterative development. It prioritizes individuals and interactions over processes and tools, working software over comprehensive documentation, customer collaboration over contract negotiation, and responding to change over following a plan.

Agile Manifesto: These core values guide Agile methodologies, encouraging teams to be flexible and responsive to change. In this context, testing plays a critical role in maintaining software quality throughout development.

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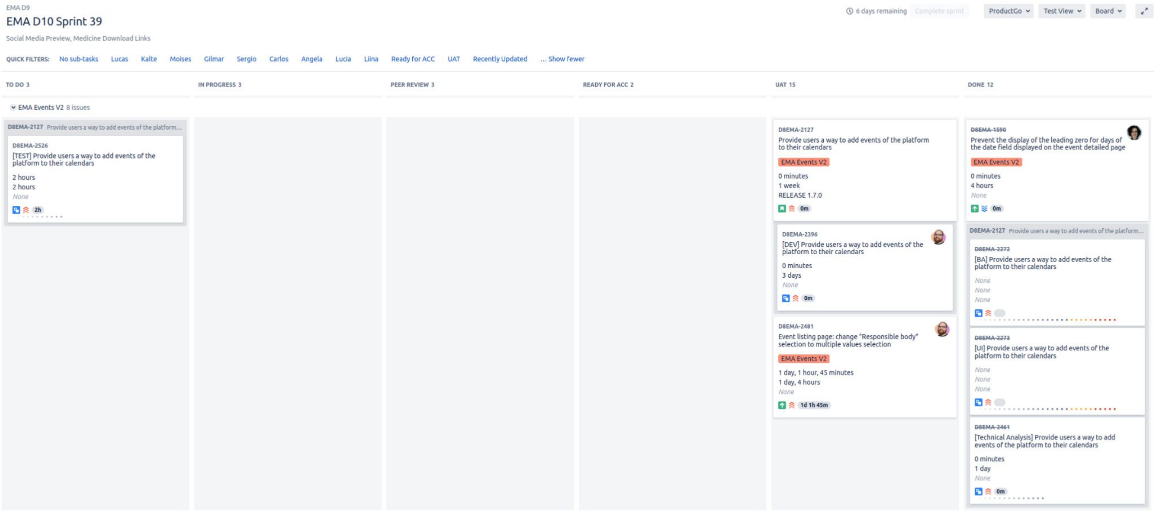
Example agile, case 2

European project: European Medicines Agency
https://www.ema.europa.eu/en/homepage



EMA D9

EMA D10 Sprint 39

Social Media Preview, Medicine Download Links

TO DO 3

EMA Events V2 8 issues

D8EMA-2127 Provide users a way to add events of the platform...

D8EMA-2526
[TEST] Provide users a way to add events of the platform to their calendars
2 hours
2 hours
None
2h

IN PROGRESS 3

PEER REVIEW 3

READY FOR ACC 2

UAT 15

D8EMA-2127
Provide users a way to add events of the platform to their calendars
EMA Events V2
0 minutes
1 week
RELEASE 1.7.0
0m

D8EMA-2396
[DEV] Provide users a way to add events of the platform to their calendars
0 minutes
3 days
None
0m

D8EMA-2481
Event listing page: change "Responsible body" selection to multiple values selection
EMA Events V2
1 day, 1 hour, 45 minutes
1 day, 4 hours
None
1d 1h 45m

DONE 12

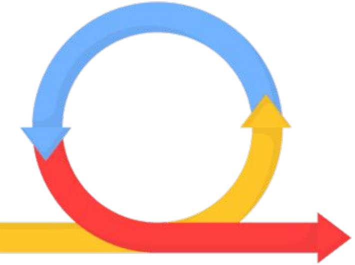
~~D8EMA-1590~~
Prevent the display of the leading zero for days of the date field displayed on the event detailed page
EMA Events V2
0 minutes
4 hours
None
0m

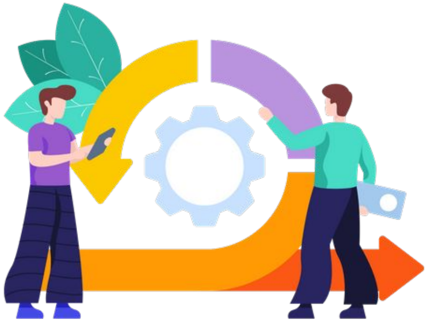
D8EMA-2127 Provide users a way to add events of the platform...

~~D8EMA-2272~~
[BA] Provide users a way to add events of the platform to their calendars
None
None
None

~~D8EMA-2273~~
[UI] Provide users a way to add events of the platform to their calendars
None
None
None

~~D8EMA-2461~~
[Technical Analysis] Provide users a way to add events of the platform to their calendars
0 minutes
1 day
None
0m





Agile Testing Practices

In Agile, testing is not a separate phase at the end of the development cycle; it's an ongoing activity throughout the project. Testing occurs alongside coding, with a focus on rapid feedback and continuous improvement.

Continuous Testing: Agile teams test early and often, using automated tests to ensure that changes don't introduce new defects.

Collaborative Testing: Testers, developers, and other stakeholders work together to design, implement, and validate tests, promoting shared responsibility for quality.

Agile Testing Workflow

Sprint Planning: Testing considerations are included during sprint planning. Testers help identify risks and define test cases for each user story.

Development: During the sprint, developers and testers work closely to ensure that code meets the acceptance criteria. Automated tests are run frequently to catch issues early.

Sprint Review: This is an opportunity to demonstrate the completed work to stakeholders and gather feedback. Testers play a key role in validating that the software meets customer expectations.

Sprint Retrospective: Agile teams reflect on the sprint to identify areas for improvement. This is an opportunity to discuss what went well in terms of testing and what can be improved.

Test Automation in Agile

Importance of Test Automation: Test automation is critical in Agile environments, where frequent iterations and rapid changes are the norm.

Popular Automation Tools: Some popular test automation frameworks include Selenium for web testing, JUnit for Java unit tests, and NUnit for .NET unit tests.

Continuous Integration: Automated tests are typically integrated into a CI system, where tests are run automatically whenever code is checked in.

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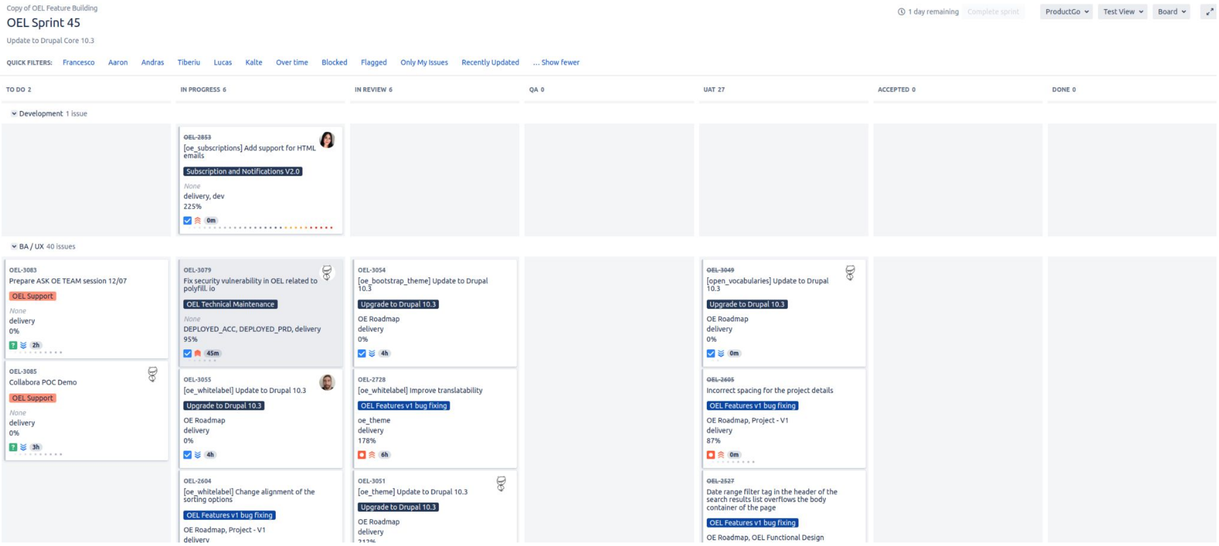
Example agile, case 1

European project: Open Europa Library : Showcase
https://github.com/openeuropa/oe_showcase



Copy of OEL Feature Building

OEL Sprint 45

Update to Drupal Core 10.3

QUICK FILTERS: Francesco Aaron Andras Tiberiu Lucas Kalte Over time Blocked Flagged Only My Issues Recently Updated ... Show fewer

TO DO 2 | IN PROGRESS 6 | IN REVIEW 6 | QA 0 | UAT 27 | ACCEPTED 0 | DONE 0

Development 1 issue

IN PROGRESS:

~~OEL-2853~~
[oe_subscriptions] Add support for HTML emails
Subscription and Notifications V2.0
None
delivery, dev
225%
0m

BA / UX 40 issues

TO DO:

OEL-3083
Prepare ASK OE TEAM session 12/07
OEL Support
None
delivery
0%
2h

OEL-3085
Collabora POC Demo
OEL Support
None
delivery
0%
3h

IN PROGRESS:

OEL-3079
Fix security vulnerability in OEL related to polyfill. io
OEL Technical Maintenance
None
DEPLOYED_ACC, DEPLOYED_PRD, delivery
95%
45m

OEL-3055
[oe_whitelabel] Update to Drupal 10.3
Upgrade to Drupal 10.3
OE Roadmap
delivery
0%
4h

OEL-2604
[oe_whitelabel] Change alignment of the sorting options
OEL Features v1 bug fixing
OE Roadmap, Project - V1
delivery

IN REVIEW:

OEL-3054
[oe_bootstrap_theme] Update to Drupal 10.3
Upgrade to Drupal 10.3
OE Roadmap
delivery
0%
4h

OEL-2728
[oe_whitelabel] Improve translatability
OEL Features v1 bug fixing
oe_theme
delivery
178%
6h

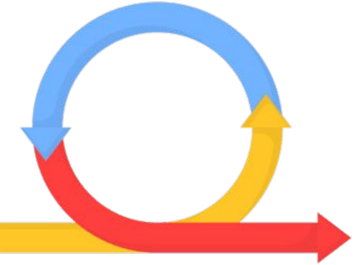
OEL-3051
[oe_theme] Update to Drupal 10.3
Upgrade to Drupal 10.3
OE Roadmap
delivery
212%

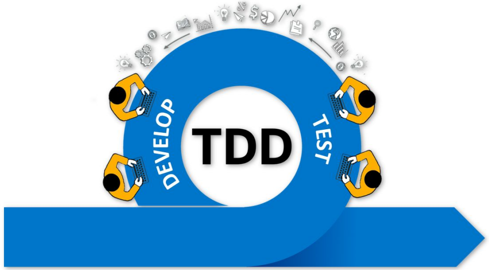
UAT:

~~OEL-3049~~
[open_vocabularies] Update to Drupal 10.3
Upgrade to Drupal 10.3
OE Roadmap
delivery
0%
0m

~~OEL-2605~~
Incorrect spacing for the project details
OEL Features v1 bug fixing
OE Roadmap, Project - V1
delivery
87%
0m

~~OEL-2527~~
Date range filter tag in the header of the search results list overflows the body container of the page
OEL Features v1 bug fixing
OE Roadmap, OEL Functional Design





Acceptance Test-Driven Development (ATDD)

Concept: Acceptance Test-Driven Development (ATDD) is a variant of Test-Driven Development (TDD) that focuses on writing tests before code is implemented.

Writing Tests First: The ATDD approach involves writing failing tests based on requirements, then implementing the code to make the tests pass.

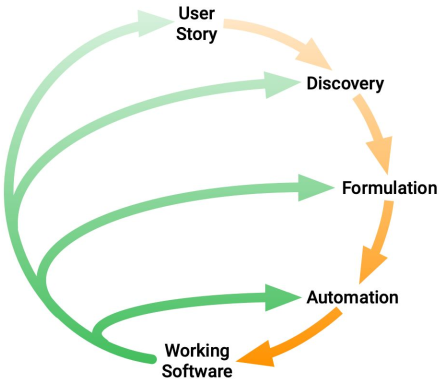
Collaboration with Stakeholders: ATDD encourages collaboration between developers, testers, and business stakeholders.

Behavior-Driven Development (BDD)

Concept: Behavior-Driven Development (BDD) is an approach to software development that emphasizes collaboration and communication among developers, testers, and business stakeholders.

Executable Scenarios: BDD tests are written in a language that is easily understood by non-developers, typically using tools like Cucumber or SpecFlow.

Benefits of BDD: BDD fosters collaboration among stakeholders, helping to ensure that the software meets business requirements.



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Testing in Cross-Functional Agile Teams

Cross-Functional Collaboration: Agile teams are typically cross-functional, including developers, testers, product owners, and other stakeholders.

Roles of Testers: In cross-functional teams, testers play a crucial role in ensuring software quality. They work closely with developers to identify test cases, validate requirements, and provide rapid feedback during development.

Collaborative Practices: Practices like pair programming and pair testing promote collaboration between developers and testers.

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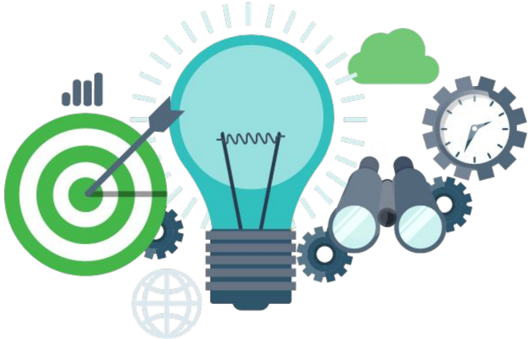


Test Strategy in Agile Projects

Agile Test Strategy: Agile projects require flexible and adaptive test strategies.

Types of Testing: Agile teams typically include a mix of unit testing, integration testing, and end-to-end testing.

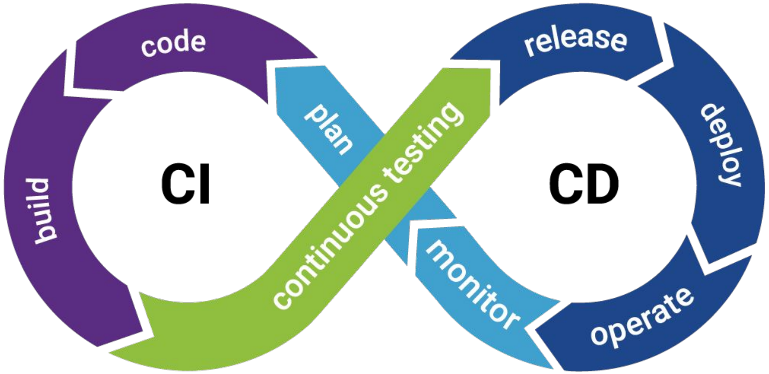
Adapting Test Strategy: Agile teams regularly review and adjust their test strategy to meet evolving project needs.

Continuous Integration and Continuous Delivery (CI/CD)

CI/CD Concepts: Continuous Integration (CI) involves automatically integrating code changes into a shared repository and running tests to ensure stability.

Role of Automated Testing: Automated testing is a fundamental component of CI/CD.

Popular CI/CD Tools: Common CI/CD tools include Jenkins, GitLab CI, and Travis CI.



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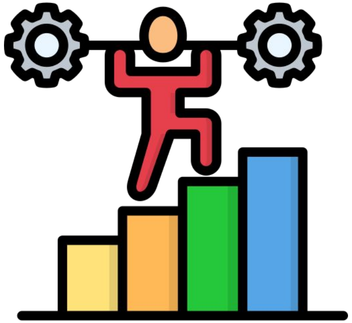
Challenges in Agile Testing

Common Challenges: Agile testing can face various challenges, such as changing requirements, maintaining test automation, and balancing speed with quality.

Addressing Challenges: To address these challenges, Agile teams can employ best practices like frequent communication, regular retrospectives, and test automation frameworks that support rapid changes.



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Feedback and Continuous Improvement

Importance of Feedback: Feedback is a core element of Agile practices.

Sources of Feedback: Feedback comes from various sources, including sprint reviews, retrospectives, code reviews, and customer interactions.

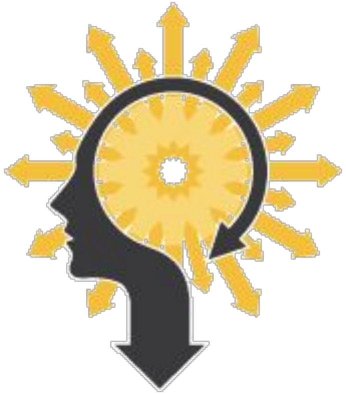
Continuous Improvement: Agile teams use feedback to refine their processes and improve their testing strategies.

Course Summary and Learning Outcomes

Course Summary: Throughout this course, we've explored the integration of testing practices within Agile frameworks.

Learning Outcomes: By the end of this course, you should understand how testing fits into Agile methodologies and how to apply Agile testing practices to your projects.

Questions and Discussions: I invite you to ask any questions you may have or share your thoughts on the topics we've covered.



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