Introduction to Software Testing

QA Automation Certification - Week 1

Agenda

- What is Software Testing?
- Objectives of Software Testing
- Seven Testing Principles
- Software Development Lifecycle Model
- What is Agile Testing?
- Testing Agile Lifecycle
- Differences Agile and Other Methodologies
- Role as QA on Ceremonies

What is Software Testing?

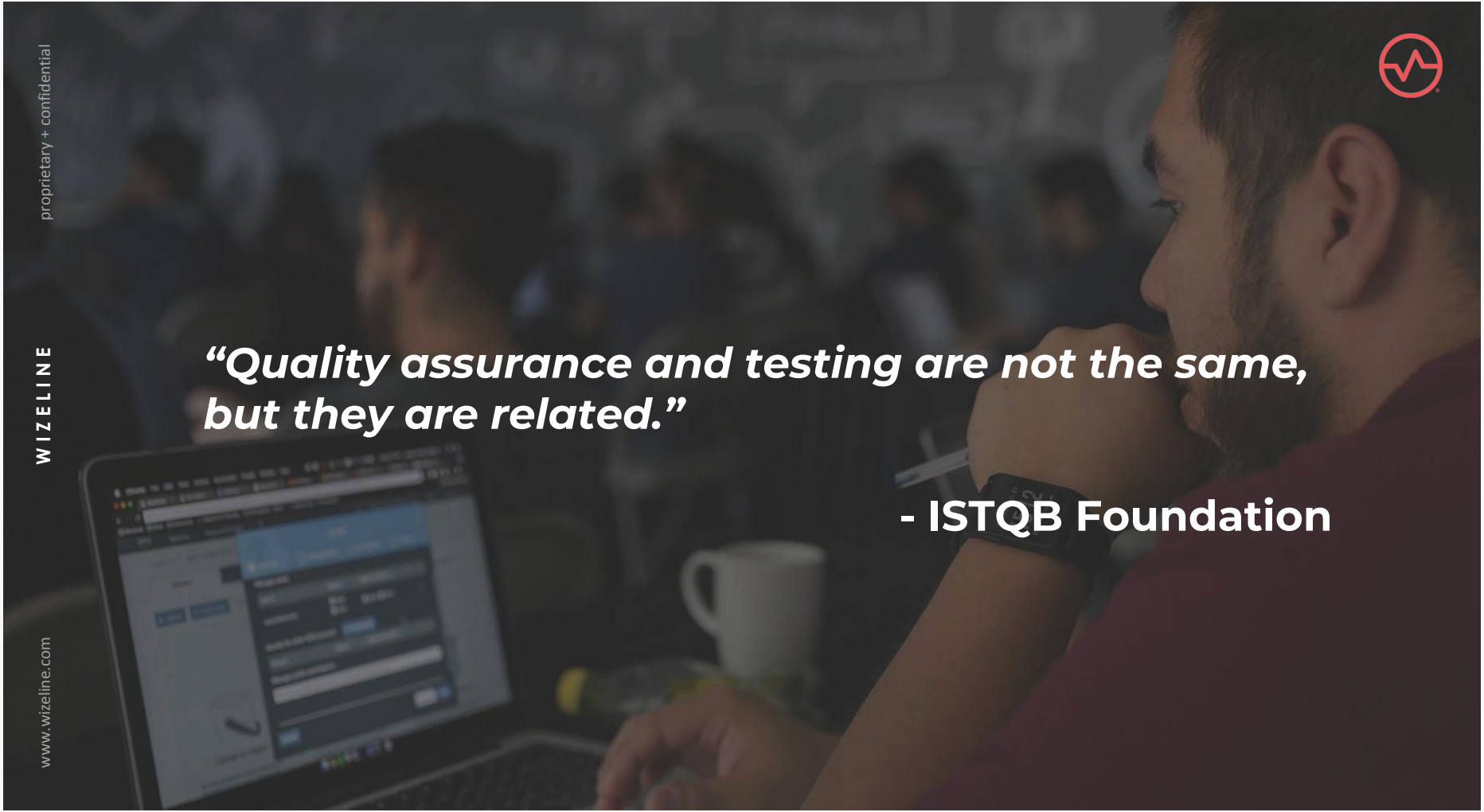
Software testing is a process of execution a program or application with the intent of finding issues or defects, which includes many different activities.

The test process includes activities such as:

- Test planning
- Analyzing
- Designing and implementing tests
- Reporting test progress and results
- Evaluating product's quality

Objectives of Software Testing

- To evaluate work products such as requirements, user stories, design, and code
- To verify whether all specified requirements have been fulfilled
- To validate whether tested product is complete and works as expected
- To build confidence in the level of product's quality
- To prevent and find failures and defects
- To provide enough information to stakeholders allowing them to make informed decisions, especially regarding the level of product's quality
- To reduce the level of risk of inadequate software quality
- To comply with contractual, legal, or regulatory requirements or standards, and to verify the product compliance with such requirements or standards



Seven Testing Principles

1. Testing shows the presence of defects, not their absence
2. Exhaustive testing is impossible
3. Early testing saves time and money
4. Defects cluster together
5. Beware of the pesticide paradox
6. Testing is context dependent
7. Absence-of-errors is a fallacy

Software Development Lifecycle Models

A software development lifecycle model describes the types of activity performed at each stage of a software development project, and how the activities relate to one another logically and chronologically.

Software development lifecycle models can be categorized as follows:

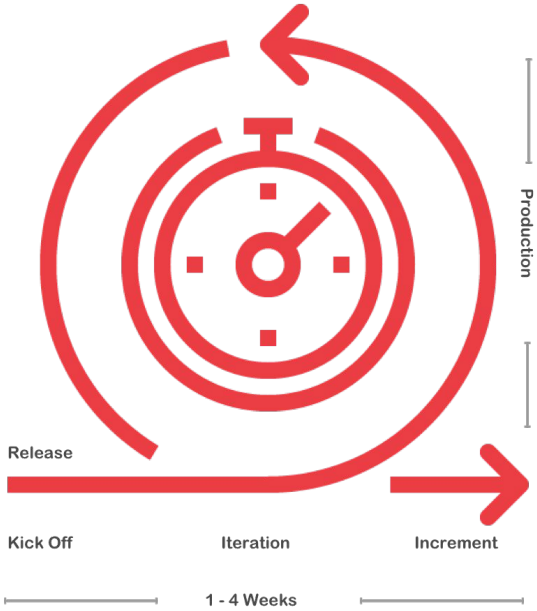
- Sequential development models
- Iterative and incremental development models

Agile vs Waterfall

	Waterfall	Agile
Sequential	X	
Flexible		X
Accommodates change		X
Defined requirements	X	
Deliver quality products	X	X
Continually evolving		X
Rigid process	X	

What is Agile Testing?

Agile Testing is a software testing practice typically implemented to deliver products with the highest quality, faster, and more dynamically in the SDLC.
Agile testing has shorter time frames called **Iterations,** each iteration can last from one to four weeks.



Testing Agile Lifecycle

Kick-Off

Set the initial setup tasks, installation testing tools, and documentation.

Construction Iterations

Set of iterations to build and increment of the solution.

Release

Validate that all work is complete and ensure that the Acceptance Criteria is met.

Production

Deploy all the work done during an increment into production.

What does the QA role Do in Agile?

The QA role in Agile is not only about Testing. It should carry the quality flag of the team, although Quality is owned by everyone.

From Grooming

- Edge cases validations
- Refine user stories
- Make sure what to test so developers can start thinking on validations
- Identify components that could get impacted

From Planning

- Test Case (TC) creation so everyones knows what kind on tests the QA is going to apply
- Collaboration with developers
- Document Test cases in the desired tracking platform for each story and per iteration

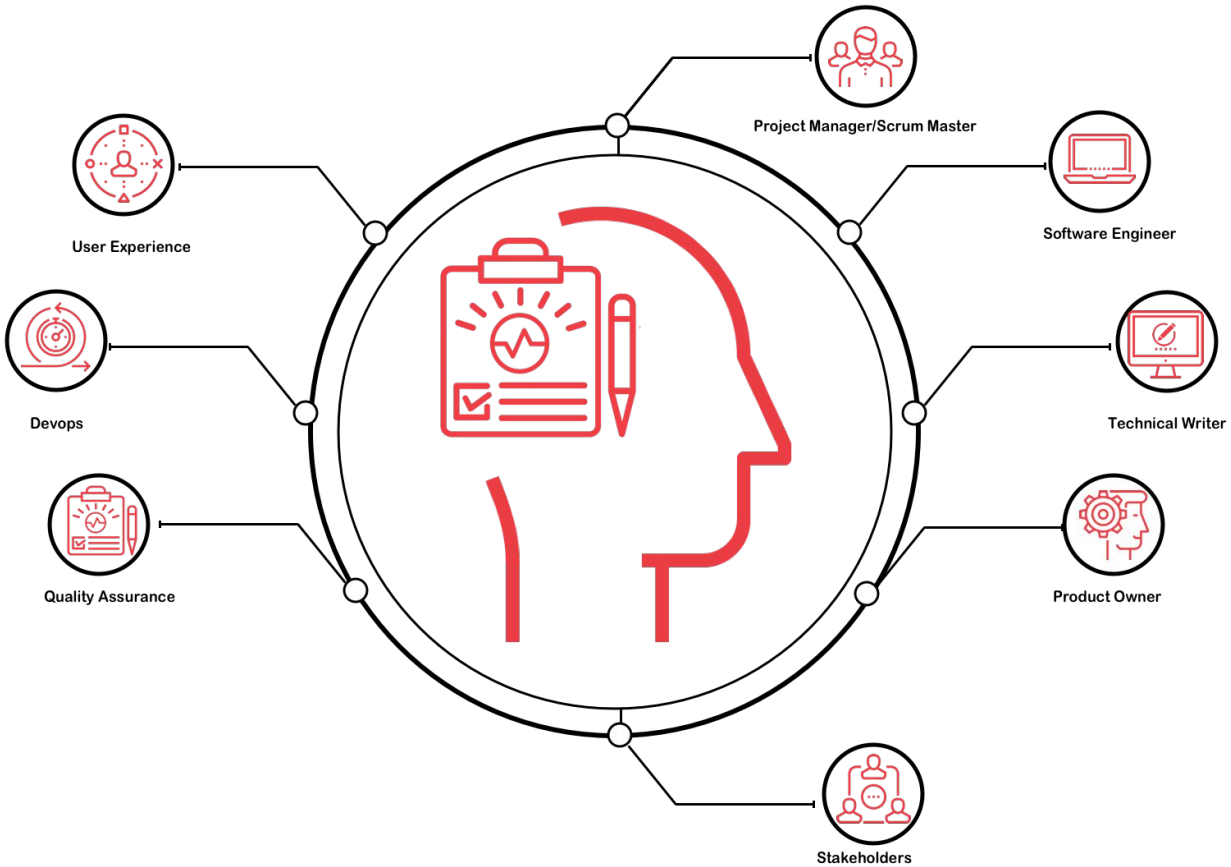
From Sprint

- Run the Manual TCs and Exploratory Testing on each user story
- Bug triage and collaboration with developers
- Keep processes in place for quality

Acceptance and Regression

- Direct collaboration with Product Owner for early feedback
- Automate regression testing

QA is an Integral Part of a Whole Team



Benefits and Challenges of Agile Testing

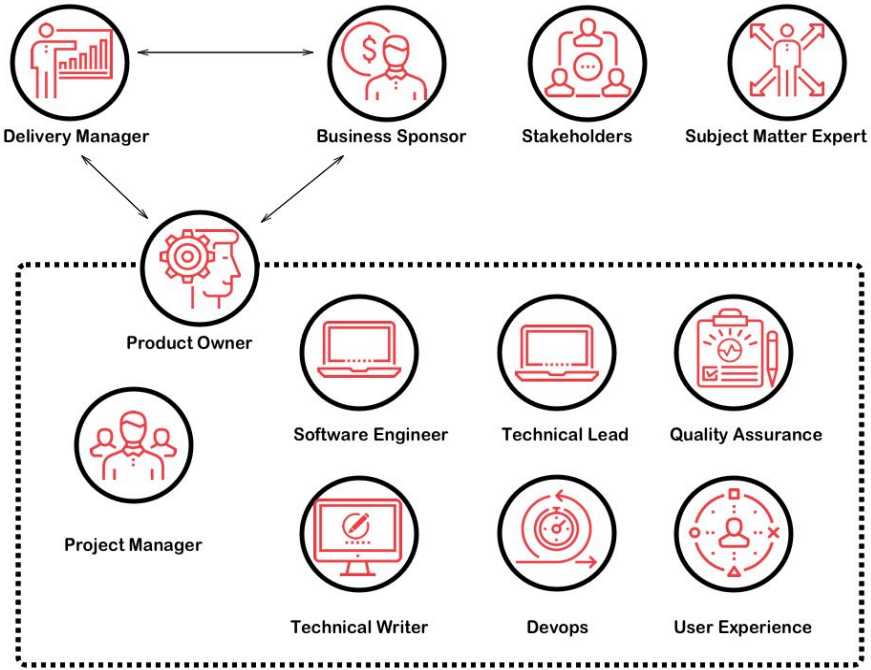
Benefits

- Establishes a built-in quality in the project by defining Acceptance Criteria prior to development
- Aligns tester and developers' expectations about product health and quality by providing early feedback
- Promotes involvement and communication through all roles
- Helps testers identify early dependencies, technical or testing challenges, and blockers
- Allows changes as part of software development
- Encourages a better team collaboration towards a common goal

Challenges

- Delay between writing the user stories and their development
- Poorly defined user stories
- QA activities may get left out when testing is done at the end of the iteration

Agile Methodologies: Scrum & roles at Wizeline



Thank you!

Speaker name: Cristian Ceja
Contact: cristian.ceja@wizeline.com

Bibliography:

https://www.istqb.org/

https://www.istqb.org/downloads/send/5-agile-tester-extension-documents/41-agile-tester-extension-syllabus.html