Introduction to Agile

Lesson 4: Introduction to Agile Testing

Capgemini

Lesson Objectives

- What is Agile Testing?
- Agile Team - Roles and Activities
- Where does Tester fit in Agile Team?
- Agile Team – Tester’s Role and Responsibilities
- Agile Team – Test Manager’s Role and Responsibilities
- How is Agile Testing different?
- Traditional Testing Vs. Agile Testing
- What is Iteration 0?
- User Story Perspective Agile Testing Process
- Tester’s Change in Mind-Set – A key to success

What is an Agile Testing?

- In the modern world of software development, the term “agile” typically refers to any approach to project management that attempts to unite teams around the principles of collaboration, flexibility, simplicity, transparency, and responsiveness to feedback throughout the entire process of developing a new program or product
- Agile testing generally means the practice of testing software for bugs or performance issues within the context of an agile workflow
- Agile development recognizes that testing is not a separate phase, but an integral part of software development, along with coding

What is an Agile Testing? (Cont.)

- Wikipedia defines Agile Software Testing as :

> Agile testing is a software testing practice that follows the principles of agile software development. Agile testing involves all members of a cross-functional agile team, with special expertise contributed by testers, to ensure delivering the business value desired by the customer at frequent intervals, working at a sustainable pace. Specification by example is used to capture examples of desired and undesired behavior and guide coding.

Agile Team - Roles and Activities

- The Customer Team
  - The customer team includes business experts, product owners, domain experts, product managers, business analysts and subject matter experts
  - The customer team also performs the responsibility of writing the User Stories or defining the feature set that essentially the developer team needs to deliver
  - They provide the examples that drive coding in the form of business facing tests
  - The customer team works hand in hand developer team by communicating and collaborating throughout each iteration cycle

Testers are the integral members of the Customer Team helping elicit requirements and examples, helping the customers express their requirements as test.

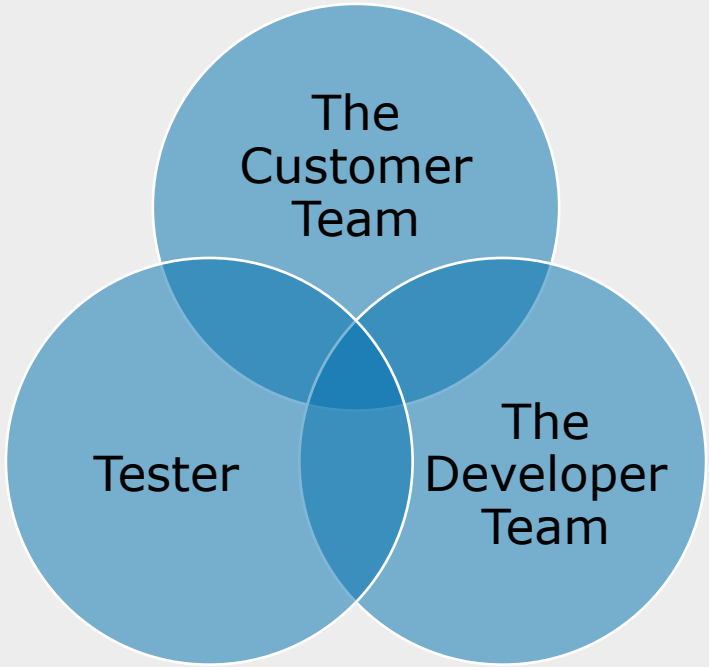
Agile Team - Roles and Activities

- The Developer Team
  - Every team member who is involved in producing application code is a developer and in effect a part of a development team
  - The Agile Principles encourages each team members to take on and handle multiple team responsibilities
  - Programmers, system administrators, architects, database administrators, technical writers and team members who wear more than one of these hats can be a part of the development team, physically or virtually

Testers are also an integral part of the developer team as testing is at the center of agile software development model. Testers advocate for quality on behalf of the customer and assists the development team in delivering the maximum of business value.

Where does Tester fit in Agile Team?

Tester have a foot in each world. They perform the responsibilities of understanding the customer's viewpoint as well as the complexities of the technical implementation.



Agile Team – Test Manager's Role and Responsibilities

- Following are some of the key activities a Test Manager performs within an agile environment
- Their key activities are:
  - Mentoring Testers
  - Staff Management
  - Allocation of testing staff to Agile Teams
  - Tester's skill development planning
  - Knowledge transfer
  - Training and development planning
  - Enabling testing activities
  - Drawing Test Strategy or approach
  - Test Planning

Agile Team – Tester's Role and Responsibilities

- Testers are the important part of an Agile team
  - They start writing test cases even before code starts to be created by reviewing the user stories
  - Every story that reaches the iteration boundary i.e. the end of one iteration and the start of the next) is reviewed and tested
  - Their key responsibilities are:
  - Working with programmers and product owners to ensure that the stories are clearly understood
  - Ensuring that the acceptance tests track the desired functionality of the story
  - Creating the acceptance tests while the code is being created
  - Executing the acceptance tests against the code of the story
  - Ensuring that the test cases are checked into the version control system every day
  - Writing and maintaining automated tests that can be executed, as part of the continuous integration and testing process, against the code every day

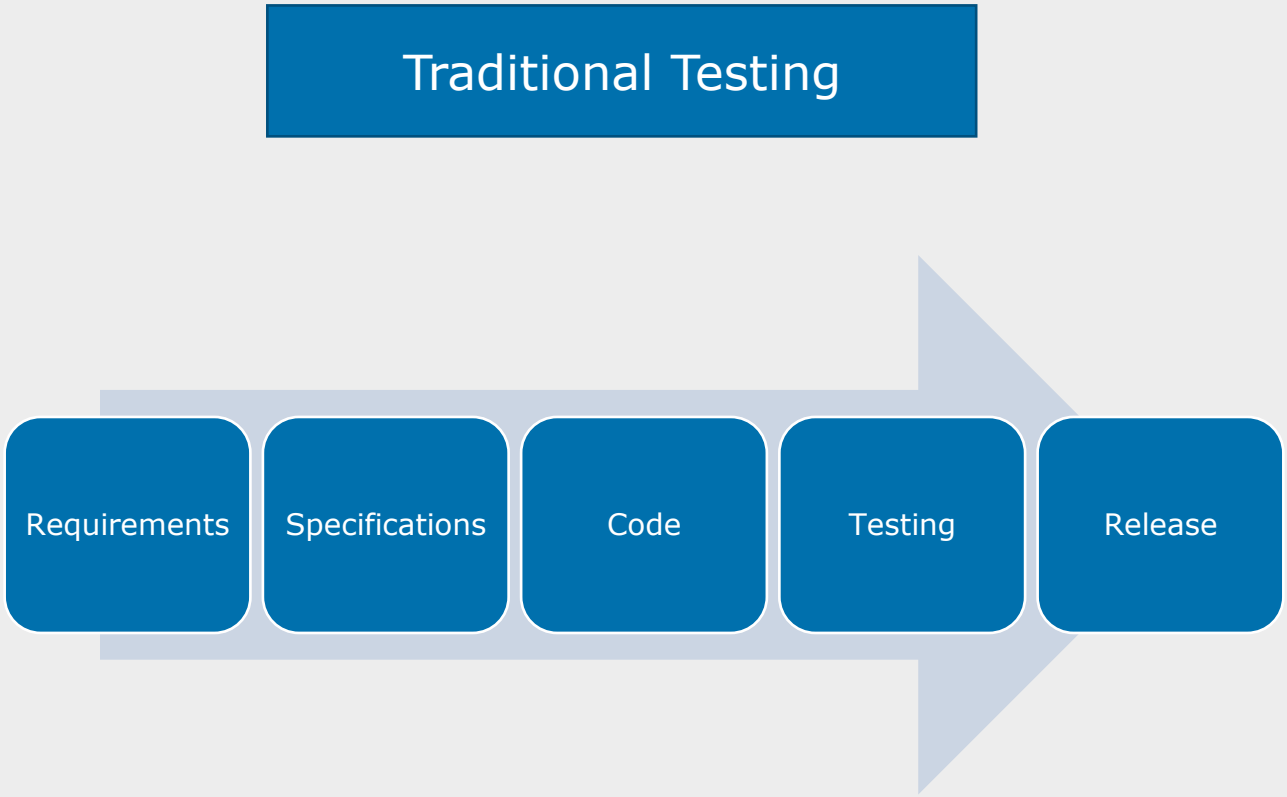
How is Agile Testing different?

- Working on Traditional Teams
  - Testers are not closely working with the development teams and at times they are not even a part of the project from the earliest phases
  - Strict and rigid gated phases of a narrowly defined software development life cycle, starting with requirements definition and usually ending with hurried testing phase and a delayed release
  - Difficult to control how the code was written and whether the code was tested by programmers
  - In spite of much process and discipline, diligently completing one phase before moving on to the next seems difficult
  - Traditional teams are more focused on making it sure that all specified requirements are delivered in the project
  - Testers study the requirements documents to write their test plans and wait for the code to be delivered to them for testing

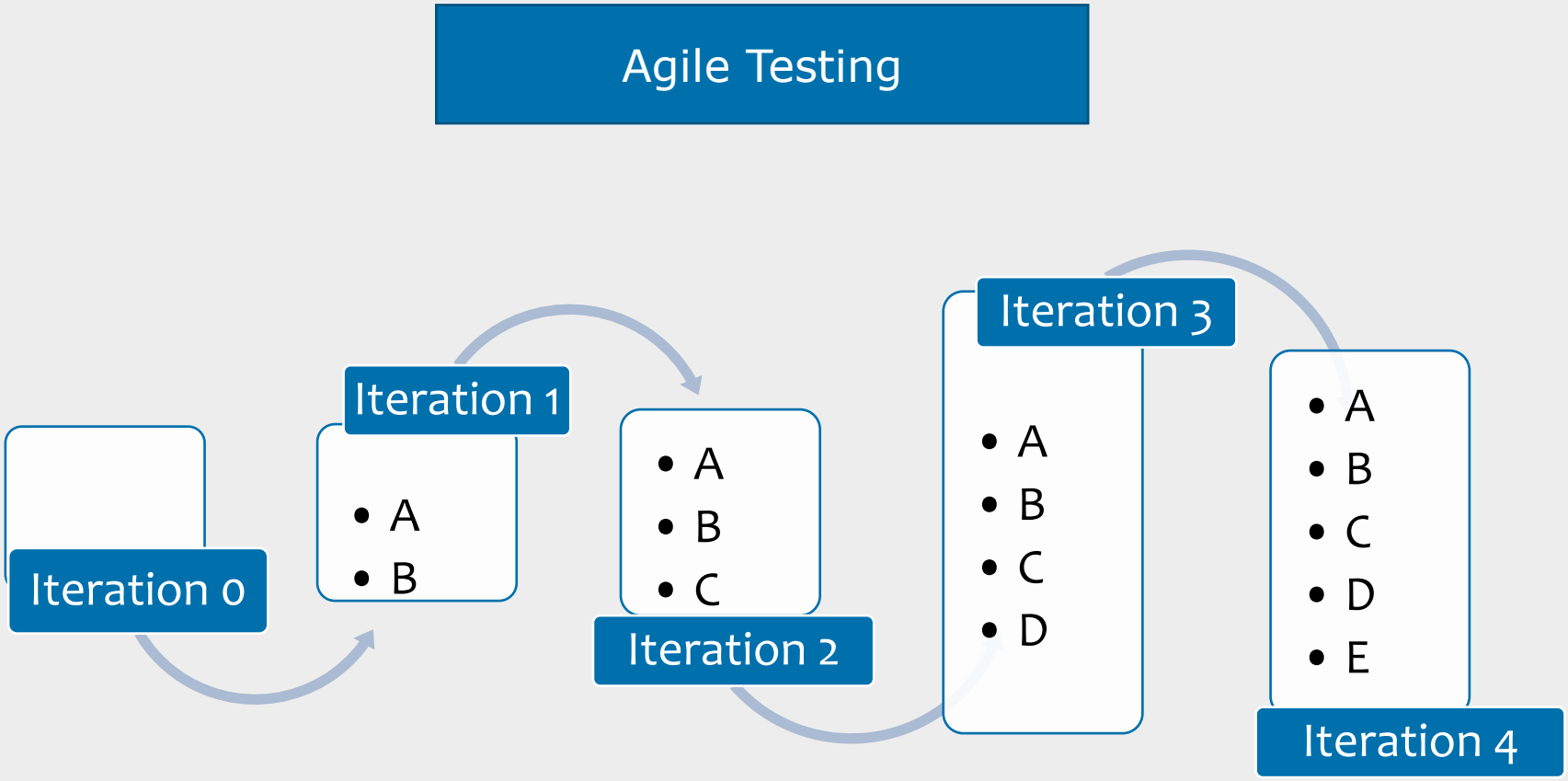
How is Agile Testing different? (Cont.)

- Working on Agile Teams
  - Agile teams work closely with each other and they have a detailed understanding of the requirements
  - They are focused on the value they can deliver, and they might have a great deal of input into prioritizing features
  - In agile teams, testers don’t sit and wait for code, they get up and look for ways to contribute throughout the development life cycle and beyond
  - Agile is iterative and incremental which means that testing happens at the end, right before the release
  - The teams develops the code for iteration’s user story, making sure it works correctly, and then moving on to the next piece of code that needs to be built

Traditional Testing Vs. Agile Testing



Traditional Testing Vs. Agile Testing (Cont.)



What is Iteration 0?

- Iteration Zero is a focused set of activities that a team does to get ready to begin a series of product development iterations
- In Iteration Zero the team explores the product ideas, customer needs, development practices, hardware and software architecture
- The team elaborates the their vision of the product specifications needed and required work to be done
- This activity should be a focused activity and it should not unnecessarily drag on
- Iteration 0 is a team activity and following people necessarily be a part of this activity
  - People with a vision of the product being developed
  - People that understand why features are needed and how they will be used
  - People that will build the system
  - People that will test the system
  - People that fund the system
  - Technology and Domain Experts

What is Iteration 0? (Cont.)

- The factors that can influence whether there should or should not be an Iteration Zero
  - The maturity of the team
  - Whether stakeholders have worked on an Agile project before
  - The quality of the user stories or understanding of the requirements that are being developed
  - The environments being used
  - Whether the environments are already setup
  - The level of experience the organization has with agile methods

User Story Perspective Agile Testing Process

- The test cases are written even before the coding begins that illustrates requirement for each user story rather than creating tests from requirement document
- This is often a combined effort between a domain expert and a tester, analyst or some other development team member
- Ideally based on examples provided by business experts detailed functional test cases are written
- Testers can also conduct manual exploratory testing to find important bugs that define test cases might miss on
- Testers might pair with other developers to automate and execute test cases as coding on each story proceeds
- Automated functional tests are added to the regression test suite
- When test demonstration minimum functionality are complete, the team can consider the story finished

Tester’s Change in Mind-Set – A key to success

- The key attributes for an effective transition from a traditional testing environment to agile testing environment is that the tester needs to be a team player, a willingness to continuously learn, adaptability
- Following are some of the key attributes that makes a tester an Agile Tester:
  - Need for adequate Soft Skills
  - No longer a "them and us" mentality
  - Disappearing comfort zone
  - Defect reporting through communication
  - Focused Testing
  - Readiness for constant interactions with team
  - Self-Organized

Summary

- In this lesson, you have learnt
  - The concepts of Agile Testing
  - The different roles and the activities performed by each role in the Agile Team
  - Where does the Tester fit in the Agile Team?
  - We also elaborated the key differences between the traditional testing and agile testing
  - We also elaborated the agile testing process from the User Story perspective
  - How does a change in tester’s mind-set facilitates a smooth transition from traditional testing to a agile testing?
  - The changed role of a Test Manager