

1. Agile Software Development - 150 mins.

Keywords

Agile Manifesto, Agile software development, incremental development model, iterative development model, software lifecycle, test automation, test basis, test-driven development, test oracle, user story

Learning Objectives for Agile Software Development

1.1 The Fundamentals of Agile Software Development

- FA-1.1.1 (K1) Recall the basic concept of Agile software development based on the Agile Manifesto
- FA-1.1.2 (K2) Understand the advantages of the whole-team approach
- FA-1.1.3 (K2) Understand the benefits of early and frequent feedback

1.2 Aspects of Agile Approaches

- FA-1.2.1 (K1) Recall Agile software development approaches
- FA-1.2.2 (K3) Write testable user stories in collaboration with developers and business representatives
- FA-1.2.3 (K2) Understand how retrospectives can be used as a mechanism for process improvement in Agile projects
- FA-1.2.4 (K2) Understand the use and purpose of continuous integration
- FA-1.2.5 (K1) Know the differences between iteration and release planning, and how a tester adds value in each of these activities

2. Fundamental Agile Testing Principles, Practices, and Processes – 105 mins.

Keywords

build verification test, configuration item, configuration management

Learning Objectives for Fundamental Agile Testing Principles, Practices, and Processes

2.1 The Differences between Testing in Traditional and Agile Approaches

- FA-2.1.1 (K2) Describe the differences between testing activities in Agile projects and non-Agile projects
- FA-2.1.2 (K2) Describe how development and testing activities are integrated in Agile projects
- FA-2.1.3 (K2) Describe the role of independent testing in Agile projects

2.2 Status of Testing in Agile Projects

- FA-2.2.1 (K2) Describe the tools and techniques used to communicate the status of testing in an Agile project, including test progress and product quality
- FA-2.2.2 (K2) Describe the process of evolving tests across multiple iterations and explain why test automation is important to manage regression risk in Agile projects

2.3 Role and Skills of a Tester in an Agile Team

- FA-2.3.1 (K2) Understand the skills (people, domain, and testing) of a tester in an Agile team
- FA-2.3.2 (K2) Understand the role of a tester within an Agile team

3. Agile Testing Methods, Techniques, and Tools – 480 mins.

Keywords

acceptance criteria, exploratory testing, performance testing, product risk, quality risk, regression testing, test approach, test charter, test estimation, test execution automation, test strategy, test-driven development, unit test framework

Learning Objectives for Agile Testing Methods, Techniques, and Tools

3.1 Agile Testing Methods

- FA-3.1.1 (K1) Recall the concepts of test-driven development, acceptance test-driven development, and behavior-driven development
- FA-3.1.2 (K1) Recall the concepts of the test pyramid
- FA-3.1.3 (K2) Summarize the testing quadrants and their relationships with testing levels and testing types
- FA-3.1.4 (K3) For a given Agile project, practice the role of a tester in a Scrum team

3.2 Assessing Quality Risks and Estimating Test Effort

- FA-3.2.1 (K3) Assess quality risks within an Agile project
- FA-3.2.2 (K3) Estimate testing effort based on iteration content and quality risks

3.3 Techniques in Agile Projects

- FA-3.3.1 (K3) Interpret relevant information to support testing activities
- FA-3.3.2 (K2) Explain to business stakeholders how to define testable acceptance criteria
- FA-3.3.3 (K3) Given a user story, write acceptance test-driven development test cases
- FA-3.3.4 (K3) For both functional and non-functional behavior, write test cases using black box test design techniques based on given user stories
- FA-3.3.5 (K3) Perform exploratory testing to support the testing of an Agile project

3.4 Tools in Agile Projects

- FA-3.4.1 (K1) Recall different tools available to testers according to their purpose and to activities in Agile projects