

Application Lifecycle Management Using Visual Studio 2019

Overview

Students will use the Application Lifecycle Management (ALM) tools found in Visual Studio and Team Foundation Server (or Visual Studio Team Services) to plan, track, design, develop, test, and deliver business value in the form of working software.

Target Audience

This course is intended for current software development professionals who are involved in building applications with Visual Studio. Regardless of the student's role, he or she will be able to learn and get hands-on experience with the ALM features in Visual Studio.

Course Objectives

At course completion, attendees will have had exposure to:

- Visual Studio ALM tools and strategy
- Visual Studio editions and capabilities
- Team Foundation Server components/architecture
- Visual Studio Team Services
- Planning and creating team project collections
- Planning and creating team projects
- Selecting an appropriate process
- Managing and securing a team project
- Renaming and deleting team projects
- Creating and querying work items
- Using Agile tools to plan and track work
- Using hierarchical backlogs (epics and features)
- Creating and refining a product backlog
- Planning and tracking work in a sprint
- Obtaining stakeholder feedback
- Conducting and tracking a code review
- Understanding and using version control
- Git and/or TFVC version control systems
- Basic and advanced version control workflows
- Labeling, shelving, branching, and merging
- Writing and executing .NET unit tests
- Using IntelliTest to generate unit tests
- Using Live Unit Testing to only run impacted tests
- Using code analysis and code metrics
- Using code clone analysis to find duplicate code
- Using IntelliTrace to troubleshoot and diagnose
- Using Performance Profiler
- Web-based test case management
- Planning, creating, and executing manual/UI tests
- Planning and running manual tests from the web
- Using coded UI tests to automate UI testing
- Testing web applications
- Load and performance testing

- Configuring and running an automated build
- Installing and configuring a build agent
- Automating the building and testing of a project
- Release Management
- Relevant Visual Studio Marketplace extensions

Course Outline

1 - Introduction to Visual Studio ALM

Application Lifecycle Management overview
Visual Studio ALM tools and features
Team Foundation Server overview
Features and capabilities by edition and role

2 - Team Projects

The Project Administrator role
Team project collections and team projects
Creating a team project
Configuring and managing a team project
Renaming and deleting a team project

3 - Planning and managing work

Selecting a process
Work item types, categories, and hierarchies
Creating and managing work items
Using tags to categorize work items
Querying, charting, and reporting work items
Managing a product backlog and sprint backlog

4 - Version Control

Git version control system overview
TFVC version control system overview
Integration with Visual Studio
Setting up and configuring version control
Basic and advanced workflows
Branching and merging
Managing and resolving conflicts

5 - Collaborating as a Team

- Using the My Work window
- Suspending and resuming work
- Shelving and unshelving changes
- Reviewing code in Visual Studio
- Providing feedback using the Feedback Client

6 - Writing Quality Code

- Identifying and reducing technical debt
- Unit testing and code coverage
- Using IntelliTest to generate unit tests
- Using Live Unit Testing to run impacted tests
- Test-Driven Development (TDD) overview
- Code analysis and code metrics
- Code clone analysis
- Application profiling
- IntelliTrace
- CodeLens

7 - Testing the Application

- Visual Studio test types
- Test case management
- Manual tests
- Coded UI tests
- Web performance tests
- Load tests
- Exploratory tests

8 - Build Automation

- Team Build overview
- Build agents and types of builds
- Creating and managing a build definition
- Monitoring and managing a build
- Running tests as part of the build
- Continuous Integration (CI)

9 - Release Automation

- Release Management overview
- DevOps overview and goals
- Improving delivery frequency
- Configuring environments and release definitions
- Creating and deploying a release
- Continuous Delivery (CD)