DevOpsSchool
Lets Learn, Share & Practice DevOps

Code Quality and Analysis Training

Curriculum 3 Days

Day - 1

- **ct ct**
  - What Is Software Quality?
  - Typical Quality Techniques
  - The Cost of Buggy Software
  - Types of Application
- **e d ct**
  - Coding Standard
  - Analyze Code — Before Code Reviews
  - Follow Code Review Best Practices
  - Refactor Legacy Code (When Necessary)
- **ct**
  - Motivation for Clean-Code
  - Why We Create Technical Debt
  - Good Code vs Bad Code
  - Writing Code for Humans
- **d r d r**
  - Test-Driven Development (TDD)
  - Behaviour-Driven Development (BDD)
  - Junit, TestNG and Cucumber

Day - 2

- **Wct r ct**
  - Introduction
  - What Is Static Code Analysis?
  - Why Use Static Code Analysis?
  - How to Enable Static Code Analysis?
  - The Different Rules Categories
  - Suppressing Rules
  - Control and Data Flow Analysis
  - Demo
- **r ct r ct**
  - CPU Usage
  - Memory Allocation (Pointers, Wild Pointers, Garbage Collectors)
  - Performance Profiling
  - Demo
- **R rı Wctr ct**
  - Indentation, Nesting, Branches
  - Decisions, Conditions
  - Code Complexity, Cyclomatic Complexity
  - Code Style Guide
  - Comment Frequency
  - Line Length, Declarations, Naming Conventions
  - Cohesion, Coupling, Modularity
  - Accessing the Metrics
  - Maintainability Index
  - Cyclomatic Complexity
  - Depth of Inheritance
  - Class Coupling
  - Lines of Code
  - Using Metrics to Spot Problems
- **W**
  - Authentication, Authorization
  - Session Management, Data Handling
  - Error Handling, Logging
  - Encryption

Day - 3

- d e
  - Establishing Review Objectives
  - Source Code Review Approaches
  - Duration, Scope, Lines of Code
  - Code Review Process
  - Infinite Loops, Repeated Code, Unreachable Code, Variable Definitions
- r r ct
  - Continuous Integration in Nutshell
  - Delivery Pipeline
  - Static & Dynamic Analysis in Pipeline
- rı ct ı
  - Beautifier (Coding Standards)
  - Beyond Compare (Comparators)
  - SonarQube, Coverity, Fortify
  - HP Fortify, IBM Security Appscan, OWASP (Security Analysis)
  - VeraCode, Parasoft Insure++ (Dynamic Analysis)
  - Best practices