Course duration

- 1 day

Course Benefits

- Learn how to use Git for efficiently managing version control in software development.
- Learn the importance of version control.
- Learn the purpose of Git.
- Learn how to work with Git and manage workflows.
- Learn how to work with history in workflows.
- Learn advanced techniques.

Course Outline

1. Introduction to Version Control
    1. What is Version Control
    2. "Undo" Capability
    3. Collaboration
    4. Communication and Sharing
    5. Auditing and Tracking
    6. Release Engineering, Maintenance, SDLC
    7. Diagnostics
    8. History of Version Control
    9. Distributed Version Control
    10. Summary
2. Introduction to Git
    1. What is Git
    2. Git's Design Goals
    3. Branching and Merging
    4. Centralized Version Control
    5. Distributed Version Control
    6. Git Basics
    7. Getting Git
    8. Git on the Server
    9. Git Repository Managers
    10. Git on Somebody Else's Server
    11. Summary
3. Basic Git Operations
    1. Using Git
    2. Definitions
    3. Commit

7. Rewriting History
    1. Rewriting History
    2. Squashing Commits
    3. Rebase vs Merge
    4. Amending Commits
    5. Reset
    6. Summary
8. Examining History
    1. Looking at History
    2. Log
    3. Blame
    4. Bisect
    5. Summary
9. Submodules and Subtrees
    1. Submodules
    2. Dependency Management
    3. Git Submodules
    4. Adding a Submodule
    5. .gitmodules
    6. Cloning a Repository with Submodules
    7. Updating Submodules (Initial)
    8. Updating Submodules (Ongoing)
    9. Subtrees
    10. Subtrees – How They Work
    11. Subtrees
    12. Conclusion
10. Configuring Git
    1. Advanced Configuration
    2. Advanced Configuration Variables
    3. Environment Variables
    4. Aliases
    5. Git Hooks
    6. Summary
11. Lab Exercises
    1. Lab 1. Starting Out with Git
    2. Lab 2. Branching, Merging and Working with Remotes
    3. Lab 3. Experimenting with Workflows
    4. Lab 4. Using the GitFlow Workflow
    5. Lab 5. Rebasing and Rewriting History
    6. Lab 6. Git Submodules
    7. Lab 7. (Optional) GitFlow Workflow With the GitFlow Extensions

Class Materials

Each student will receive a comprehensive set of materials, including course notes and all the class examples.

Class Prerequisites

Experience in the following *is required* for this Git class:

- Basic computer (Windows or Mac or Linux) literacy.