Middle Georgia State University

GitLab

- Duration: 3 days
- Language: English
- Delivery Method: In Person
- Prerequisites:
    - Basic Knowledge of Programming Concepts
    - Familiarity with Any Programming Language

Upon the successful completion of the **GitLab** course, you will be able to:

- Navigate GitLab and Manage Repositories
- Implement Basic Git Commands
- Apply Advanced Features for Project Management
- Collaborate Effectively on GitLab

GitLab Course Description

This three-day workshop is designed to provide a comprehensive understanding of GitLab, the world-leading software development platform. It is tailored for developers, IT professionals, and anyone interested in version control and collaboration using GitLab. The course covers the fundamentals of using GitLab, from basic repository management to advanced features like branching, merging, and collaborating on projects.

Topics will include:

- Introduction to GitLab and Basic Repository Management
- Overview of Version Control Systems
- Basic Git Commands and Repository Management
- Branching and Merging in Git
- Conflict Resolution Strategies
- Collaborative Development: Forks, Merge Requests, and Code Reviews
- Automation with GitLab CI/CD and Team Workflows

GitHub Course Outline

Day 1:

GitLab Fundamentals and Basic Repository Management

- Understanding Version Control Systems
- GitLab Overview: Features and Importance
- Setting Up a GitLab Account and Profile
- Exploring the GitLab Interface

Working with Repositories
- Creating and Cloning Repositories
- Basic Git Commands: add, commit, push, pull, status
- Managing Files and Directories
- Introduction to Markdown for GitLab

Hands-on Exercise
- Setting up and managing your first repository

Day 2:

Branching, Merging, and Extended Conflict Resolution
- Morning Session: Advanced Repository Operations
- Branching in GitLab: Concepts and Practices
- **Extended Session on Merging Changes and Conflict Resolution**
  - Detailed strategies and practices for handling merge conflicts
  - Hands-on practice with real-world scenarios
- Tagging and Releases in GitLab

Collaborative Development
- Forking Repositories and Understanding Open Source Contributions
- Managing Merge Requests and Conducting Code Reviews
- Leveraging GitLab Issues for Project Management
- Collaborative Workflows and Best Practices

Hands-on Workshop
- Collaborating on a group project using GitLab

Day 3:

Automation, Security, and Advanced Features
- Morning Session: Automation with GitLab CI/CD
- Introduction to GitLab CI/CD and Workflows
- Setting up Basic CI/CD Pipelines
- Automated Testing and Deployment

Hands-on Lab
- Creating your own CI/CD pipeline

Security and Advanced GitLab Features
- Securing Your GitLab Repositories
- Understanding GitLab Security Features
- Using GitLab Pages for Hosting
- Exploring Advanced GitLab Tools and Integrations
- Hands-on Session: Implementing security measures in your GitLab projects