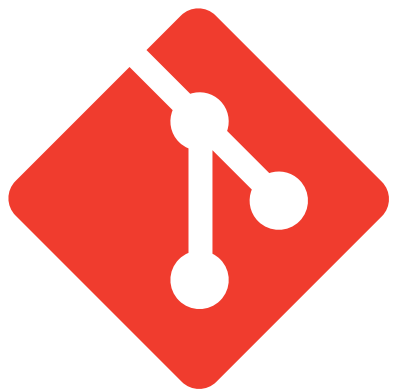
PURDUE
UNIVERSITY

Version Control Workshop: Git and GitHub



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Overview

1. Introduction to Version Control
2. Workflow in Computational Science
3. Learning Git
   - Setting Up Git On Your Machine
   - Basic Git Cycle
   - Git Branches
   - Git Delete Commands
4. Git and GitHub
5. Collaborated Summary

What is Version Control?

Version control is a system that records changes to a file or set of files over time so that you can recall specific versions later.

Why is Version Control Important?

1. Keep Track of Code History
2. Concurrent Teamwork
3. Coordinating Development, Testing, Deployment, etc.
4. Due Diligence Checks
5. Structuring the Way You Develop Code
6. Sharing Code

Everybody should use version control!

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What Options Are Available?

Option #1: Client-Server Version Control Systems

Advantages

1. A Single Admin Keeps Track of the Project
2. There is a Single Master Version of the Code
3. A Central Server Can Be Created for the Project

Disadvantages

1. There Is Only One Admin
2. You Need a Network Connection to Work
3. Operations Can Be Slow (You Need to Access a Central Server)

Examples include CVS

What Options Are Available?

Option #1: Distributed Version Control Systems

Advantages

1. It is Easy to Work Without a Network Connection
2. Multiple Branches Can Provide Multiple Environments
3. You Do Not Need an Internet Connection (Until Committing)

Disadvantages

1. It is a More Sophisticated System
2. People Need to Talk More
3. It Is *Really* Easy To Create Unorganized Code

Examples include Git and Bazaar

Why Git and GitHub?

1. It Has a Great Social Community
2. It Keeps Track of Detailed Metadata (More Than SVN)
3. Branching is Encouraged and Modularizes Development

Thank you for your attention.