CONDUCT VERSION CONTROL

Lecture 1

Git introduction based on version control

Definition of general key terms Version Control

- Version control is a system that allows developers to track and manage changes made to a project's source code over time.
- It helps teams collaborate on code, keep track of changes, and maintain a history of all modifications.

Git

- **Git** is a popular version control system that allows developers **to track** and **manage changes** made to a project's source code over time.
- It was created by Linus Torvalds in 2005 and is widely used in the software development industry.
- **Git** provides features like **branching** and **merging**, which make it easier for developers to work on multiple versions of the code simultaneously.

GitHub

- GitHub is a web-based platform that provides hosting for Git repositories.
- It allows developers to store their Git repositories in the cloud and provides a range of collaboration tools like pull requests, issues, and code reviews.
- GitHub also provides features like project management tools, wikis, and access controls to help teams work more effectively.

Terminal

- A terminal is a text-based interface used to interact with a computer's operating system. It allows users to execute commands and run scripts directly from the command line.
- In the context of version control, the terminal is often used to interact with Git and GitHub repositories using command-line tools like git, git-lfs, and git-annex.

Introduction to version control

- Version control is a system that allows developers to track and manage changes made to a project's source code over time.
- With version control, developers can work on multiple versions of the code simultaneously and can easily revert back to an earlier version if needed.
- It is a critical tool in software development because it helps teams collaborate on code, keep track of changes, and maintain a history of all modifications.
- With version control, developers can work on multiple versions of the code simultaneously, and can easily revert back to an earlier version if needed.
- This makes it easier to experiment with new ideas, develop new features, and fix bugs without fear of losing previous work.

Benefits of using version control system

- **Backup and Disaster Recovery:** Version control systems store all versions of the code, making it easy to recover from accidental deletions, hardware failures, or other disasters.
- **Code Reviews:** Version control systems provide tools for code review, allowing teams to collaborate on code changes, and ensuring that code meets the team's standards for quality and security.

- Continuous Integration and Deployment: Version control systems can be integrated with other tools like continuous integration and deployment systems to automate the software development process and ensure that code changes are tested and deployed quickly and reliably.

Overall, version control is a critical tool for modern software development, enabling teams to work collaboratively, maintain code quality, and deliver high-quality software quickly and efficiently.