

DIFFERENCE BETWEEN GIT AND GITHUB

Git and **GitHub** are related but serve different purposes in the context of version control and collaborative software development:

1. **Git:**

- **Definition:** Git is a distributed version control system designed to track changes in source code during software development.
- **Functionality:**
 - **Local Repository:** Git operates locally on your computer, allowing you to create repositories, track changes (commits), and manage branches without needing a network connection.
 - **Version Control:** It tracks changes made to files over time, facilitating collaboration among multiple developers.
 - **Branching and Merging:** Git allows branching to work on features or fixes independently and merging changes back into the main codebase.
 - **History and Rollback:** Git maintains a complete history of commits, enabling developers to revert to previous states if necessary.
- **Usage:** It is used by developers to manage and collaborate on software projects, ensuring version control and code integrity.

2. **GitHub:**

- **Definition:** GitHub is a web-based platform built around Git that provides hosting for Git repositories.
- **Functionality:**
 - **Remote Hosting:** GitHub hosts Git repositories on its servers, allowing developers to store their code remotely.
 - **Collaboration:** It enhances Git's capabilities by offering features like pull requests, issue tracking, project management tools, and team collaboration.
 - **Code Review:** GitHub facilitates peer code reviews through pull requests, where developers can discuss and review proposed changes before merging them.

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- - **Integration:** GitHub integrates with various third-party tools and services, enhancing its functionality for continuous integration, deployment, and project management.
- **Usage:** It is used by teams and open-source communities to host, manage, and collaborate on software projects, making development more transparent and efficient.

Key Differences:

- **Nature:** Git is a version control system that runs locally on a computer, while GitHub is a web-based platform that provides cloud-based hosting and additional collaboration tools.

- **Functionality:** Git manages source code versioning and history locally, whereas GitHub extends Git's capabilities with remote hosting, collaboration features, and project management tools.
- **Usage:** Git is essential for version control and managing changes locally, while GitHub facilitates collaboration, code hosting, and community interaction around Git repositories.
 - In essence, Git is the core technology for version control, while GitHub provides a platform to host.