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.
     + **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.