Introduction to Git

1) *What is Version Control*

- A version control system is a program or set of programs that tracks changes to a collection of files.
- Another name for a VCS is a software configuration management (SCM) system

2) Distributed version control

- Git is *distributed*, which means that a project's complete history is stored both on the client *and* on the server.

4) Git Terminology

- **Working tree**: The set of nested directories and files that contain the project that's being worked on.
- **Repository (repo)**: The directory, located at the top level of a working tree, where Git keeps all the history and metadata for a project.
- **Hash**: A number produced by a hash function that represents the contents of a file or another object as a fixed number of digits. Git uses hashes that are 160 bits long.
- **Object**: A Git repo contains four types of *objects,* each uniquely identified by an SHA-1 hash. A blob object contains an ordinary file. A *tree* object represents a directory; it contains names, hashes, and permissions.
- **Commit**: C*ommit* means to make a commit object. It means you are committing the changes you have made.
- **Branch**: A branch is a named series of linked commits. The most recent commit on a branch is called the *head*. The default branch, which is created when you initialize a repository, is called main often named master in Git.
- **Remote**: A remote is a named reference to another Git repository. When you create a repo, Git creates a remote named origin that is the default remote for push and pull operations.

6) GitHub

- GitHub is a cloud platform that uses Git as its core technology. GitHub simplifies the process of collaborating on projects and provides a website

➢ Key features provided by GitHub
  - Issues
  - Discussions
  - Pull requests
  - Notifications
  - Labels
  - Actions
  - Forks
  - Projects

7) Resources

https://learn.microsoft.com/en-us/training/modules/intro-to-git/

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