

1. What is Git?

Git is a distributed version control system that tracks changes in any set of computer files, usually used for coordinating work among programmers to develop source code during software development. It tracks changes in the source code and it allows multiple developers to work together.

2. What do you understand by the term 'Version Control System' ?

Version Control Systems are a category of software tools that helps in recording changes made to files by keeping a track of modifications done in the code. It enhances the project development speed by providing efficient collaboration, leverages the productivity, expedites product delivery, reduce possibility of errors and conflicts meanwhile project development through traceability to every small change and also the employees can contribute from anywhere irrespective of the different geographical locations through VCS.

3. What is GitHub?

GitHub is a website and cloud based service that helps developers store and manage their code as well as track and control changes to their code. It also serves as a social networking site where developers can openly network, collaborate, and pitch their work.

4. Mention some popular Git hosting services?

GitLab, Bitbucket, GitHub, SourceForge, AWS Elastic Beanstalk, Perforce, Codebase

5. Different type of Version Control System?

a) Centralized Version Control: With Centralized version control systems, you have a single central copy of your project on a server and commit your changes to this central copy. You pull the files that you need but you never have a full copy of your project locally. Some of the examples are Subversion (SVN) and Perforce.

b) Distributed Version Control : With a distributed version control system you don't rely on a central server to store all the version of a project files, Instead you clone a copy of a repository locally so that you have the full history of the project.

6. What benefits comes with using GIT?

- a) Performance: Git performs very strongly and reliably when compared to other VCS. New code changes can be easily committed, version branches can be effortlessly compared and merged and code can also be optimized to perform better.
- b) Security: It is designed specially to maintain the integrity of the source code. File contents as well as the relationship between file directories, tags, commits, version are secured using an algorithm.
- c) Flexibility: It offers support for several kinds of non linear development workflows and its efficiency to hold both small scale and large scale projects as well as the protocols. It is uniquely designed to support tagging and branching operations and store each and every activity.

- d) Wide Acceptance: It offers the type of performance, functionality, security, and flexibility that most developers and teams need to develop their projects.

7. What is a Git repository?

A Git repository tracks and saves the history of all changes made to the files in a Git project. It saves this data in a directory called `.git` also known as the repository folder. Git uses a version control system to track all changes made to the project and save in the repository.

8. How can you initialize a repository in Git?

To create a new repository you will use the `git init` command. `git init` is a one-time command you are using during the initial setup of a new repo. Execution of this command will create a new `.git` subdirectory in your current working directory. This will create a new main branch.