GIT-HUB HANDS-ON

1. What is the difference between Git and SVN?

GIT	SVN
Git is open source distributed vice control system developed by Linus Torvalds in 2005. It emphasis on speed and data integrity.	Apache Subversion is an open source software version and revision control system under Apache license.
Git has a distributed model.	SVN has a Centralized model.
Git is more difficult to learn. It has more concepts and commands.	SVN is much easier to learn as compared to git.
In git we create only .git directory.	In SVN we create .svn directory in each folder.
Features of GIT: • Distributed System. • Branching. • Compatibility. • Non-linear Development. • Lightweight. • Open source.	Features of SVN: • Directories are versioned • Copying, deleting, and renaming. • Free-form versioned metadata . • Atomic commits. • Branching and tagging. • Merge tracking.

2. Name a few Git commands and explain their usage?

1) Git clone

Git clone is a command for downloading existing source code from a remote repository (like Github, for example).

2) Git branch

Branches are highly important in the git world. By using branches, several developers are able to work in parallel on the same project simultaneously.

3) Git checkout

This is also one of the most used Git commands. To work in a branch, first you need to switch to it. We use git checkout mostly for switching from one branch to another.

4) Git status

The Git status command gives us all the necessary information about the current branch.

5) Git add

When we create, modify or delete a file, these changes will happen in our local and won't be included in the next commit (unless we change the configurations).

6) Git commit

This is maybe the most-used command of Git. Once we reach a certain point in development, we want to save our changes (maybe after a specific task or issue).

7) Git push

After committing your changes, the next thing you want to do is send your changes to the remote server. Git push uploads your commits to the remote repository.

8) Git pull

The git pull command is used to get updates from the remote repo. This command is a combination of git fetch and git merge which means that, when we use git pull, it gets the updates from remote repository (git fetch) and immediately applies the latest changes in your local (git merge).

3. What is the function of ‘git config’?

The git config command is a convenience function that is used to set Git configuration values on a global or local project level. These configuration levels correspond to . gitconfig text files. Executing git config will modify a configuration text file.

4. Explain the different points when a merge can enter a conflicted stage. What is the difference between fork, branch, and clone?

- Merging and conflicts are a common part of the Git experience. Conflicts in other version control tools like SVN can be costly and time-consuming. Git makes merging super easy. Most of the time, Git will figure out how to automatically integrate new changes. Conflicts generally arise when two people have changed the same lines in a file, or if one developer deleted a file while another developer was modifying it. In these cases, Git cannot automatically determine what is correct. Conflicts only affect the developer conducting the merge, the rest of the team is unaware of the conflict. Git will mark the file as being conflicted and halt the merging process. It is then the developers' responsibility to resolve the conflict.
- Forking is a concept while cloning is a process. Forking is just containing a separate copy of the repository and there is no command involved. Cloning is done through the command ‘git clone ‘and it is a process of receiving all the code files to the local machine. Branching and forking provide two ways of diverging from the main code line. Both Mercurial and Git have the concept of branches at the local level. A repository code branch, like a branch of a tree, remains part of the original repository. The code that is branched (main trunk) and the branch know and rely on each other. Like a tree trunk's branch, a code branch knows about the trunk (original code base) it originated from.

5. What is the difference between rebasing and merge in Git?

The rebase moves all of the commits in master onto the tip of feature.The only way to synchronize the two master branches is to merge them back together, resulting in an extra merge commit and two sets of commits that contain the same changes (the original ones, and the ones from your rebased branch).