Assignment

Git

1) Git lifecycle:

* **In Step – 1**, We first clone any of the code residing in the remote repository to make our own local repository.
* **In Step-2** we edit the files that we have cloned in our local repository and make the necessary changes in it.
* **In Step-3** we commit our changes by first adding them to our staging area and committing them with a commit message.
* **In Step – 4 and Step-5** we first check whether there are any of the changes done in the remote repository by some other users and we first pull those changes.
* If there are no changes we directly proceed with **Step – 6** in which we push our changes to the remote repository and we are done with our work.

2) describe the git commands :

1. git init :  
    This command is used to create a local repository.  
    syntax: git init [repository name]
2. git add:  
    This command adds a file to the staging area.  
    Syntax: git add [file] or git add .
3. git commit:  
    This command records or snapshots the file permanently in the version history.  
    Syntax: git commit -m “[ Type in the commit message]”
4. git pull:  
    This command fetches and merges changes on the remote server to your working directory.  
    Syntax: git pull [Repository Link]
5. git push:  
    This command sends the committed changes of master branch to your remote repository.  
    Syntax: git push [variable name] master   
    This command sends the branch commits to your remote repository.  
    Syntax:git push [variable name] [branch]   
    This command pushes all branches to your remote repository.  
    Syntax: git push –all [variable name]
6. git checkout:  
    This command is used to switch from one branch to another.  
    Syntax: git checkout [branch name]
7. git checkout -b:  
    This command creates a new branch and also switches to it.  
    Syntax: git checkout -b [branch name]
8. git checkout -b
9. git log:  
    This command is used to list the version history for the current branch.  
    Syntax: git log
10. git reset:  
     This command unstages the file, but it preserves the file contents.  
     Syntax: git reset [file]
11. git revert:  
     The git revert command is used for undoing changes to a repository's commit history.
12. git merge:  
     This command merges the specified branch’s history into the current branch.  
     Syntax: git merge [branch name]
13. rebase :

The git rebase command is used to merge the history of two branches on a repository.

3) centralized v/s distributed version control:

CENTRALIZED VERSION CONTROL:

1. Centralized version control is the simplest form of version control in which the central repository of the server provides the latest code to the client machines
2. There are no local repositories
3. Works comparatively slower
4. Always require internet connectivity
5. Considers the entire columns for compression
6. Focuses on synchronizing, tracking, and backing up files
7. A failure in the central server terminates all the versions.

DISTRIBUTED VERSION CONTROL

1. Distributed version control is a form of version control where the complete codebase (including its full history) is mirrored on every developer's computer
2. There are local repositories
3. Works faster
4. Developers can work with a local repository without an internet connection
5. Considers columns as well as partial columns
6. Focuses on sharing changes
7. A failure in the main server does not affect the development.