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Assignment 1

1) What are the advantages of using Git?

Allows multiple users/developers to work on a project effectively without disrupting each other’s works. Git has a long-term history tracking, as in the changes can be tracked and errors can also be traced. It also works as a backup. If the user is not satisfied with current version, they can go back to the older version. Git is also fast and cost friendly.

2) What language is used in Git?

Any language the user wishes to use since it is not a programming environment but rather a system for maintaining the source code.

3) What is the meaning of “index” or “Staging Area” in Git?

A staging area is a state that helps you to prepare data for commit. It allows distinguishing between changes in a working directory you want to commit and the changes you want to avoid committing now.

4) What is the process for creating a repository in Git?

On the upper right corner of Github page, click on New repository. Type a name for your repository and an optional description. Choose to make the repository either public or private.

5) What is ‘head’ in Git and how many heads can be created in a repository?

The ‘Head’ is the most recent commit on a branch. There can only be one.

6) Why do we need branching in Git?

It helps organize workflow more efficiently and effectively.

7) Write a way to create a new branch in Git?

git branch <branch\_name>

8) How do you define a ‘conflict’ in Git?

A conflict occurs when two separate branches have made edits to the same line in a file, or when a file has been deleted in one branch but edited in the other.

9) How to resolve a conflict in Git?

Git gives clue to resolving conflicts in its error message. It will state which file the conflict has occurred, so that you know there is a problem with that file. Then it will state ‘fix conflicts and then commit the result’, so if one follows the directions, edit the file, then commit it, that should resolve the issue.

10) What is the function of ‘git config’?

It is a convenience function that is used to set Git configuration values on a global or local project level.

11) What is Git fork?

It is a just copy of a repository.

12) Difference between fork, branch and clone?

When fork a repository, you are simply creating a copy, branch is a separate set of commits with a repo that already exists. On the other hand, when you clone a repository, the repository is copied on to your local machine with the help of Git.

13) What’s the difference between a ”pull request” and a “branch”?

A branch is just a separate version of the code. A pull request is when someone take the repository, makes their own branch, does some changes, then tries to merge that branch in (put their changes in the other person's code repository).

14) What is the difference between “git pull” and “git fetch”?

Git fetch tells the local git to retrieve the latest data information from the original without any file transferring to check for any changes. On the other hand, Git pull does that and brings a copy of those changes from the remote repository.

15) How to revert previous commit in Git?

git revert <unwanted commit>

16) Explain the advantages of Forking Workflow

It gives every developer their own server-side repository. Also, contributions can be integrated without even needing everybody to push to a single central repository.

17) Difference between HEAD, working tree and index, in Git?

A single git repository can track an arbitrary number of branches, but your working tree is associated with just one of them (the "current" or "checked out" branch), and HEAD points to that branch.

18) How to identify if a certain branch has been merged into master?

The -a flag will show both local and remote branches, and the -r flag shows only the remote branches. You can use the git merge-base command to find the latest common commit between the two branches. If that commit is the same as your branch head, then the branch has been completely merged

19) What is the use of a Git clone?

It is used to target an existing repository and create a clone, or copy of the target repository.

20) What is Git stash?

Git stash is a temporary storage.

21) When should I use “git stash”?

When you want to record the current state of the working directory and the index, but want to go back to a clean working directory. The command saves your local modifications away and reverts the working directory to match the HEAD commit.

22) What is Git stash drop?

It is a command used to remove a specific stash from the list of stashes.

23) What is Git stash save?

The git stash command takes your uncommitted changes (both staged and unstaged), saves them away for later use, and then reverts them from your working copy.

24) What README.MD? What is its purpose? What does MD stands for?

MD stands for markdown. README.MD is used to generate the html summary.

25) How to create repository from command prompt?

git init

git add README.md

git commit -m “first commit”

git remote add origin [git@github.com:username/<repositoryname>.git](mailto:git@github.com:username/%3crepositoryname%3e.git)

git push -u origin master

26) What is the function of ‘git checkout’ in Git?

The git checkout command lets you navigate between the branches created by git branch . Checking out a branch updates the files in the working directory to match the version stored in that branch, and it tells Git to record all new commits on that branch.

27) How can you bring a new feature in the main branch?

Start on master.

Create a new feature branch.

Implement your changes on that branch.

Push the feature branch to your remote repo.

Create a pull request for your new changes.

28) What is the function of ‘git rm’?

The git rm command can be used to remove individual files or a collection of files. The primary function of git rm is to remove tracked files from the Git index. Additionally, git rm can be used to remove files from both the staging index and the working directory.

29) What is the function of ‘git stash apply’?

It is a function used to apply your Git Stash to your current working directory.

30) What is the use of ‘git log’?

It shows the running record of commits.

31) What is ‘git add’ used for?

To add the changes that you made to the Github community

32) What is ‘git diff’ used for?

To show the changes one has made.

33) What is ‘git status’ used for?

It gives you the state of the working directory and the staging area. It lets you use which changes have been stages, which haven’t, and which files aren’t being tracked by Git.

34) Can we create multiple branches with one command?

Yes. By using the feature referred to as a worktree, it allows the user to have multiple branches running at the same time.

35) What is the command that is used to delete a branch?

Git branch -d<branch\_name>

36) What is another option for merging in git?

By using another method called Rebase.

37) How to remove a file from git without removing it from your file system?

git rm --cached mylogfile.log

38) Use of “git rebase” instead of “git merge”?

Git merge is much easier and common way to integrate changes. Git base moves a feature branch into a master while Git merge adds a new commit preserving the history at the same time.

39) What is a repository in Git?

It is a file location used to store all your files related to your project.

40) Command used to write a commit message?

Git commit -m ‘type message here’

41) What does commit object contain?

It contains the reference to another tree object and some other information.

42) Write one use-case of Github?

Ideal platform for a team of developers to work together on a project without jeopardizing each other’s work.

43) Name some alternative of Git?

Bitbucket, Gitlab, Mercurial

44) What is a gist in Git?

It a method to share snippets or excerpts of data with other. It can be a string of code, a bash script or some other small piece of data.

45) What is a gist programming?

Is an additional feature added to github to allow the sharing of code snippets, notes, to do lists and more. You can save your Gists as secret or public. Secret Gists are hidden from search engines but visible to anyone you share the url with.

46) Name any two Git repository hosting services which are common?

Gitlab, launchpad