Git Quiz

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Q1 - What is a version control system?
Sol:
Version control, also known as source control, is a method of tracking and managing changes to software code. A version control system is a software tool that helps software teams manage source code changes over time. As development environments accelerate, version control systems help software teams work faster and smarter. They are especially useful for DevOps teams as they help reduce development time and increase deployment success rates.

Q2 - Why did a version control system develop? What were the necessities?
Sol:

Q3 - Define the different types of version control systems.
Sol:
The two most common types are centralized and distributed. A centralized version control system stores all files in a central repository, while a distributed version control system stores files in multiple repositories. Other less common types are lock-based and optimistic.

Distributed :-A distributed version control system (DVCS) allows users to access a repository from multiple locations

Centralized :-A centralized version control system (CVCS) is a type of VCS where all users are working with the same central repository

Q4 - List a few differences between the two version control system types.
Sol:

Q5 - What is Git?
Sol:
Git is a distributed version control system. Track file set changes. It is typically used during software development to coordinate the work of programmers who develop source code together. Its goals include speed, data integrity, and support for distributed, non-linear workflows

Q6 - List a few features of Git.
Sol:

1)Tracks history.
2)Free and open source.
3)Creates backups.
4)Scalable.
5)Supports collaboration.
6)Branching is easier.
7)Distributed development.

Q7 - State any three commands of Git and why we use them.
Sol:
1)git add :- Moves changes from the working directory to the staging area
2)git checkout :-In addition to checking out old commits and old file revisions, git checkout is also the means to navigate existing branches

3)git clone:- Creates a copy of an existing Git repository. Cloning is the most common way for developers to obtain a working copy of a central repository.

Q8 - Is Git the same as Github? Why or Why not?
Sol: No,Git is a tool used to manage multiple versions of source code edits, which are committed to files within Git repositories, while GitHub serves as a place to upload copies of Git repositories. So in a way you can't compare the features of Git and GitHub.

Q9 - What is the command to get the installed version of Git?
Sol:
git -v

Q10.What is the command to add all files and changes of the current folder to the staging environment of the Git repository?
Sol:
The easiest way to add all files to your Git repository is to use the -A option after all the git add commands.
In this case, new (or untracked) files, deleted files, and changed files are added to the Git staging area. increase. They also say they are staged.

Q11. What is the difference between git status and git log commands?
Sol:
The git log command shows committed snapshots. You can list, filter, and search for specific changes in project history. git status lets you see your working directory and staging area, but git log only works for committed history.

Q12 - What is the command to initialize Git on the current repository?
Sol:
Initialize a new repository: git init
Use the git init command to create a new repository. git init is a one-time command used during the initial setup of a new repository. Running this command will create a new .git subdirectory in your current working directory. This will also create a new main branch.

Q13.What are the different states of a file in Git? Explain them along with the associated commands.
Sol:
A Git workflow can be divided into three states.
working directory - change files in working directory
staging area (index) - stage files and add snapshots of them to staging area
git directory (repository) - commit makes files permanent Save it to a snapshot of your git directory. Checkout an existing version, make changes, deploy and commit.

Q14.Git automatically adds new files to the repository and starts tracking them. True or False? Give reasons.
Sol:
False
The git add command adds changes in the working directory to the staging area. Tell Git to include updates to specific files in the next commit.

Q15.What is the command to commit the staged changes for the Git repository?
Sol:
The git commit command is one of Git's most important core features. To select changes to be staged for the next commit, you must

previously use the git add command. Then use git commit to get a snapshot of your staged changes along the timeline of your Git project history.

Q16.What is the command to commit with the message "New email"?
Sol:
You can change the email address associated with your Git commits using the git config command. The new email address you set will appear on all future commits you push to GitHub.com from the command line.

Q17.Draw the full workflow of Git and describe the diagram.
Sol:

Q18.What is a branch in Git?
Sol:
A branch, by itself, represents a line of development and serves as an abstraction for the edit/staging/commit process. You can think of this as a way to request an entirely new working directory, staging area, and project history.

Q19. What is the command to create a new branch named "new-email"?
Sol:

git branch new-email is the command to create new branch in existing repo.

Q20.What is the command to move to the branch named "new-email"?
Sol:
git checkout new-email is the command to move to the branch named "new-email"

Q21. What is the option, when moving to a branch, to create the branch it if it does not exist?
Sol:
An easy way to switch branches in Git is to use the git switch command and specify the name of the branch you want to switch to. The "-c" option (for "create branch") must be specified if the target branch does not exist. Otherwise, you'll get an error message when switching to this branch.

Q22.What does the git init command does?
Sol:
The git init command creates a new Git repository. It can be used to convert an existing non-versioned project to a Git repository, or to initialize a new empty repository.

Q23.What is a fork? How is it different from clone in Git? How do you fork and clone a repository?
Sol:

Public Git repositories can be forked or cloned. Forking creates a completely independent copy of a Git repository. Unlike forks, Git clones create linked copies and keep them in sync with the target repository

Q24. What does ‘push’ mean in Git? Give the command.
Sol:
The git push command is used to upload the contents of your local repository to a remote repository. Pushing transfers commits from your local repository to the remote repository.

Q25. Draw the standard architecture of two types of version control systems. (Hint - server project repo, working directories etc.) Explain the diagrams.