Git and GitHub Test Questions

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1. What is Git and why is it used?

Ans: Git is a software used mainly for version control, that is usually used by developers who work together in a team to develop code for a client without interfering or disrupting each other's work. It is installed on your local systems instead of the cloud which aids in tasks like version tracking, maintaining code roots, branching, etc.

2. Explain the difference between Git pull and Git fetch.

Ans:

Git fetch is a command that does not merge or update the current working directory but rather updates the local copy of the specified remote repository. Additionally, it also downloads objects from another repository.

Git pull is a command that combines the properties of git fetch and git merge. It pulls or fetches the necessary changes from the remote repository and, as opposed to git fetch, merges them into the current branch.

3. How do you revert a commit in Git?

Ans: The git revert command is an undo-like command in which it creates new changes opposite in nature to the commit to be reversed (undo). In this way, the commit is not deleted, rather replaced by a new commit. The git revert command can be implemented using the following syntax:

$ git revert.

4. Describe the Git staging area.

Ans: The git staging area is like a preview before making a commit. When a developer makes changes in his code or repository, he needs to be sure about them before committing them. Hence, we use the **git add** command in which

he can go through the changes before committing them using **git commit.**

5. What is a merge conflict, and how can it be resolved?

Ans: A merge conflict occurs when multiple people are making changes to the same file at the same time. To resolve a merge conflict:

- Manually merge the changes.
- Use git commit to commit the resolved changes.

6. How does Git branching contribute to collaboration?

Ans: Git branching is a way in which team members can perform their tasks in their respective branches without affecting or interrupting each other's work. This leads to better distribution and management which further contributes to increased collaboration. After each member has completed his assigned task, the branches can be merged to get the final output.

7. What is the purpose of Git rebase?

Ans: Git rebase is a method in which all the commits are rearranged into a new base commit. This is done to track the version history of the project. This is achieved by combining all the commits or reordering them.

8. Explain the difference between Git clone and Git fork.

Ans:

- Git clone is a command that creates a local copy of a remote repository on your device. Cloning is performed or preferred when we want to add to a project or make changes in it without affecting the original file.
- Whereas git fork is a command in which we create a copy of a repository owned by someone else on your account. This is a feature which is provided by services like GitHub in which we can update a certain project or contribute to it and then submit a pull request to the owner.

9. How do you delete a branch in Git?

Ans:

- The command to delete a remote branch in git is:

git push origin --delete <branch_name>

- The command to delete a local branch in git is:

git branch -d <branch name>

10. What is a Git hook, and how can it be used?

Ans: A git hook is like a script that git implements before or after the execution of commit messages, push commands, etc. It checks whether the commit or push command is following the required guidelines and policies, and also checks the quality and relevance of the code. If you consider using a git hook for a commit message, there are two types – pre-commit, and post-commit hooks.

11. What's the use of pandas, numpy, seaborn, matplotlib, OS library in python?

Ans: The above libraries are used for data analysis, pattern recognition, EDA (Exploratory Data Analysis), Machine Learning and other such tasks in Python.

Pandas: Used for data manipulation and analysis. It includes the use of DataFrames and Series which help in data storage and analysis.

Numpy: Used mainly for mathematical operations on data.

Seaborn: Data visualization library used to create charts and graphs of various types. Preferred for statistical data analysis.

Matplotlib: Also a data visualization library.

OS: This library aids in file handling tasks such as opening, closing, reading, and writing to files.