

# **Git and GitHub Test**

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### **1. What is Git and why is it used?**

- Git is a distributed version control system that tracks changes in source code during software development. It allows multiple developers to collaborate, manage, and maintain different versions of their code efficiently.

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

- git fetch retrieves updates from a remote repository but does not merge them with your local repository. It updates your remote-tracking branches.
- git pull fetches updates from a remote repository and immediately tries to merge those updates with the local branch.

### **3. How do you revert a commit in Git?**

- You can revert a commit using the `git revert <commit_hash>` command, which creates a new commit that undoes the changes made by the specified commit.
- Alternatively, you can use `git reset --hard <commit_hash>` to reset your branch to a specific commit (use with caution as this can discard commits).

#### **4. Describe the Git staging area.**

- The Git staging area (or index) is an intermediate area where changes are kept before they are committed to the Git repository. It allows you to format and review changes before completing the commit process.

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

- A merge conflict occurs when Git cannot automatically resolve differences between branches. This usually happens when changes are made to the same line of a file in different branches.
- Conflicts can be resolved by manually editing the conflicting files to choose or combine changes and then marking the conflict as resolved using `git add <file>`.

#### **6. How does Git branching contribute to collaboration?**

- Git branching allows multiple developers to work on different features, bug fixes, or experiments simultaneously without interfering with the main codebase. Branches can be merged back into the main branch once the work is completed and reviewed, promoting parallel development and collaboration.

#### **7. What is the purpose of Git rebase?**

- Git rebase is used to integrate changes from one branch into another by moving or combining a sequence of commits to a

new base commit. It is often used to keep a linear project history.

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

- git clone creates a local copy of a repository.
- A fork is a copy of a repository that is hosted on a server (e.g., GitHub) that you can modify independently of the original repository. Cloning is often used after forking a repository to work on it locally.

## **9. How do you delete a branch in Git?**

- To delete a local branch: `git branch -d <branch_name>` (or `-D` to force deletion).
- To delete a remote branch: `git push origin --delete <branch_name>`.

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

- Git hooks are scripts that run automatically on certain Git events, such as commit, push, and merge. They can be used for various tasks like enforcing code standards, running tests, or automating deployment processes.

## Libraries Overview

- **pandas:** Used for data manipulation and analysis, providing data structures like DataFrame for handling tabular data.
- **numpy:** Provides support for large multi-dimensional arrays and matrices, along with a collection of mathematical functions to operate on these arrays.
- **seaborn:** A visualization library based on matplotlib that provides a high-level interface for drawing attractive and informative statistical graphics.
- **matplotlib:** A comprehensive library for creating static, animated, and interactive visualizations in Python.
- **os:** Provides functions to interact with the operating system, allowing for tasks such as file and directory manipulation.

**Take any dataset from Kaggle and handle missing values.  
After removing missing values, from the same dataset:  
draw bar chart, pie chart, line chart, histogram.**

[https://colab.research.google.com/drive/1PqlSV-3M6\\_DPz3lvNIc9zBjVVIKVMFRw#scrollTo=vTwdbKg5OYt-](https://colab.research.google.com/drive/1PqlSV-3M6_DPz3lvNIc9zBjVVIKVMFRw#scrollTo=vTwdbKg5OYt-)