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# 50 Github Interview Q/A



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## What is GitHub?

- GitHub is a web-based platform that uses Git for version control. It allows developers to host, review, manage, and collaborate on code repositories.

## What is Git?

- Git is a distributed version control system that tracks changes in source code during software development.

## What is a repository in GitHub?

- A repository, or repo, is a storage space where your project lives. It contains all project files and the history of changes.

## How do you create a repository on GitHub?

- Go to your GitHub account, click the "New" button, fill out the repository details, and click "Create repository."

## What is a fork in GitHub?

- A fork is a copy of a repository. Forking a repository allows you to freely experiment with changes without affecting the original project.

## What is a pull request?

- A pull request is a method of submitting contributions to a project. It allows others to review your changes before they are merged into the main codebase.

## How do you clone a repository?

- Use the `git clone <repository_url>` command in your terminal or command prompt.

## What is a branch in GitHub?

- A branch is a parallel version of a repository. It allows you to work on different features or bug fixes without affecting the main codebase.

## How do you create a branch?

- Use the `git branch <branch_name>` command and then switch to it using `git checkout <branch_name>`.

## What is the difference between `git fetch` and `git pull`?

- `git fetch` downloads changes from the remote repository but does not apply them. `git pull` fetches and applies changes.

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## What is a commit?

- A commit is a snapshot of your repository at a specific point in time. It represents a single change or a set of changes.

## How do you make a commit?

- Use `git add <files>` to stage your changes and `git commit -m "commit message"` to commit them.

## What is the purpose of the .gitignore file?

- The .gitignore file tells Git which files (or patterns) it should ignore. This is useful for excluding temporary files, build artifacts, etc.

## What is a merge conflict?

- A merge conflict occurs when changes from different branches clash and Git cannot automatically merge them.

## How do you resolve a merge conflict?

- Manually edit the conflicting files to resolve the differences, then add and commit the resolved files.

## What is a remote repository?

- A remote repository is a version of your project that is hosted on the internet or another network.

## How do you add a remote repository?

- Use the `git remote add <name> <url>` command.

## What is git rebase?

- `git rebase` is a command that allows you to integrate changes from one branch into another by reapplying commits on top of the target branch.

## What is a git stash?

- `git stash` temporarily shelves changes you've made to your working directory so you can work on something else and come back to them later.

## How do you apply stashed changes?

- Use `git stash apply` to reapply stashed changes or `git stash pop` to reapply and remove them from the stash.

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## What is a Git tag?

- A Git tag is a reference to a specific commit. It is used to mark important points in the history, such as releases.

## How do you create a tag?

- Use the `git tag <tag_name>` command.

## What is the difference between git merge and git rebase?

- `git merge` combines changes from different branches, creating a merge commit. `git rebase` reapplies commits on top of another base branch, avoiding a merge commit.

## What is the purpose of the git diff command?

- `git diff` shows the changes between commits, commit and working tree, etc.

## What is a GitHub Actions?

- GitHub Actions is a CI/CD platform that allows you to automate workflows for your GitHub projects.

## How do you revert a commit?

- Use the `git revert <commit>` command to create a new commit that undoes the changes from a previous commit.

## What is a git cherry-pick?

- `git cherry-pick` is a command that allows you to apply the changes from a specific commit to your current branch.

## How do you squash commits?

- Squashing commits means combining multiple commits into one. This can be done during a rebase with `git rebase -i`.

## What is a Git hook?

- Git hooks are scripts that Git automatically executes before or after events such as commit, push, etc.

## What is the difference between git reset and git revert?

- `git reset` undoes changes by moving the HEAD and optionally modifying the working directory. `git revert` creates a new commit that reverses changes from a previous commit.

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## How do you set up SSH keys for GitHub?

- Generate an SSH key using `ssh-keygen`, add it to your GitHub account under SSH and GPG keys.

## What is the purpose of a code review?

- Code reviews help ensure code quality, catch bugs, and share knowledge among team members.

## How do you create a GitHub Pages site?

- Create a repository with the name `<username>.github.io` and push an `index.html` file to it. GitHub will host it as a website.

## How do you handle sensitive data in a repository?

- Use environment variables, `.gitignore` to exclude sensitive files, and GitHub secrets for GitHub Actions.

## How do you revert a pushed commit?

- Use `git revert <commit>` to create a new commit that undoes the changes and push it.

## What is a `.git` directory?

- The `.git` directory contains all information about the repository, including configuration, branches, and history.

## How do you view commit history?

- Use `git log` to view the commit history.

## What is continuous integration (CI)?

- CI is a practice where developers frequently integrate code into a shared repository, verifying each integration with automated builds and tests.

## How do you delete a branch?

- Use `git branch -d <branch_name>` to delete a local branch and `git push origin --delete <branch_name>` to delete a remote branch.

## What is the difference between `git pull origin master` and `git fetch origin master`?

- `git fetch origin master` downloads changes from the remote master branch, while `git pull origin master` downloads and merges changes.

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## What is a distributed version control system (DVCS)?

- A DVCS allows all users to have a complete copy of the repository, including history, enabling offline work and more robust collaboration.

## What are Git submodules?

- Git submodules allow you to keep a Git repository as a subdirectory of another Git repository.

## What is Git Flow?

- Git Flow is a branching model for Git, introduced by Vincent Driessen, that defines a strict branching model to help manage releases.

## How do you handle large files in GitHub?

- Use Git Large File Storage (LFS) to manage large files.

## What is a Git blame?

- `git blame` shows the last modification of each line in a file along with the author.

## How do you undo the last commit?

- Use `git reset --soft HEAD~1` to undo the last commit but keep changes staged, or `git reset --hard HEAD~1` to undo the last commit and discard changes.

## What is a Git workflow?

- A Git workflow is a branching model that defines how branches are created, used, and merged, e.g., feature branching, Git Flow, GitHub Flow.

## What is a rebase conflict?

- A rebase conflict occurs when changes cannot be automatically applied during a rebase due to conflicting changes in the target branch.

## How do you resolve a rebase conflict?

- Manually resolve the conflicting files, then use `git add <file>` and `git rebase --continue`.

## What is a detached HEAD state?

- A detached HEAD state occurs when you are not on any branch, often after checking out a specific commit. You can create a new branch from this state if needed.