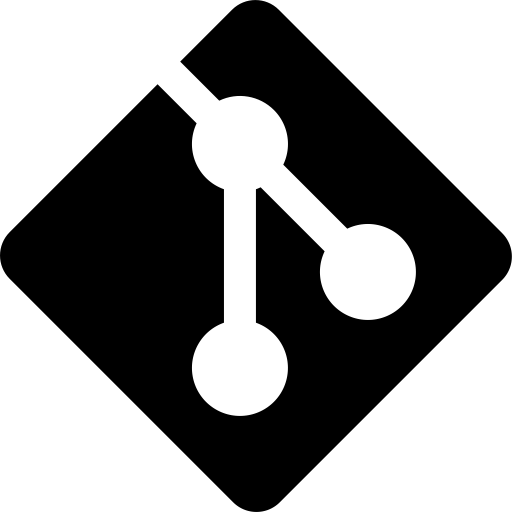
C O N S U L T A D D

GITHUB ASSIGNMENT

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1. What are the advantages of using Git?

* Distributed model: You can let others see only what is necessary. Other advantage is speed since most everything is local and possibility of working offline.
* Branching and merging are easy.
* Workflow is flexible.
* Data integrity is assured.
* Code collaboration with peers.
* Able to work on someone else’s open source code.

1. What language is used in Git?

* One can use any language since Git isn’t a programming environment

1. What is the meaning of “Index” or “Staging Area” in Git?

* The index or staging area is ‘holding area’ for changes that will be committed when you next do git commit. It allows us to control what parts of the working tree go into the repository on the next “commit” operation.

1. What is the process for creating a repository in Git?

* Step1: Create a GitHub account
* step2: login to your account and click on + icon in the right-side pane of your window
* step3: and then select create new repository in the menu hence your new repository is created

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

* HEAD is a reference to the last commit in the currently check-out branch
* A repository can contain any number of heads

1. Why do we need branching in Git?

* Git branches are effectively a pointer to a snapshot of your changes.
* Branches serve as an abstraction for the edit/stage/commit process.

1. Write a way to create a new branch in Git?

* The git branch command can be used to create a new branch.
* $ git branch <new-branch>

1. How do you define a ‘conflict’ in Git?

* A conflict arises 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

1. How to resolve a conflict in Git?

* The most direct way to resolve a merge conflict is to edit the conflicted file.
* Also there are different types of commands in git that can be used to resolve various conflicts

1. What is the function of ‘git config’?

* We can query/set/replace/unset options with this command

1. What is Git fork?

* Git Fork means creating a copy of the main repository of a project source code to our own GitHub profile. Here we can experiment whatever we like without affecting the main source of that project.

1. Difference between fork, branch and clone?

* Forking is a concept while cloning is a process.
* Forking is just containing a separate copy of the repository and there is no command involved. Cloning is done through the command ‘**git clone**‘and it is a process of receiving all the code files to the local machine.
* Changes made to the forked repository can be merged with the original repository via a **pull request**. On the other hand, changes made on the local machine (cloned repository) can be pushed to the upstream repository directly.

1. 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).

1. What is the difference between "git pull" and "git fetch"?

* When you use pull, Git tries to automatically do your work for you. It is context sensitive, so Git will merge any pulled commits into the branch you are currently working in. pull automatically merges the commits without letting you review them first. If you don’t closely manage your branches, you may run into frequent conflicts.
* When you fetch, Git gathers any commits from the target branch that do not exist in your current branch and stores them in your local repository. However, it does not merge them with your current branch. This is particularly useful if you need to keep your repository up to date, but are working on something that might break if you update your files. To integrate the commits into your master branch, you use merge.

1. How to revert previous commit in Git?

* Using the --**hard** option, everything is reverted to the specified commit. This includes the commit history reference pointers, the staging index, and working directory.
* To avoid losing any working changes, you can use the**stash** and **stash pop** commands. The stash command saves your working changes (without any commits or changes to the tree), and then stash pop brings them back.

1. Explain the advantages of Forking Workflow

* Advantage of the Forking Workflow is that contributions can be integrated without even needing everybody to push to a single central repository that leads to clean project history. This allows the maintainer to accept commits from any developer without giving them write access to the official codebase.

1. Difference between HEAD, working tree and index, in Git?

* HEAD is the commit at the top of the current branch. If you've just checked out the branch, i.e. have no modified files, then its content matches the working tree. As soon as you modify anything, it no longer matches.
* A working tree are nothing but the files that you are currently working on.
* The index is where you place files you want commit to the git repository. The index is a staging area where the new commit is prepared.

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

* git branch **--merged master** will list branches merged into master.
* You can use the [git **merge-base**](https://git-scm.com/docs/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.

1. What is the use of a Git clone?

* This copy treats the original at /path/to/repository as the "origin" repository, from which you can pull changes and to which you can push changes.

1. What is Git stash?

* **Git stash** is a temporary storage.Git Stash temporarily shelves (or stashes) changes you've made to your working copy so you can work on something else, and then come back and re-apply them later.

1. When should I use "git stash"?

* Stashing is used to switch contexts when working with a Git repository and save your code for a later date. For instance, if you’re working on a big project, you may decide to stop working on a feature and prioritize fixing a bug in the same file. Before you start fixing the bug, you’ll want to save your existing code for later.

1. What is Git stash drop?

* If you no longer need a stash, you can delete it with

1. 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.

1. What README.MD ? What is its purpose? What does MD stands for?

* It describes the purpose of the repository and gives hints on what the code does, how to compile/use it, etc. The. md extension stands for Markdown, which is a type of file that is both readable in plain text but can also be easily converted to HTML to display special elements.

1. How to create repository from command prompt?
2. What is the function of ‘git checkout’ in Git?

* Create a new branch and switch
* Switch between branches

1. How can you bring a new feature in the main branch?

* $git branch <branch\_name>

1. 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

1. What is the function of ‘git stash apply’?

* In order to apply your Git stash to your current working directory, use the “git stash apply” command and specify the stash you want to apply.

1. What is the use of ‘git log’?

* The Git Log tool allows you to view information about previous commits that have occurred in a project. The simplest version of the log command shows the commits that lead up to the state of the currently checked out branch.

1. What is ‘git add’ is used for?

* The git add command adds a change in the working directory to the staging area. It tells Git that you want to include updates to a file in the next commit. However, git add doesn't really affect the repository in any significant way—changes are not actually recorded until you run git commit

1. What is 'git diff' is used for?

* git diff is a multi-use Git command that when executed runs a diff function on Git data sources. These data sources can be commits, branches, files and more.The git diff command is often used along with git status and git log to analyze the current state of a Git repo.

1. What is ‘git status’ is used for?

* The git status command displays the state of the working directory and the staging area.

1. Can we create multiple branch with one command?

* Yes, Git offers a feature referred to as a worktree, and what it does is allow you to have multiple branches running at the same time. It does this by creating a new directory for you with a copy of your git repository that is synced between the two directories where they are stored

1. what is the command that is used to delete a branch?

* Deleting local branch:-$git branch-d feature/login
* Deleting remote branch:-$git push origin –-delete feature /login

1. What is another option for merging in git?

* By using git rebase

1. How to remove a file from git without removing it from your file system?

* For single file use this command: git rm --cached #files
* For single directory: git rm  --rf #files

1. Use of "git rebase" instead of "git merge"?

* rebasing *re-writes* the project history by creating brand new commits for each commit in the original branch.
* The major benefit of rebasing is that you get a much cleaner project history.

1. What is a repository in Git?

* Git stores information in a data structure called a repository.

1. Command used to write a commit message?

* git commit -m "commit message"( Passing the -m option will forgo the text editor prompt in-favor of an inline message.)
* git commit -am "commit message"(  This combination immediately creates a commit of all the staged changes and takes an inline commit message)

1. What does commit object contain?

* commit is a hashed object, stored in the same mechanisms as blobs and trees are. A commit is a hash of the commit message, with an identifying type and length (as for blobs and trees).

1. Write one use-case of Github?

* To efficiently serve three audiences—customers, riders, and restaurants—and operate its platform across multiple time zones, Deliveroo has used GitHub since 2017. “We heavily leverage tech and software engineering principles to run the business,” said Senior Software Engineer Ben Cordero. “From a high-level, platform point of view, using GitHub Enterprise Cloud means we don’t have to run any of that infrastructure ourselves, and it reduces the administrative costs and allows us to spend more time developing.” Since most of Deliveroo’s engineers are already proficient with GitHub’s workflows, “it also reduces onboarding costs because we don’t spend extra time training the next new person.”

Deliveroo uses a public instance of Enterprise Cloud, and “the primary reason is simplicity,” explained Cordero. “We don’t need to spin up our own instances to run GitHub Enterprise products. The public instance already has all the [security features we need](https://github.com/security).” That includes single sign-on, the ability to control group access, and protected branches that define who can do what, and when. “Not having to own, manage, and keep a system alive is an operational load off our minds,” said Cordero.

1. Name some alternative of Git?

* SVN(Subversion)
* Bitbucket
* Perforce
* Gitlab
* Git flow

1. What is a gist in Git?

* A gist can be a string of code, a bash script or some other small piece of data. These bits of information are hosted by GitHub as a repository. Using gist has all the benefits of utilizing a GitHub repository, and provides a more lightweight way of utilizing GitHub's versioning features.

1. What is a gist programming?

* Gist is an easy method to share snippets or excerpts of data with others. A gist can be a string of code, a bash script or some other small piece of data. These bits of information are hosted by GitHub as a repository. ... Not only are gists free to create and store on GitHub, but they are also easy to create

1. Name any two Git repository hosting services which are common?

* Amazon AWS CodeCommit
* Assembla

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NOTE

The last date for submission of assignments is TOMORROW.

A P P R E C I A T E D