5-Days Workshop on Git and GitHub

Day 3 – Working With Remote

22th February 2022

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For chat

- Goto link https://stin.to/67o1o.

What will we do today?

- Introduction to GitHub
- Terminologies in GitHub
- Setting up GitHub
- Basic remote commands
- Remote workflow
- **Lab: Making some PRs**

Introduction to GitHub

What is GitHub?

- Till date, we have all the changes made saved in our local system only.
- To host our repository online, we need a server or hosting platform.
- GitHub is a repository hosting platform that uses Git in its core.

Features of GitHub

- Easier contribution or maintenance of Open-source projects,
- Easier documentation,
- Platform to showcase your code,
- Integration options,
- Backup option.

Key features of GitHub

- Issues,
- Discussions,
- Pull requests,
- Notifications,
- Labels,
- Actions,
- Forks,
- Projects, etc.

Let's start using GitHub

Creating a new repository

- To create a new repo, GoTo GitHub and click the **+** icon near to your avatar and choose **New repository** option from the dropdown.
- Then, complete all the details.

- Yahoo! You have created your own repository.

Cloning a Git Repository

- To clone a repository means to download the copy of all the content inside a repository placed in a server.
- It clones entire repository including all commit history.

Cloning a Git Repository

- You can use the command, `git clone <Repo_Link_Here>` to clone the repository.
- This creates a new folder with name same as your repository.
- If you want to clone the repository inside a folder without creating a new folder, you can use the command `git clone <Repo_Link_here> .`
- You can use the command `git clone <REPO LINK HERE> <FOLDER>`, to clone a repository by making a new folde named `<FOLDER>`.
- To clone a repo with some commit history you can use command, `git clone <REPO LINK HERE> --depth=<Number of Commits>`.

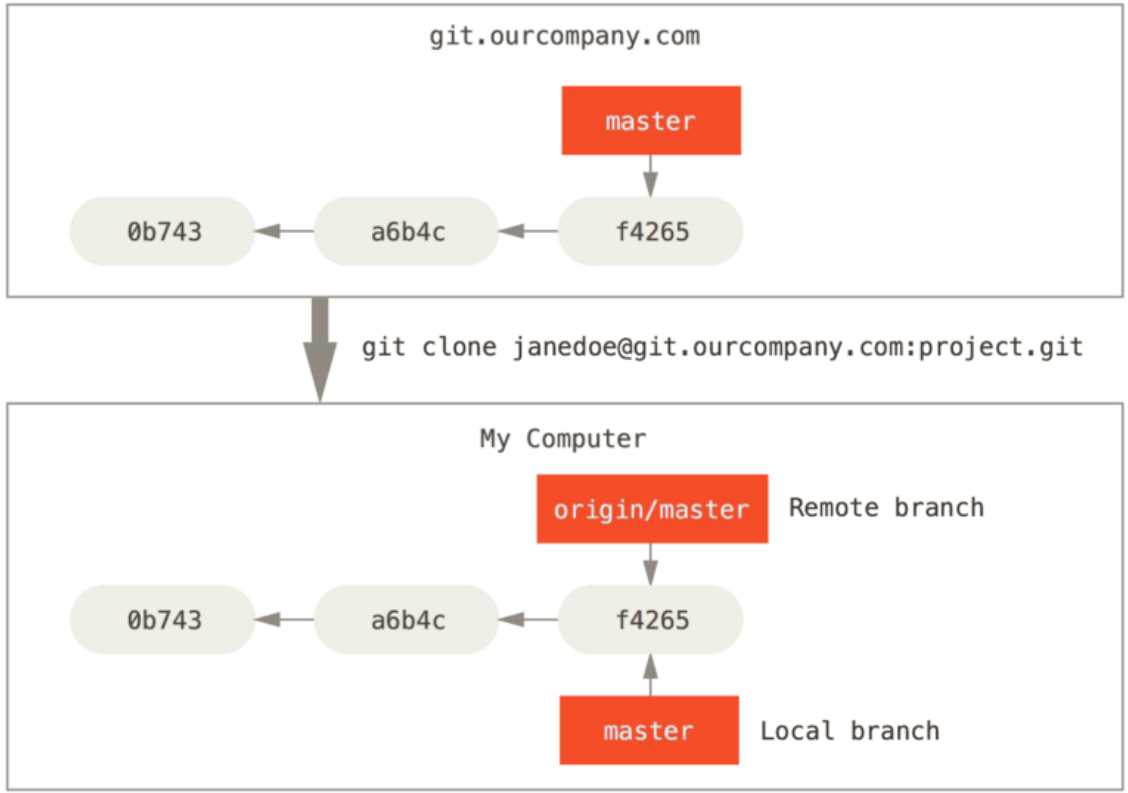
Remote

- Remote simply refers to the repository in the server.
- By default the name of remote is ***origin***.
- To show all the remote, we use command `git remote`.
- To show all the remote in verbose manner, we use command `git remote -v`.

Remote-Tracking Branches

- Remote is tracked using branches and such branches are called ***tracking branches***.
- The tracking branches are references to the remote branches.
- And they cannot be moved locally without communicating to the remote.
- It can be simply referred as a bookmark that is used to tell in which page you are in or in which commit your remote is in.
- The names of remote tracking branches are <remote>/<branches>.
- Example; if we want to communicate to a remote branch like master we check the origin/master branch.

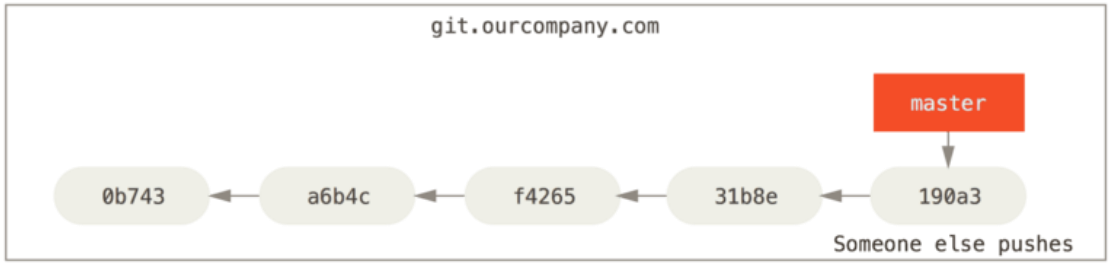
How clone works?

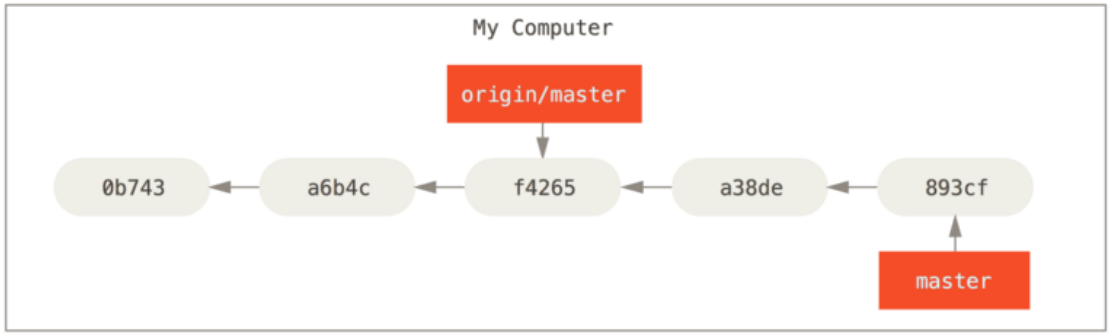


Fetching the Changes

- The command `git fetch` is primarily used to download the content of a Git repository.
- You can use the command git fetch <remote> to fetch the changes from remote.
- When you fetch all the changes are downloaded but they are not merged directly.

How fetch works?





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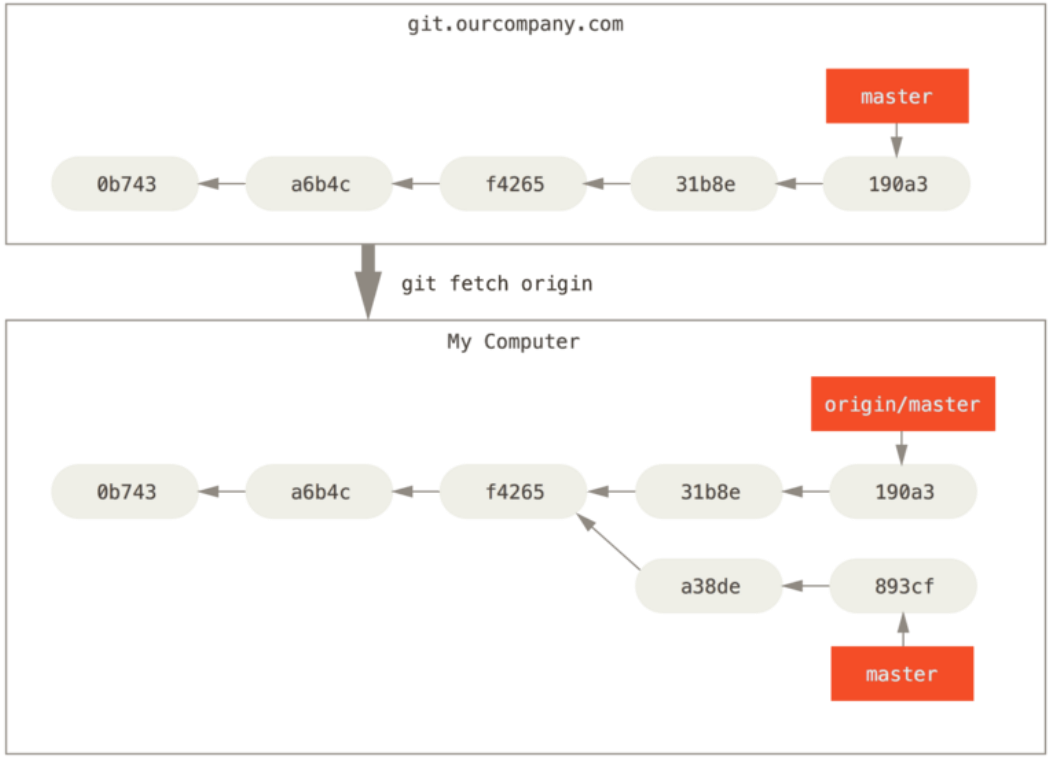

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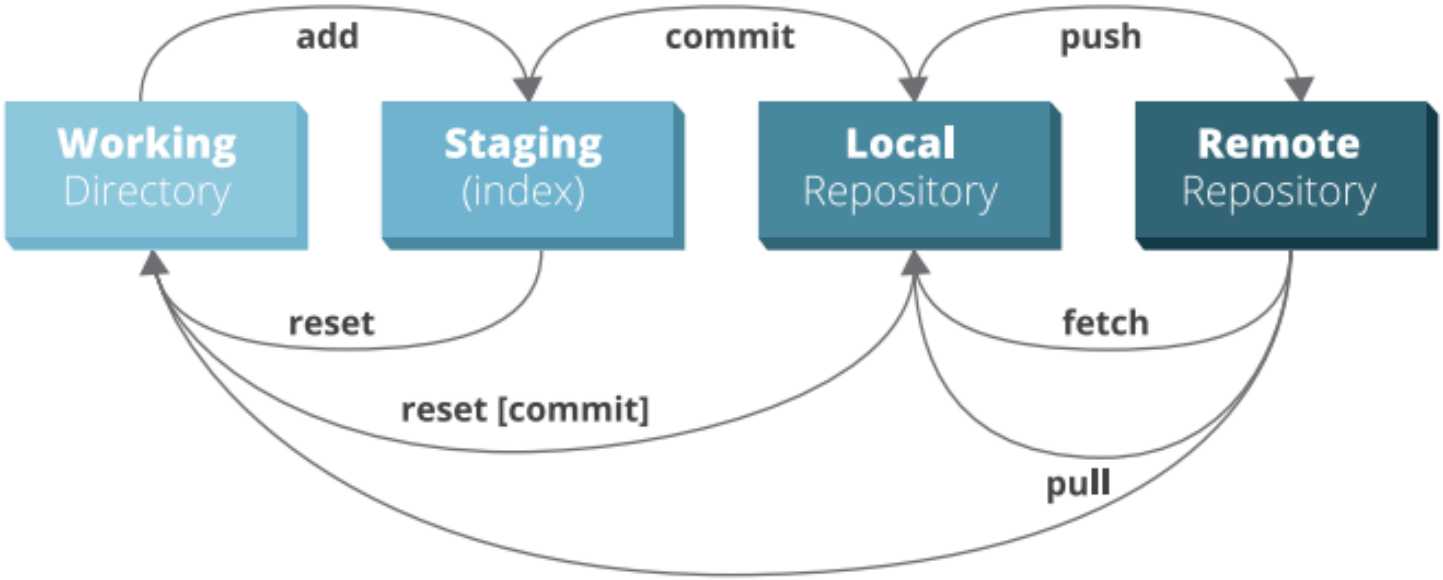
- Example; if we want to communicate to a remote branch like master we check the origin/master branch.
- You can see the remote branches by the command `git branch -vv`.

Pushing the Changes

- By default, the local repository is not in sync with remote repo.
- We need to push the changes with command, `git push <remote> <branch>`.
- This also helps to maintain a private repository of a public code.
- While pushing for the first time, use the command `git push -u <remote> <branch>`.

Git Remote Workflow



Pulling the Changes

- We can use the command `git pull <remote>` to download the content from the remote repository.
- This command is equivalent to `git fetch <remote>` immediately followed by `git merge` command.
- It is better to fetch than pull as pull might confuse you sometime.

Branches in remote

- To create a new branch in remote, use command `git push <remote> <branch>`.
- To delete a branch in remote, use command `git push <remote> --delete <branch>`.

Tags in remote

- By default, when we push the changes to the repo tags are not pushed.
- To push the tags, we can use the command `git push <remote> <tagname>`.
- To push all Git tags to the remote, use command `git push <remote> --tags`.
- To delete a tag, use command `git push <remote> --delete <tag>`.
- To pull without any tags use command, `git pull --no-tags`.

Some Remote Commands

- To add a new remote, we can use command `git remote add <name> <link>`.
- To rename a remote, we can use command `git remote rename <old> <new>`.
- To remove a remote, use command `git remote rm <name>`.
- To remove a branch from remote, use command `git push <branch> --delete`.

Check-In Alert

Proceed to the link, bit.ly/mlsa-git-checkIn with today's check-In code:

"Git&GitHub"

Thank you!

Please refer to the chat section on our Microsoft Teams for resources and feel free to ask any queries about this session in our discord channel **#git-workshop-query**.