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Git is a free and open source distributed version control system(VCS) designed to handle everything from small to very large projects with speed and efficiency.

Github is a code repository or hosting platform for version control and collaboration .The version control system for github is git.

The use of github

To use github you will need an account.

Hosting code

To host code in github, we need to create a repository to store all your project files and revision history.

When creating an empty repository you will be prompted to add:

- A ReadMe file- this is a basic text folder that contains information about your project and the files in it.
- A .gitignore file - this is also another basic text file that contains lines of names for different files in your project that should be ignored by git. To ignore a file means not to publish the file to the remote repository nor pull it from a remote repository.

Accessing repositories and making changes to them from your local computer.

To access github remotely we can do it through a command line(git bash )or a GUI (github desktop).

Git bash provides a BASH emulation for git commands from the command line.

1. To clone an existing repository- this is to make a copy of an existing repository. It copies all the project files and folders to your local computer. The command to do this is.

   git clone <repo here> newproject

Once you have a local copy of the project, you can make changes to it by adding files,editing existing files, removing files, renaming e.t.c.

But the changes will not be reflected on the remote repository until you commit the changes and push it to a branch.

The commands for doing this are as follows:

- **git add** Adds files to the staging area for Git.
- **git commit** Record the changes made to the files to a local repository.
- **git push** Sends local commits to the remote repository.

Since github is a collaborative system, this means that more than one person can work on the same repository to view changes made to a repository after you have already cloned it. Use the command

**git pull** To get the latest version of a repository run *git pull*.

## Why do we need version control systems

1.Versio controls help in tracking changes made throughout the history of the project. It keeps logs on who made the change and when.

2.Branching and merging. This helps  teams in working on the same project but still having no influence on each other's work unnecessarily.

3. Collaborate and contribute-One of the main benefits of version control systems, especially DVCS, is that it allowed us to contribute to projects we liked despite being in different countries.

Overall vcs make it easier to manage projects, enhance workflow and promote teamwork and contribution.