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Reference: https://guides.github.com/activities/hello-world/

Reference: blog.ajinda.com/version-control-software/git-and-github/

Git

Git is a source code management software/system. Other source code management softwares in the market are TFS (Team Foundation Server) provided by Microsoft & SVN (Apache Subversion) provided by Apache.

In other words, we can say, git is a version control system (VCS) for tracking changes in computer files and coordinating work on those files among multiple people. It is primarily used for software development, but it can be used to keep track of changes in any files.

Source code management softwares have many features, some of them are as followings:

1. Track files & their changes
2. Codes comparison (Compare codes)
3. Source code versioning
4. Source code branching
5. Merging branches
6. Compare branches

etc.

Git software is today available for almost all platforms. We can install git on windows & run git commands through command line i.e. CMD. When we install git, this software also installs their own command line tool called 'Git Bash', we can

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collaboration - कलेबरेशन - act of working jointly
Repository - रिपाजिटोरी - गोदाम
Revision - रिविशन - संशोधन, सुधार/दोहराई
Remote - रिमोट - a device that can be used to control machines from a distance.

use it too to run git commands.

GitHub: GitHub is a code hosting platform for version control and collaboration. It lets you and others work together on projects from anywhere.
Or we may say that, GitHub is a web based git repository hosting service.
When we install git on our machines then we get all features of repository locally but our system(machine) is storage is not centralized, due to this reason multiple developers can not do collaborative development on your system. To solve this problem, we need a remote git repository like GitHub. In the use of git, repository is always present in every developer's system locally as well as on a centralized place like/for ex GitHub where we have to sync/push all changes of local repository to there so that all local changes can be update on centralized storage like/for ex on GitHub.

1 repository = 1 project with their all source-code files

i.e. 1 repository provides space exactly for 1 project/application

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Git Commands

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Installing Git extension on Windows:

1. Search for 'git extensions' on google
2. Find website https://gitextensions.github.io/ and then open this.
3. Click on link at first line of page i.e. Download latest version: Download Link
4. Click to download 'GitExtensions-*-setupComplete.m
5. Now install this extension & restart computer &
6. After installation open cmd and GitBash (desktop shortcut maybe)

Configure local system: To configure local system so that your system (machine) can be identified in git repository system when multiple developers work, we do the followings: Use Git command line tool 'Git Bash':

```
git config --global user.name "jitendra" ↵
git config --global user.email "goto.jiterdra@gmail.com" ↵
```

To get configured username & email, use following commands:

```
git config user.name ↵
git config user.email ↵
git config --list ↵   ⇒ This lists you all locally configured git key/value pairs including username and email.
```

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Create repository: Use Git Bash and go to the directory where you want to create/initialize repository/application/project or already created project.

git init magento2 ↵

hidden folder

You will see, there creates a directory (i.e. repository) with name 'magento2'. Directory magento2 contains another directory '.git' inside it having many files & folders. Actually .git contains git repository configuration files for the current repository magento2. magento2 directory may also contain a file with name '.gitignore'. This files describes whose files & folders would not be treated as part of your git repository versioning system.

Example: content of .gitignore may be as:

/nbproject/ (a folder in magento2)
/.gitignore (.gitignore file itself)

Download (clone) remote repository (from GitHub):

Get remote repository path first which you want to download. For me, I have created an account on github.com so all my repositories can be seen on url:

https://github.com/{username}/rakyadav

One of my remote git repositories url is

https://github.com/gitendrakyadav/hello-world

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In the Git terminology 'download a repository' is called 'clone a repository'.
Go to the directory where you want to download the remote repository, right-click in the directory & select 'Git Bash Here' to open Git command line tool:
git clone https://github.com/jitendrakyadav/hello-world ↵
We will see that a directory/repository 'hello-world' has been created/downloaded/cloned.

Change a file in git repository & track operations on it: Any file which we create in version-control, may be in one of following states:
1. Un-tracked → A file with some changes before 'git add command' remains in untracked state.
2. Staged → After using 'git add command', file enters into staged state. It means, now file is available in versioning preparation list and ready to move into tracked list.
3. Tracked → After using 'git commit -m "_"', file enters into tracked state. It means file & all its changes are now under version control system and git repository/git system is monitoring this file and any no. of changes making on this