

Introduction to Git and GitHub

What is Git?

Git is a popular version control system. It was created by Linus in 2005, and it is maintained by Junio Hamano.

It is popularly used of :



- Coding Collaboration
- Tracking code changes
- Tracking who made changes

What is the use of Git ?

- Easy to manage Project Repositories
- Easy to clone projects and repositories
- Branch and Merge allow us to contribute in different part of project
- PULL and PUSH are used to project local copy and local updates to main project

What is the contribution of Git to the developer?

- Developer can contribute their work at any part of the world
- There are 70% of developer uses Git!
- Developers can see the history of project and revert to earlier version of project

How to use Git and Git Commands ?

Step 1 - Install Git

You can download Git for free from the website.

Step 2 - Open Command shell to start the Git

To check that you installed Git type `git -v`

```
Shaikhs-MacBook-Pro:wipro shaikhfarhan$ git --version
git version 2.15.0
```

What are Git Command Line?

Git command line tools are command prompt use to interact with Git .They help to create repositories, tract changes ,collaborate with others and manage project history.

Here are some list of Git command line used in git bash:

- mkdir
- Cd
- git init
- touch
- git add
- git clone
- git status
- git log
- git commit

Creating a Git Folder

Now, Lets create a new folder using git command:

Step 1: Type **mkdir** and **projectname** makes a new directory

```
Shaikhs-MacBook-Pro:GIT shaikhfarhan$ mkdir farhanproject
```

Here, a new folder is created.

Step 2: Type **cd** to change the current working directory.

```
Shaikhs-MacBook-Pro:GIT shaikhfarhan$ cd farhanproject
Shaikhs-MacBook-Pro:farhanproject shaikhfarhan$
```

Now it is changed to the current directory name **farhanproject**.

Create a Git Repository

Once you have reached to current working folder, you can use command **git init** to initialize git folder.

```
Shaikhs-MacBook-Pro:~ shaikhfarhan$ git init
Reinitialized existing Git repository in /Users/shaikhfarhan/.git/
```

Now you have created your first Git Repository.

Some basic command line in Git

1.pwd

Pwd command stands for “Print working directory”, displays the full path of your current directory in the terminal code.

```
Shaikhs-MacBook-Pro:~ shaikhfarhan$ pwd  
/Users/shaikhfarhan
```

The root directory is named in your current directory.

2.touch

This command is used to create file in git bash.

```
[Shaikhs-MacBook-Pro:~ shaikhfarhan$ touch file.txt
```

Now , the file name is created with extension.

3.git add -all

This command is used to command line prompt in your local project directory to add the files or change the repository.

```
Shaikhs-MacBook-Pro:Assignment 2 shaikhfarhan$ git add file.txt
```

Now , the file is added to your directory.

4.git status

This command line is used to check the status of the repository in the project.

```
[Shaikhs-MacBook-Pro:Assignment 2 shaikhfarhan$ git status
```

```
modified:   file.txt
```

This show the new file directory is created in the repository.

5.git commit -m

This command is used to add immediately create a commit with a commit message.By default, git commit will open up the locally configured text editor.

```
Shaikhs-MacBook-Pro:Assignment 2 shaikhfarhan$ git commit -m "Initial commit: Added file.txt"  
[master (root-commit) bb6d696] Initial commit: Added file.txt  
1 file changed, 1 insertion(+)  
create mode 100644 file.txt
```

6.git checkout -b

The most common use case git checkout is used to switch between multiple branches in repository.

```
Shaikhs-MacBook-Pro:Assignment 2 shaikhfarhan$ git checkout -b feature-branch
Switched to a new branch 'feature-branch'
```

Now, this command will switch your working directory to the features-branch branch.

7.git merge

In Git, git merge is used to change from one branch into another.It creates a new commit that represents the merged history.

```
Shaikhs-MacBook-Pro:Assignment 2 shaikhfarhan$ git merge feature-branch
Auto-merging file.txt
```

Now, the repository is merged with the branch.

8.git log

This git log command displays committed snapshots.It shows the project history ,filter it and specific changes.

```
Shaikhs-MacBook-Pro:Assignment 2 shaikhfarhan$ git log --oneline --graph --all
* 9b936ae (HEAD -> master) Resolved merge conflict and merged feature-branch into main
| \
| * fdead15 (feature-branch) Feature branch update
* | b671203 main branch updated
|/
* bb6d696 Initial commit: Added file.txt
```



What is GitHub ?



A cloud based platform that hosts Git repositories and provide tools for collaboration and code management.It works developer push their Git repositories to allow there team member to contribute

in there project.

What are the features of GitHub?

- Provides a specific location to store git repositories.
- It also provides features like issue tracking, pull request, and to view the code.
- It also provides user friendly interference to manage the repository.
- It is easy to share code with others.

What is the difference between git and github?

	
1.It is a software.	1.It Is a serice.
2.It is installed locally in the system.	2.It is hosted on web.
3.It is a command line tool.	3.It provides a graphical interface.
4.It is a tool to manage diferent version and made files in git repository.	4.It is a space to upload a copy of Git repository.
5.It focused on version control and code sharing.	5.It focused on source code sharing.
6.it is open source licensed.	6.It includes a free tier and pay for user tires
7.No user management features.	7.BUilt in user management system.