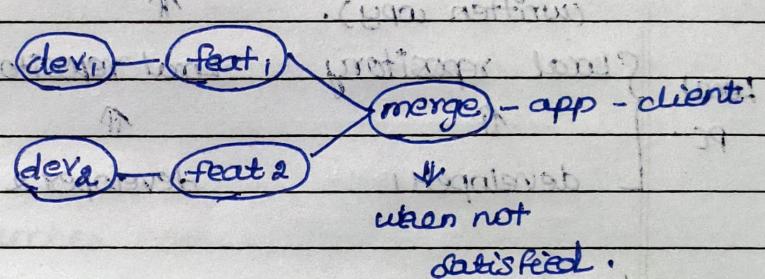


## Git and GitHub

Version control system:-

To develop a software or application, a developer has to add features one by one and provide it to the client.

But if the client not satisfied, the feature has to removed, for that we use version control system (VCS).



go back to previous

version, so latest revision history in the revisions are stored.

most of the time it's better to merge.

VCS is a software which maintains the versions of softwares, developer details, and used for sharing also.

It is centralized and every developer can access it.

working copy

[PC1]

commit

[PC2]

[Server]

[PC3]

It is also distributed.

Local  
PC

Local repository

developer 1  
team member

Local repository

developer 2

Local repository

developer 3

Git :-

Evolution of Git

Git is a distributed version control system that allows developers to track changes in their code, collaborate with others and manage different versions.

also interact with each other

\* Git was developed by Linus Torvalds in 2005 for Linux kernel of AT.

\* It stores all changes

## features of GIT:-

- \* version control system = Git keeps track of every change you make.
- \* repositories = A Git repo is like project hub where everything is stored and managed.
  - two types:
    - ⇒ local repository (computer)
    - ⇒ remote repository (server)
- \* commits : Every time you make changes and save them in Git, called commits.
- \* branches : A repository allows you to create branches and work on new features.
- \* merging : If you are done with branches, you can merge those branches into main branch.
- \* cloning : complete copy of Git repository.

steps to setup a GIT:-

\* Install GIT : Download and install  
git from official GIT website.

\* configure GIT :-

Set up your username and email.

"git config --global user.name "xx"  
git config --global user.email "xx@com"

\* Create a repository:-

"git init"

\* make your first commit:-

"git add ."

"git commit -m "initial commit"

whatever you are giving in a  
commit command will be stored  
in git repository.

## Basic Git commands:-

"git init"

Initialize a new git repository.

"git clone [url]"

clone the remote repository.

"git add [file]"

stages changes to be committed.

"git commit -m "your message""

commits the changes with name.

"git push origin branch-name"

Pushes commit to remote repository.

"git pull origin branch-name"

fetches from remote repository.

"git status"

shows status of changes.

### Git workflow:-

A Git workflow is a set of guidelines for using Git.

- \* clone repository
- \* create branch
- \* check status
- \* stage changes
- \* commit changes
- \* push and pull
- \* update and delete

### Advantages:

- \* distributed system
- \* Fast
- \* Branching and merging
- \* free and open source

### Disadvantages:

- \* merge conflicts
- \* storage
- \* setup and configuration

### Github:

Github is a web based platform that uses Git, a version control system to help developers manage and track changes to their code.

It allows multiple people to collaborate on project, track revisions and contribute to code from anywhere.

### features:

same as Git.

### Installation:

- \* create a github account.
- \* create a repository

### codes for initialization:

"git init" to start.

"git add" to commit.

"git commit -m 'first'" name for add.

"git pull and git push".

## 1.8 Difference between Git and GitHub

Sr. No.	Git	GitHub
1.	It is a command line tool.	GitHub is a Graphical User Interface(GUI).
2.	It is a software.	It is a service.
3.	It is installed locally on the PC.	It is hosted on the web.
4.	It is maintained by Linux.	It is maintained by Microsoft.
5.	Git is a version control system to manage source code history.	GitHub is a hosting service for Git repositories.
6.	It has no user management feature.	It has a built in user management feature.
7.	It is open-source licensed.	It has a free-tier and pay-for-use tier.
8.	Git has minimum external tool configuration.	It has an active marketplace for tool integration.