

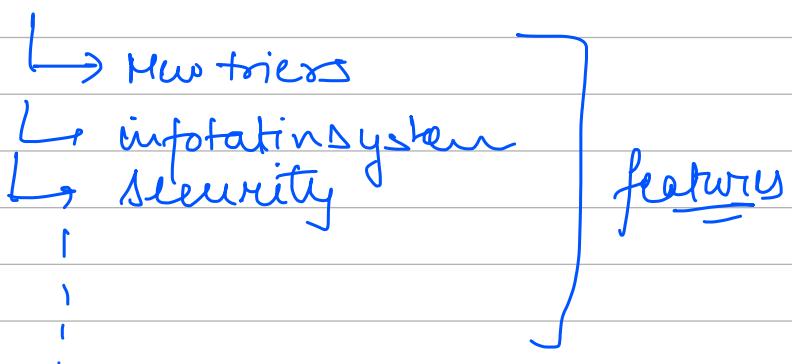
## Agenda

- 1) Version Control System (VCS)
- 2) Types of VCS
- 3) GIT

## Version Control System

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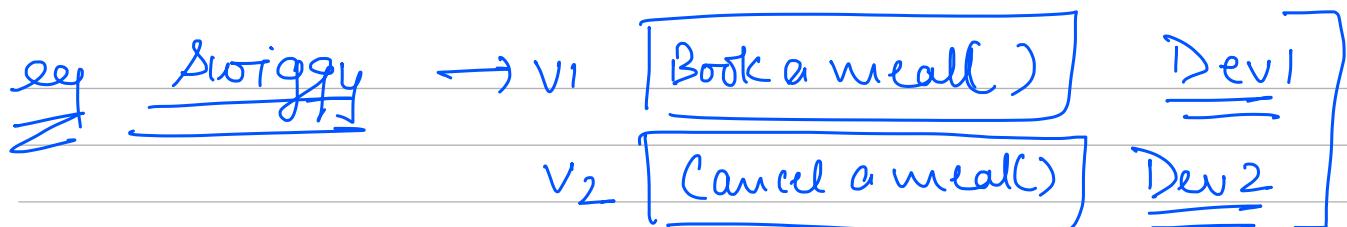


New feature or Bug fix



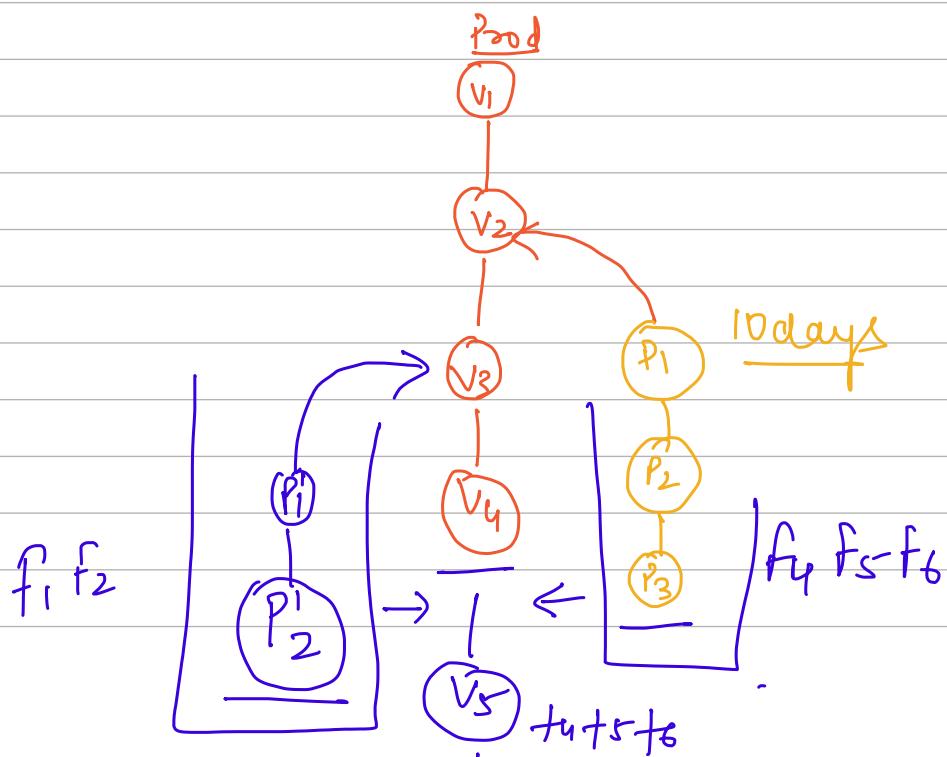
↳ Version Control System

→ VCS stands for Version Control System. It is software tool designed to help developers manage changes to source code.



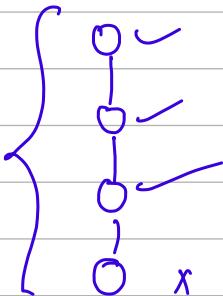
VCS → Lit, SVN (subversion), Preforce (Muongh)

[Lit developed by Linus]



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1) Keep track of how codebase looked like after every change



2) Allow you to easily revert change

3) Find out who changed what, when, why

### Type of VCS

#### 1) Centralised VCS

→ A single server where the complete history of version are being maintained

→ You need to be always connected with server when working on a change

→ Only one copy of code base

→ Every dev is connected to same server

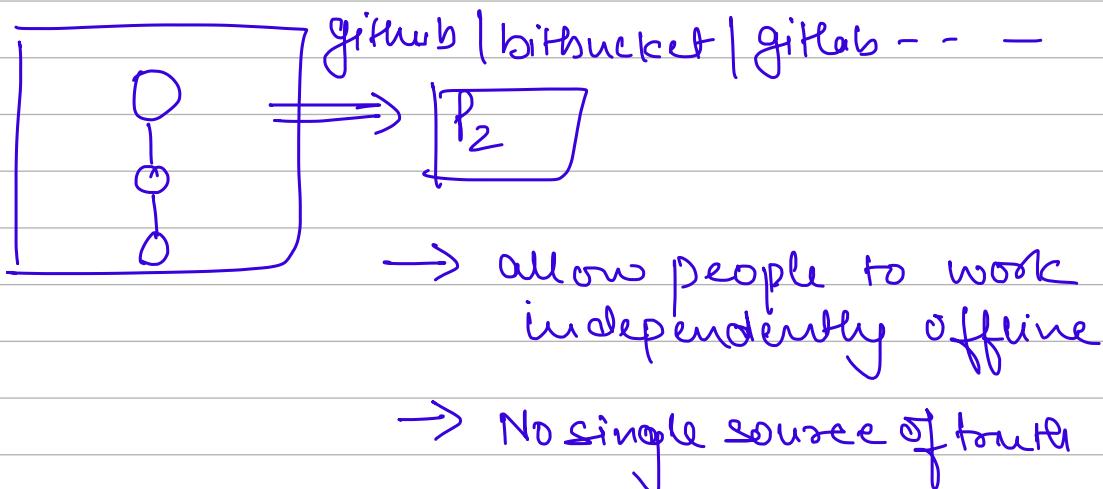
### Issues

- SPOF (Single point of failure)

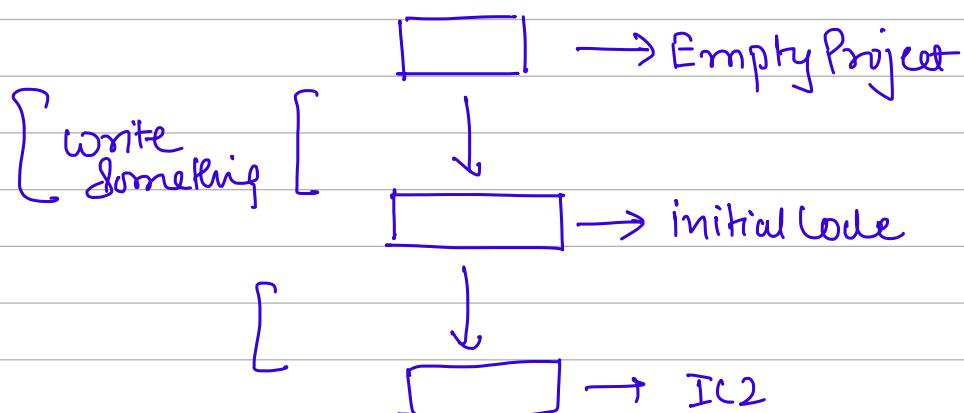
- Offline work impossible

## 2) Distributed VCS / Decentralised

↳ Copy of the complete codebase can be present on multiple machines



git manages the complete version history as a series of commit



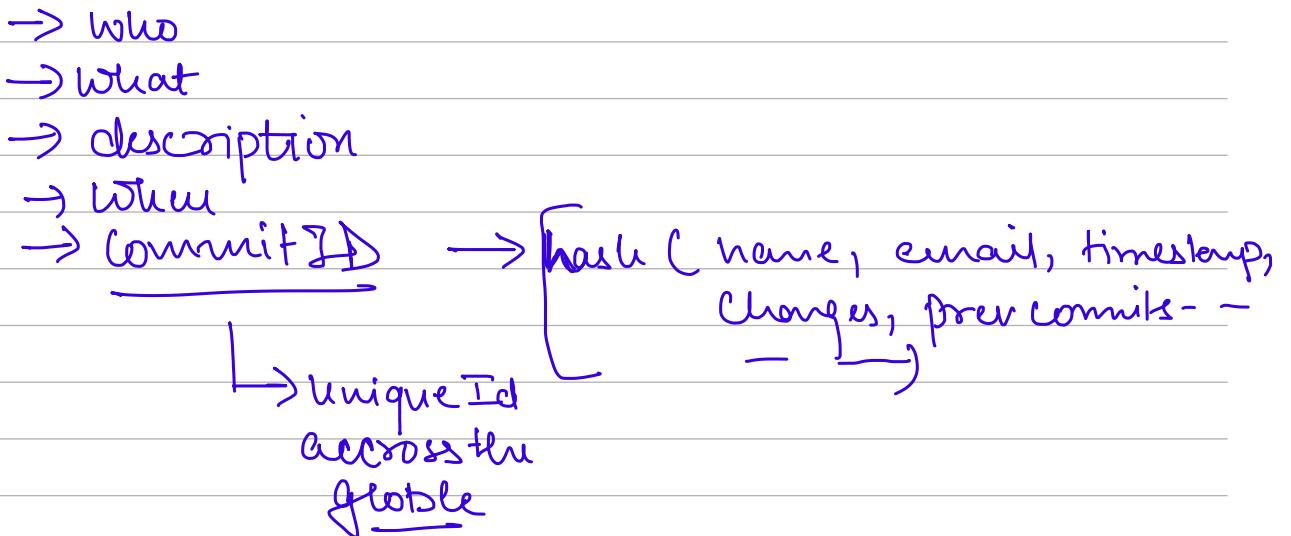
⇒ after doing a series of changes a developer may want to save those changes with Name

↓  
COMMIT

Repository is a folder which keep all the files related to specific project

↳ Keep track of changes made

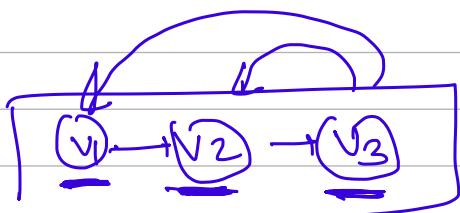
## Commit (struct)



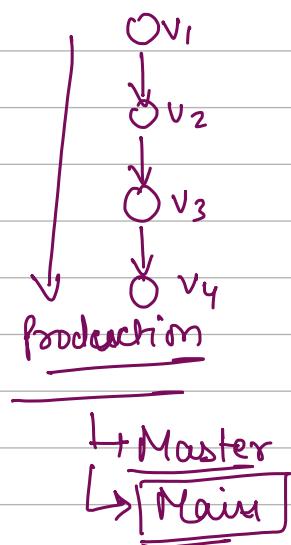
- git commit are immutable  
→ Nothing is ever lost in history

What would be stored in a git commit

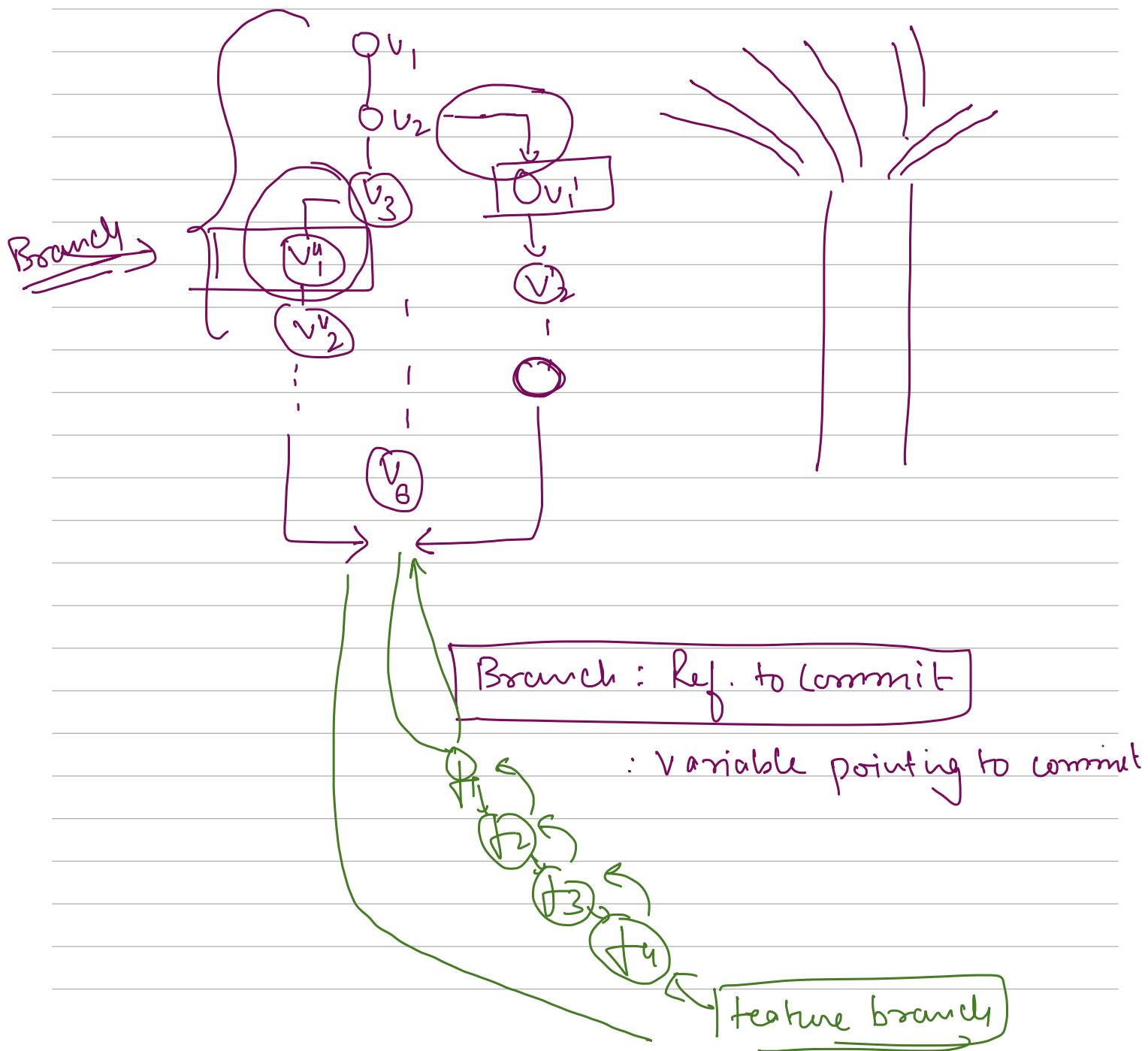
- ✗ [ D Make a complete copy of code at that moment and store that snapshot  
✓ [ => Diff | Delta | Patch  
↳ difference since the prev commit



## Cit Branch



typically there are different devs working or testing different features



[ git branch <name> ]

[ git checkout <branch-name> ]

=b create new branch

git checkout -b <branch-name>

Create branch and checkout

## Git Merge

### A. Txt

1) Nikhil is awesome

C1

Main branch

Nisha-branch

Nikhil is superawesome

C2

Pratik branch

Nikhil is dupper awesome

C3

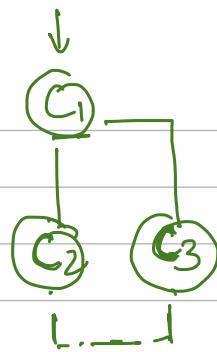


git merge

→ fast-forwarding

Main

Nishka's  
Merge



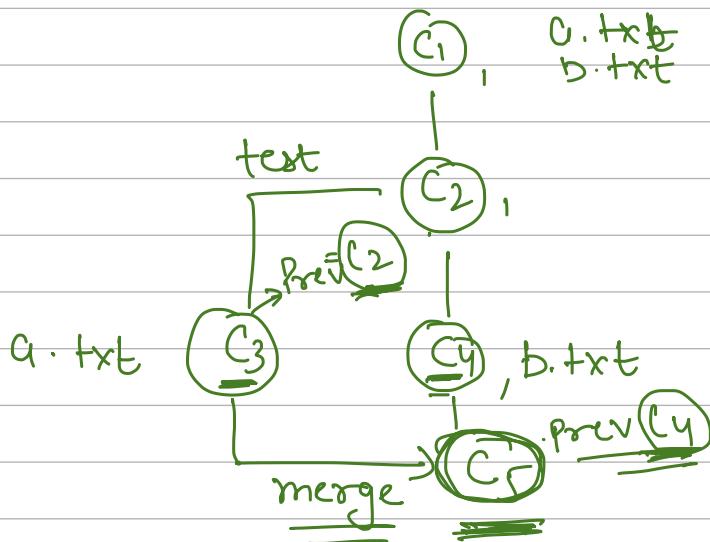
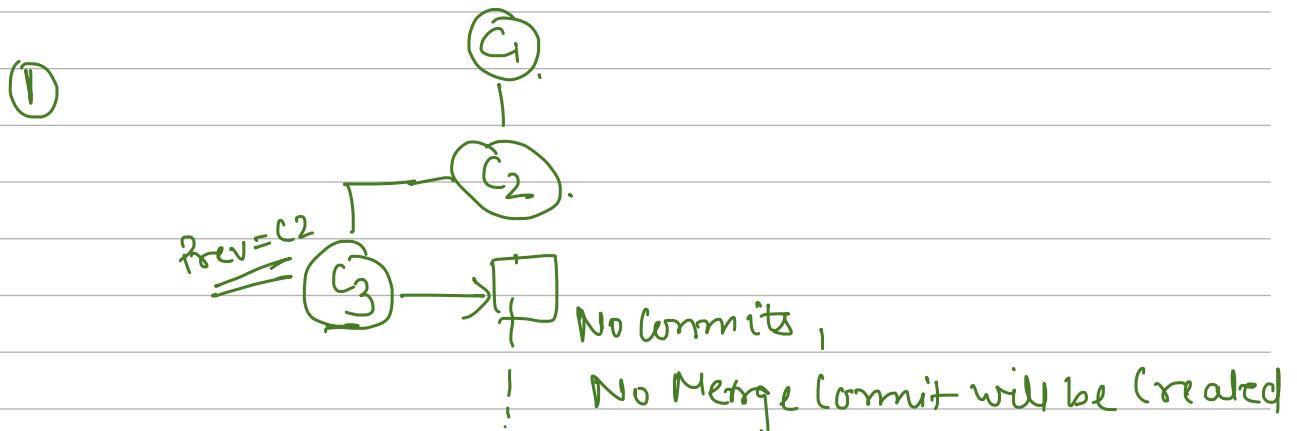
③ Nikhil is  
super  
duper  
awesome

↳ Conflict

## During Merge

When git sees changes have been made in both branches, it creates a new commit which is called merge commit.

→ if no change, no new commit



A.txt → word collab

