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Welcome to this session:
Introduction to Git and Version Control

The session will start shortly...

Questions? Drop them in the chat.
We'll have dedicated moderators answering questions.

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What is Safeguarding?

Safeguarding refers to actions and measures aimed at protecting the human rights of adults, particularly vulnerable individuals, from abuse, neglect, and harm.

To report a safeguarding concern reach out to us via email:

safeguarding@hyperiondev.com

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Live Lecture Housekeeping:

- The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly.
- No question is daft or silly - ask them!
- For all non-academic questions, please submit a query: www.hyperiondev.com/support
- To report a safeguarding concern reach out to us via email: safeguarding@hyperiondev.com
- If you are hearing impaired, please kindly use your computer's function through Google chrome to enable captions.

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Lecture Overview

- Introduction to Version Control
- Setting up git
- Working with git

Learning Outcomes

- Define version control and its importance in Software.
- Explain the basic concepts of Git, including repositories, commits, and branches.
- Perform common Git operations.

Version Control

How do you back-up the projects you are working on?

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Version Control

Have you ever changed a program so much that you broke the code completely?

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Version Control: The "Time Machine" for Code

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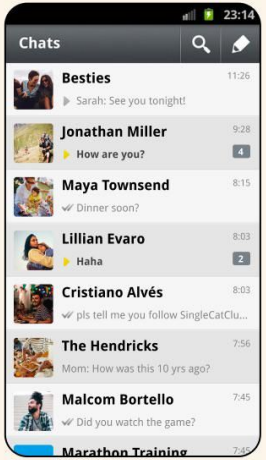
Relevance

- Ever wondered how apps like Instagram and WhatsApp keep getting better without breaking?
- How do developers manage to add new features and fix bugs without chaos?
- The answer lies in a powerful tool called **Version Control**.

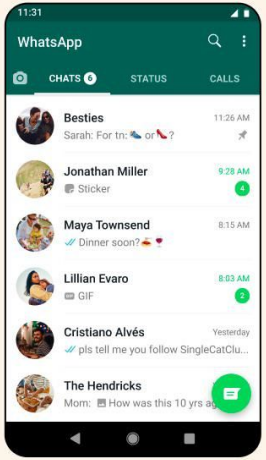
Relevance

Design over the years

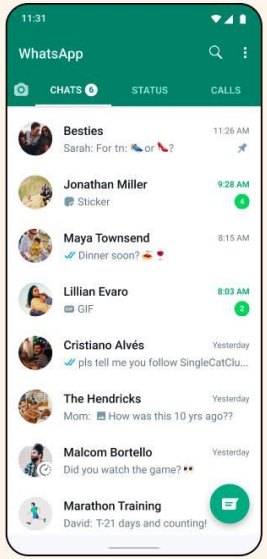
2011



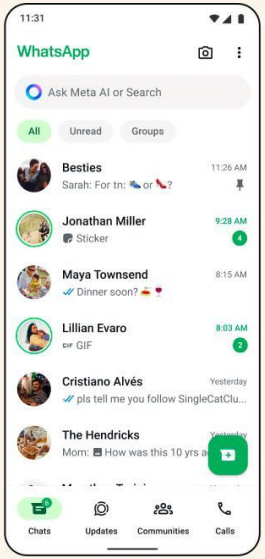
2012



2020



2021



2024

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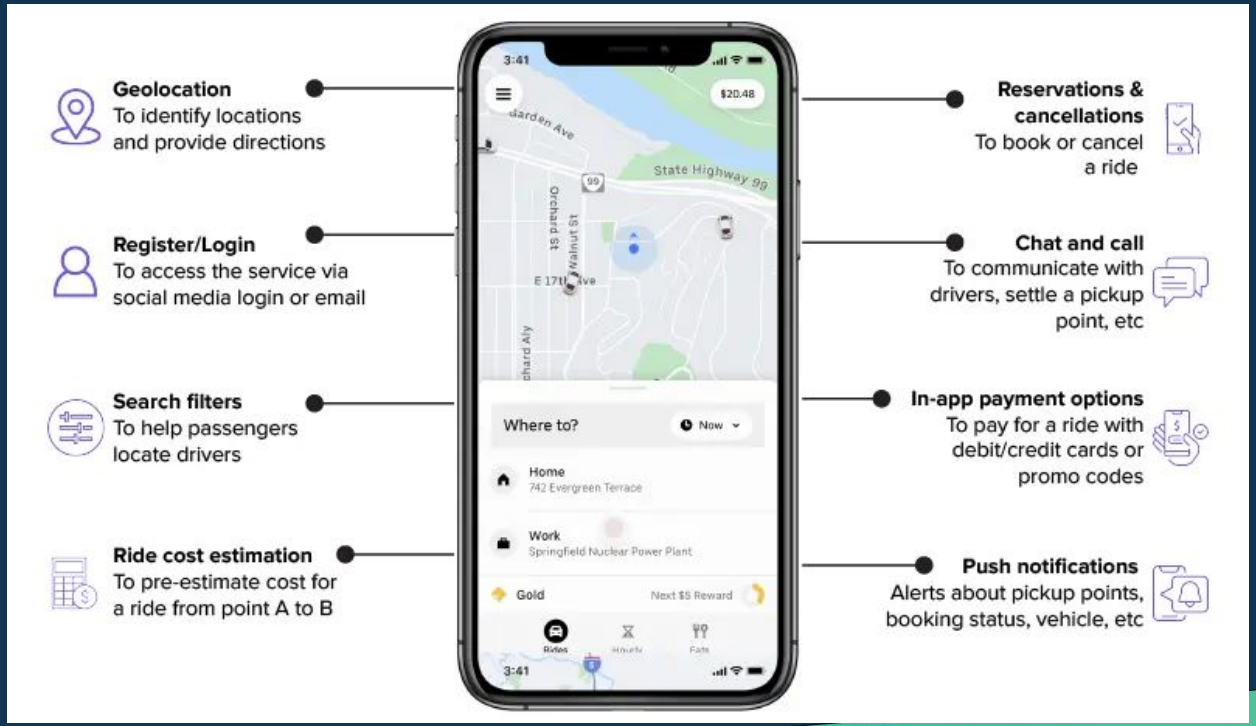
Real-World Example

- Each update you see has a team of developers behind it, each contributing their part. But how do they track who changed what? And if something goes wrong, how do they roll back to a previous version?

Relevance



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Introduction to Version Control

Just as you can track changes in a Google Doc, developers use Version Control to manage and track code changes.

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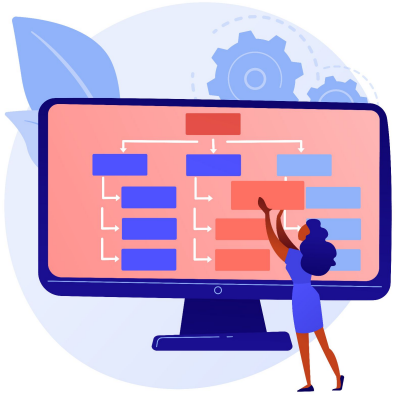
Version Control

- Used to track and manage different versions of our software.



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What is Git? Disclaimer

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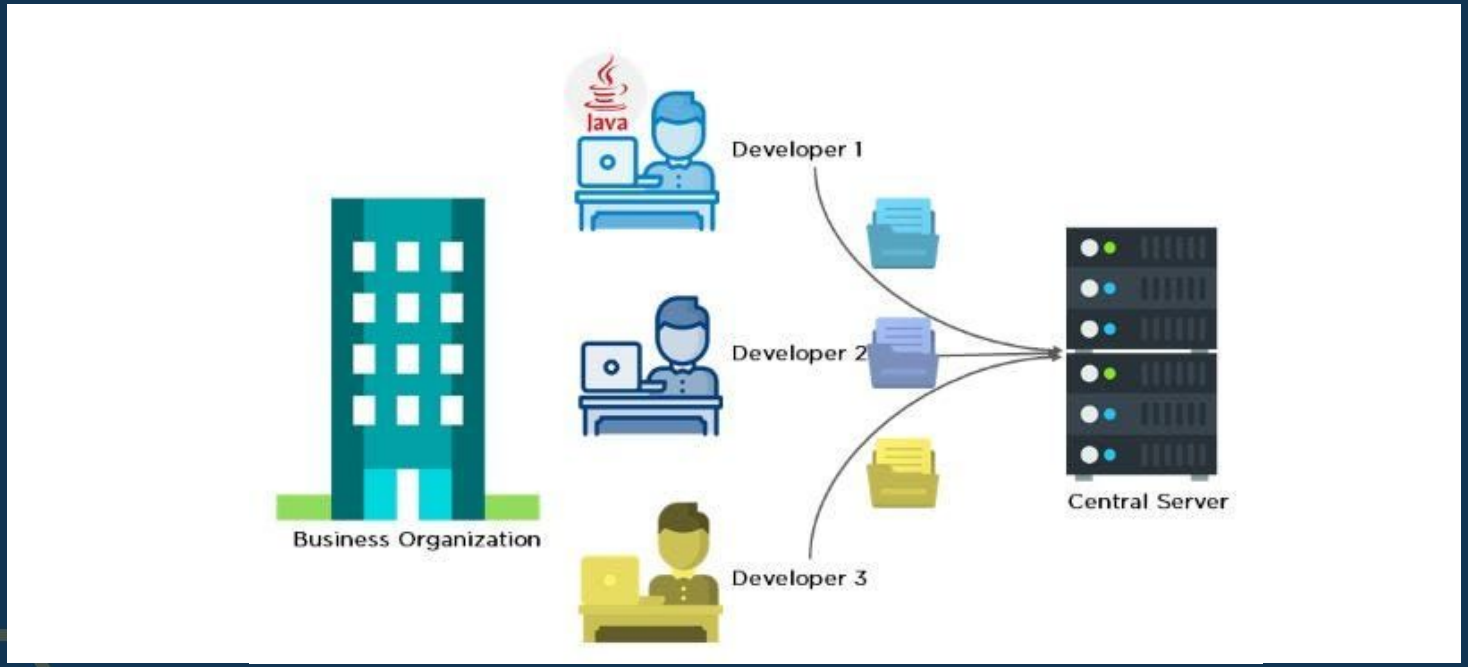
What is Git?



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What is Git?

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What is Git?

- A powerful version control system
- Tracks changes to your code over time
- Enables collaboration with other developers
- It’s a distributed system, so every developer has a full copy.
- **Why Git?**
  - **Distributed nature:** Work offline and sync later
  - **Branching and merging:** Experiment without risk
  - Strong community and support

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BREAK

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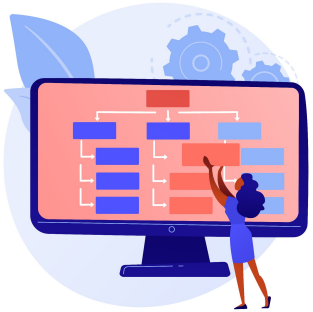
Download and Configure Git

- Download link: https://git-scm.com/downloads
- Configure git:
  - git config --global user.name "Your Name"
  - git config --global user.email "your.email@example.com"



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Init

- Initialises a new git repository in the current directory.
- Command: ‘git init’

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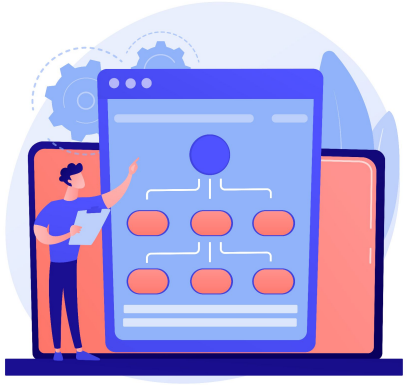
Tracking

- Files can be in 3 states
  - Modified or Untracked
    - Changes have been made to the file that won't be committed.
    - Files that have never been committed.
  - Staged
    - Files have been added to the staging area and changes will be saved on next commit.
  - Commit
    - Files have been committed to the repository and changes are saved.

Branching

- Allows us to create a copy of the main code to make changes and fix bugs without affecting the main code.



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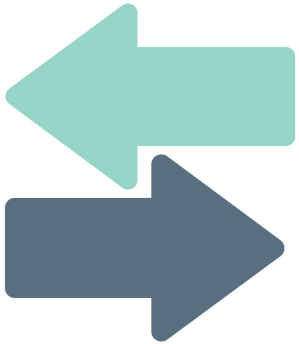
Merging

- Allows us to merge branches together to apply changes.



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Stashing

- Stashes non-committed changes to allow us to switch to different branches.

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Undo changes

- We can undo changes using ‘git checkout’ or ‘git revert’
- We require the commit ID we would like to revert back to.

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Polls

Please have a look at the poll notification and select an option.

What is the main purpose of version control?

A. To delete unnecessary files from the project.
B. To track changes and collaborate on code.
C. To compile and run code efficiently.
D. To create backups of your system files.

Polls

Please have a look at the poll notification and select an option.

What does the git add command do?

A. Saves changes to a remote repository.
B. Creates a new branch.
C. Moves changes to the staging area.
D. Deletes a file from the repository.

Q & A SECTION

Please use this time to ask any questions relating to the topic, should you have any.

Thank you
for attending
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