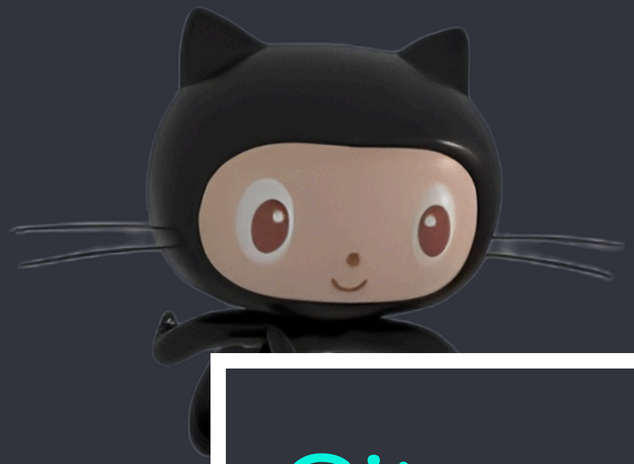
IT Club



Git and GitHub

Day-2

Remote | Branching | Merging

Nibida Ghimire | Samriddhi Karki

Day-2

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- **Basic Introduction to remote**
  - Git vs GitHub
  - Creating a GitHub account
  - Pushing our local repo to GitHub
  - Connecting a local repository to a remote (git remote add)
  - Pushing to a remote repo (git push)
  - Pulling changes from remote repo (git pull)
  - Keeping our secrets secret with .gitignore

- **Branching and Merging**
  - Understanding Branches
  - Creating/Switching Branches
    - (git branch, checkout/switch)
  - Rebase
  - Squash
  - Hands-on practice

- **Merge Conflicts**
  - Understanding merge conflicts
  - Strategies to solve merge conflicts
  - Hands-on practice

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Git vs GitHub

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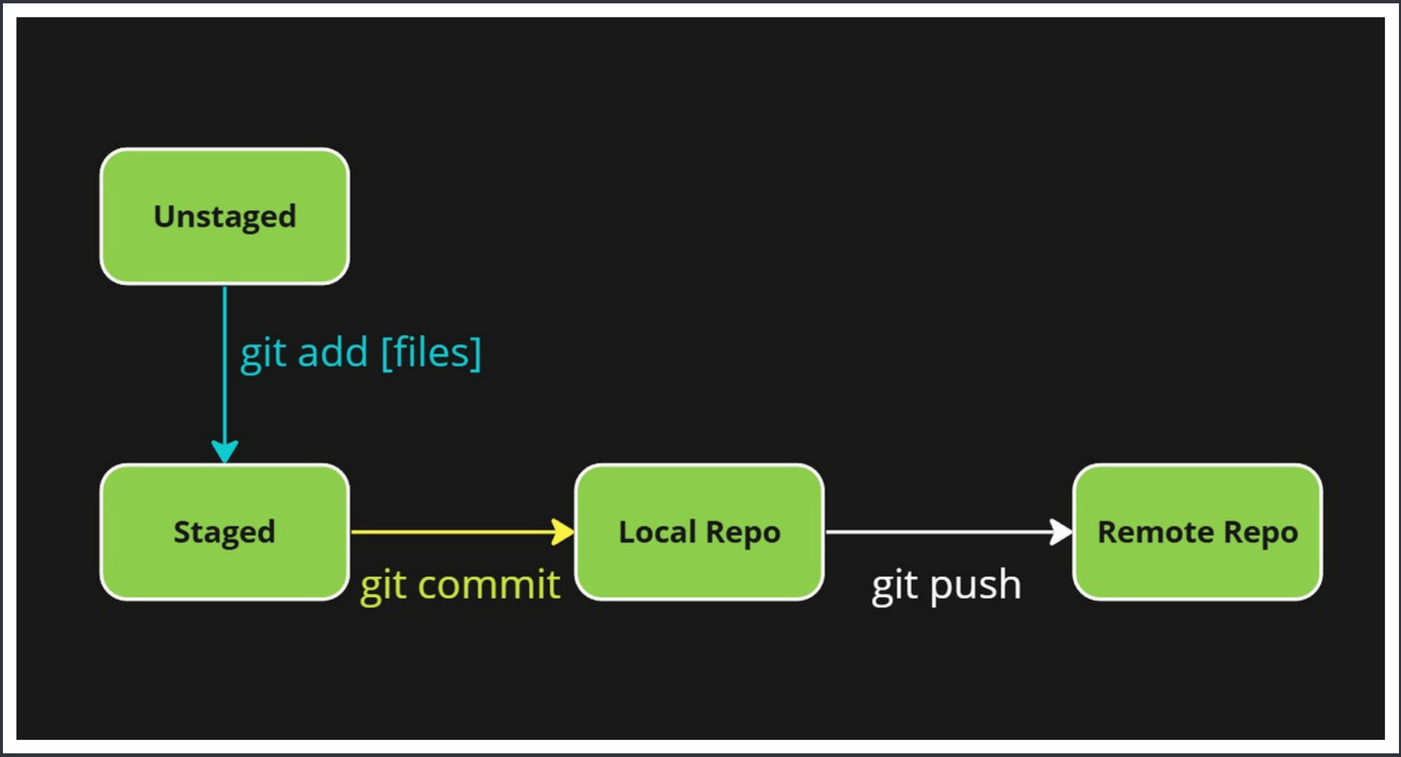
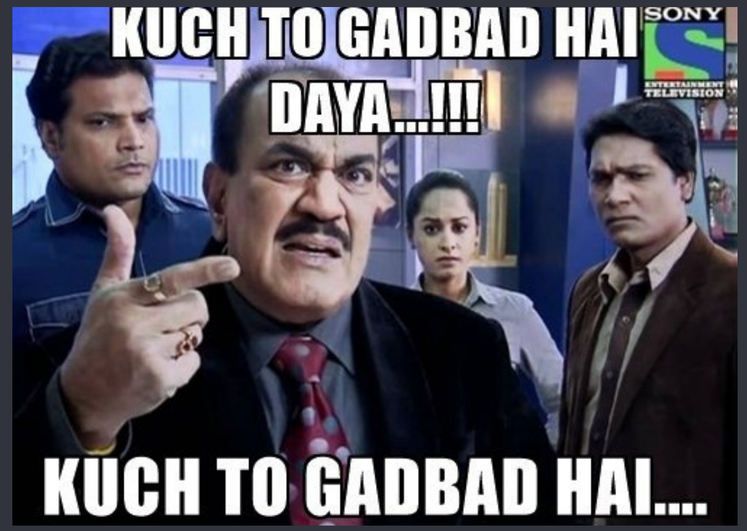
Workflow



Add --> Commit --> Push

ACP



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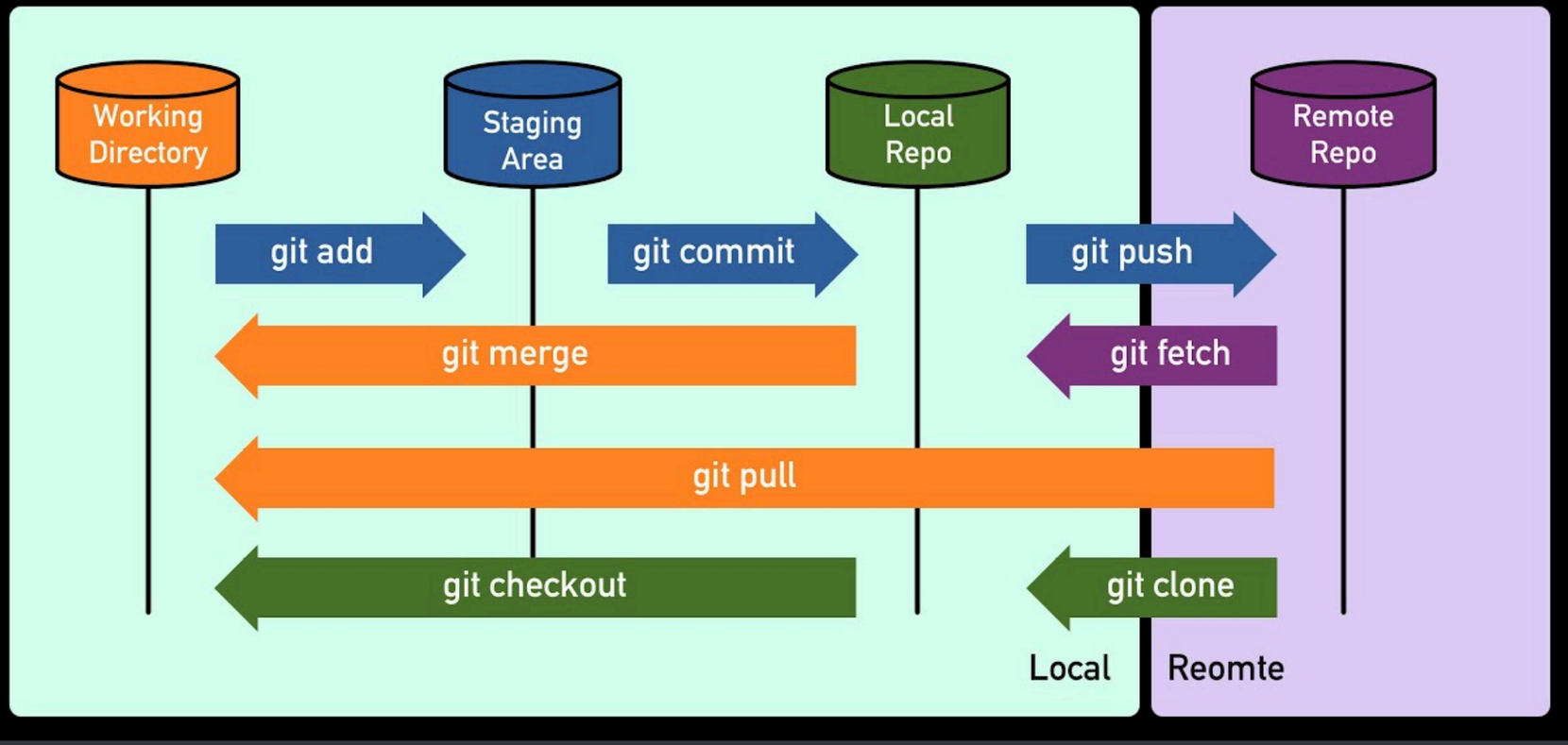
How Git Actually Works



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Git Ignore

Files included in .gitignore file are ignored while committing and pushing the code.

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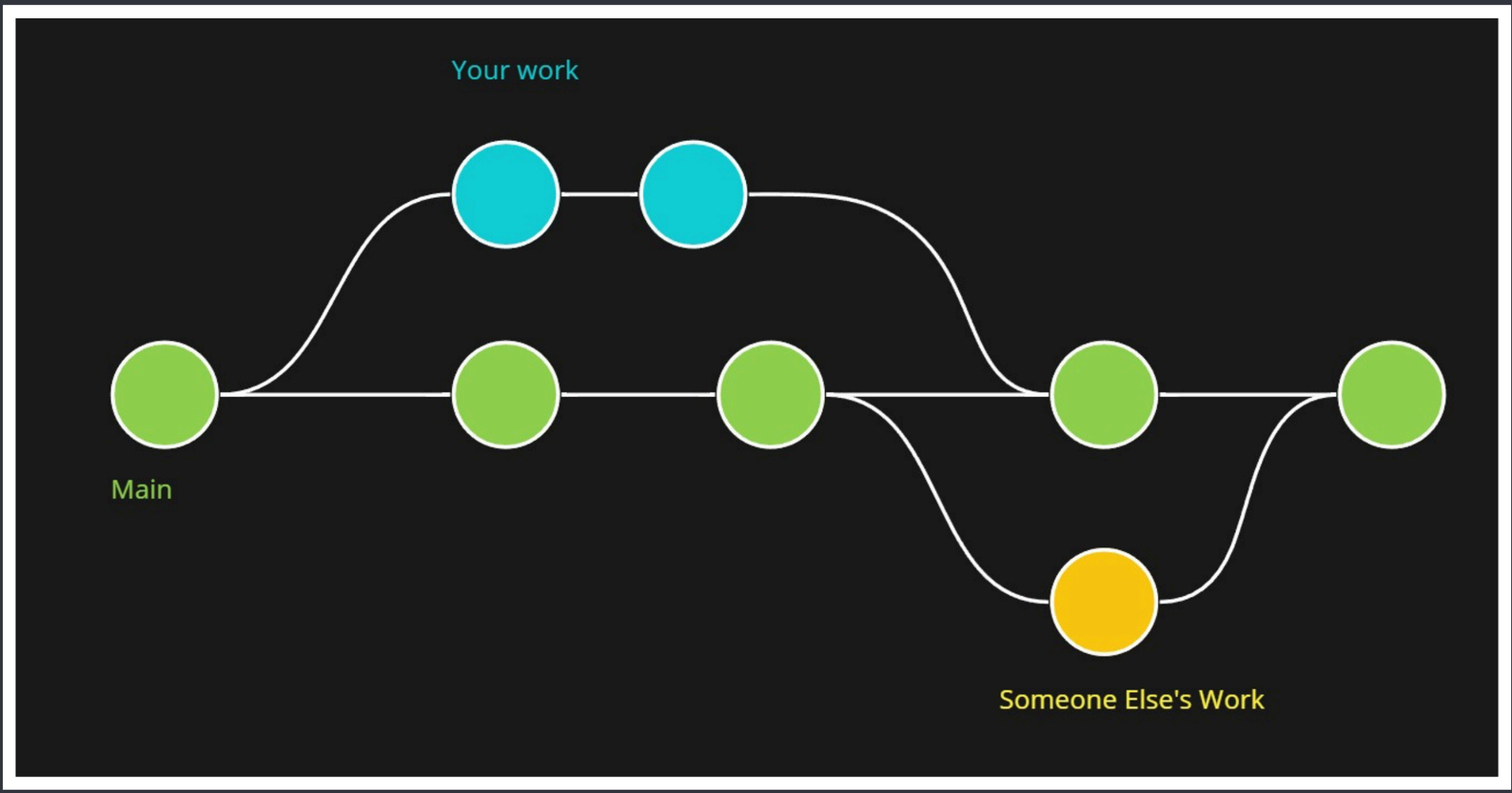
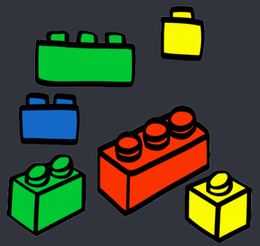
Branching And Merging





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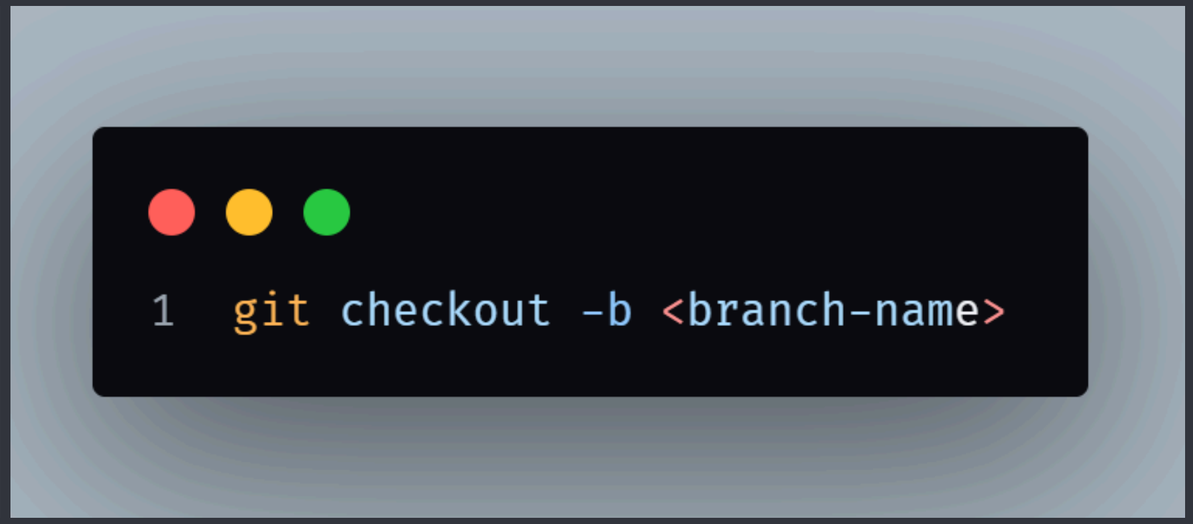
Branching

Branching & Accessing the Branch



Single Line Branching & Accessing

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Naming Conventions

1. Use descriptive and meaningful names for branches, such as: "feature/login-page", "fix/bug-123"
2. Use hyphens or slashes to separate words in branch names
3. Use prefixes like "feature/", "fix/", "hotfix/" to indicate the purpose of the branch
4. Use issue or ticket numbers in branch name for better tracking and traceability.

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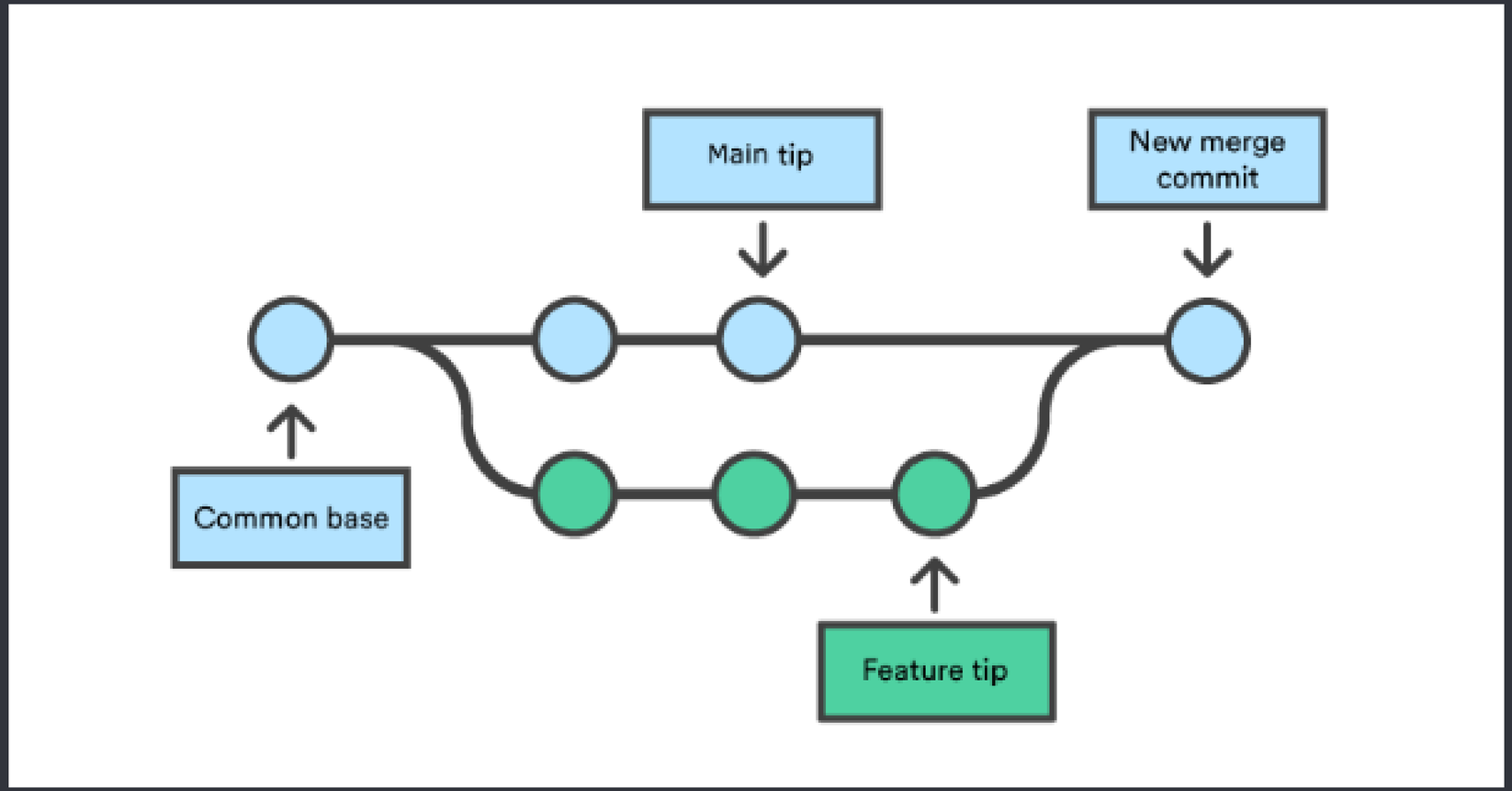

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Merge

- Integrates changes from one branch.
- Combines changes from a feature or development branch into the main or release branch.
- Preserves the history of changes and ensures collaboration among team members.
- Allows developers to incorporate new features, bug fixes, or updates into the target branch

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git merge <branch-name-to-merge>
#example:
git checkout main
git merge <branch-name>

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Rebase

- Process of moving or combining a sequence of commits to a new base commit.
- Rewrites the commit history of a branch by placing it on top of the target branch.
- Useful for maintaining a clean and linear commit history, especially in collaborative environments

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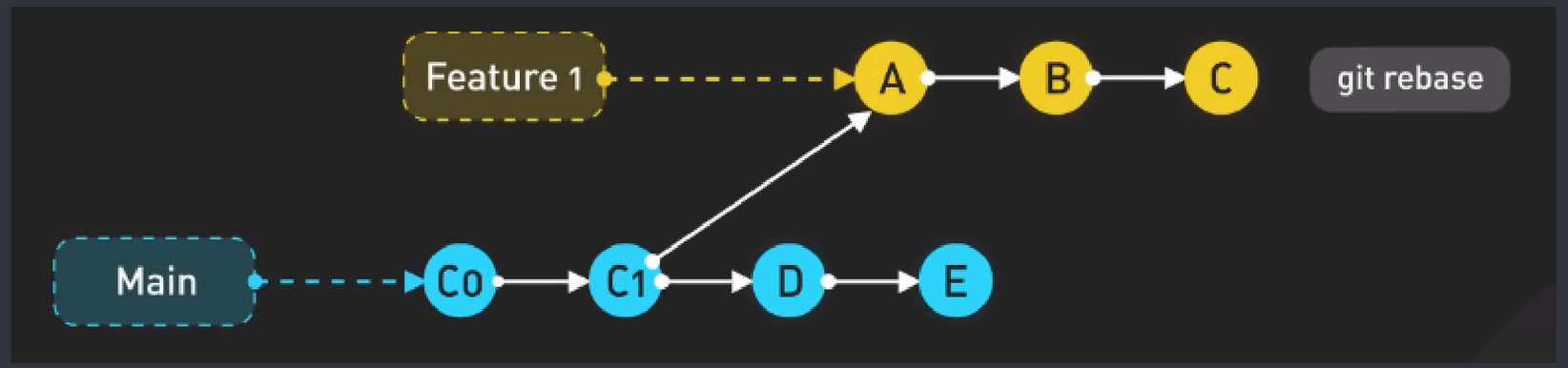

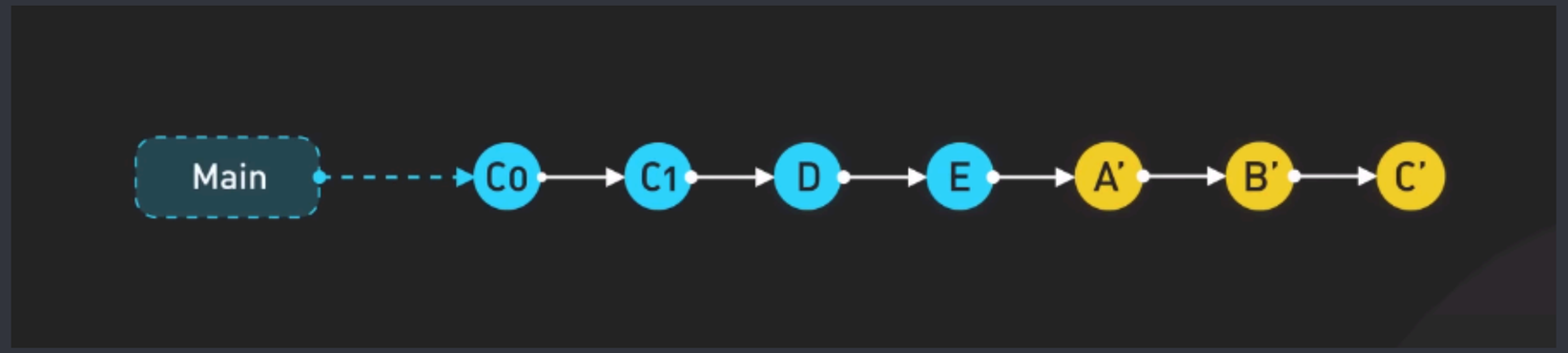

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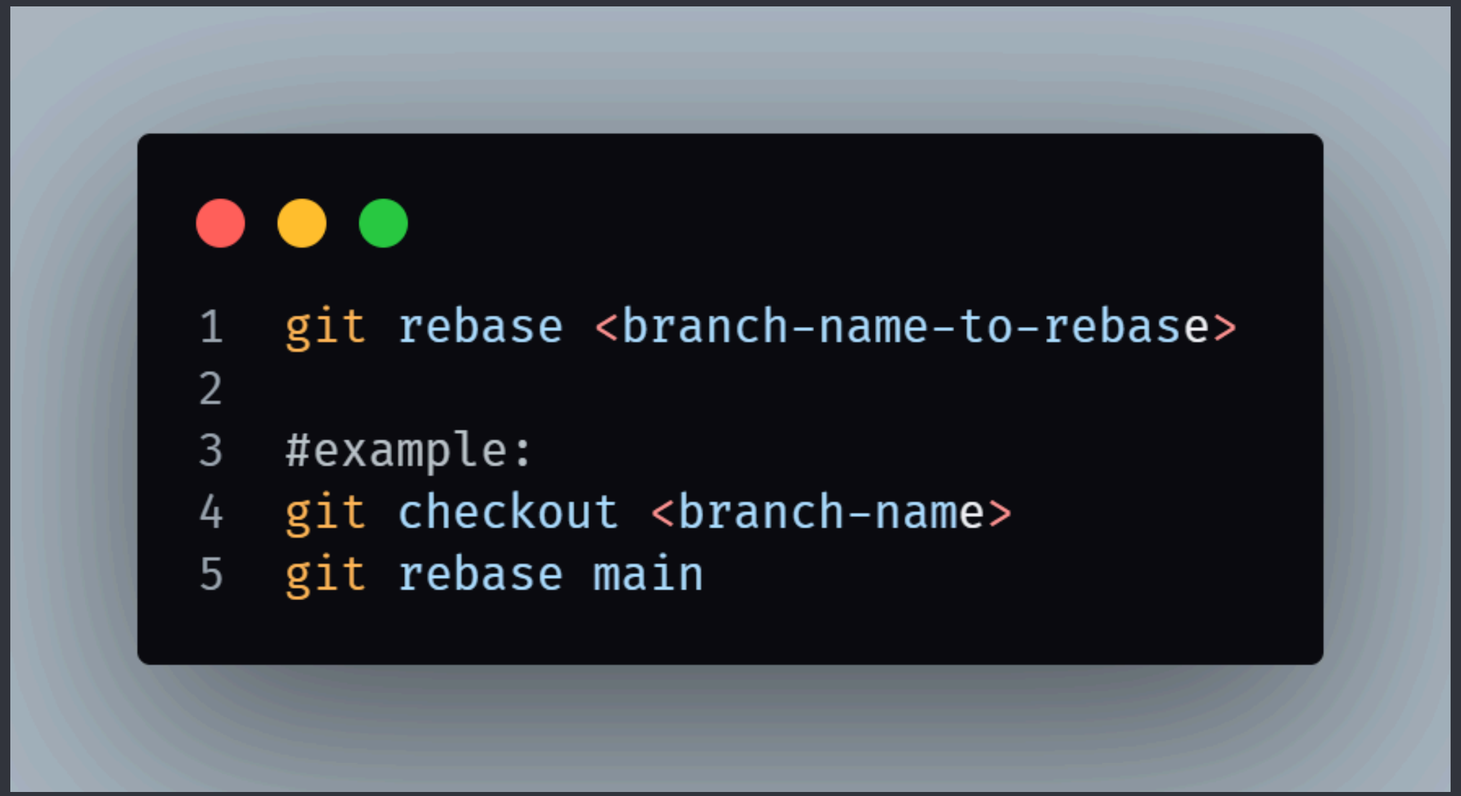

```
git rebase <branch-name-to-rebase>

#example:
git checkout <branch-name>
git rebase main
```

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Squash

- Combines multiple commits into a single commit.
- Helps to condense the commit history, making it more concise and easier to follow.
- Useful for tidying up a series of minor or related commits before merging into the main branch.

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Conflicts

- Generally arise when two people have changed the same lines in a file, or if one developer deleted a file while another developer was modifying it.
- Git cannot automatically determine what is correct.
- Git will mark the file as being conflicted and halt the merging process.

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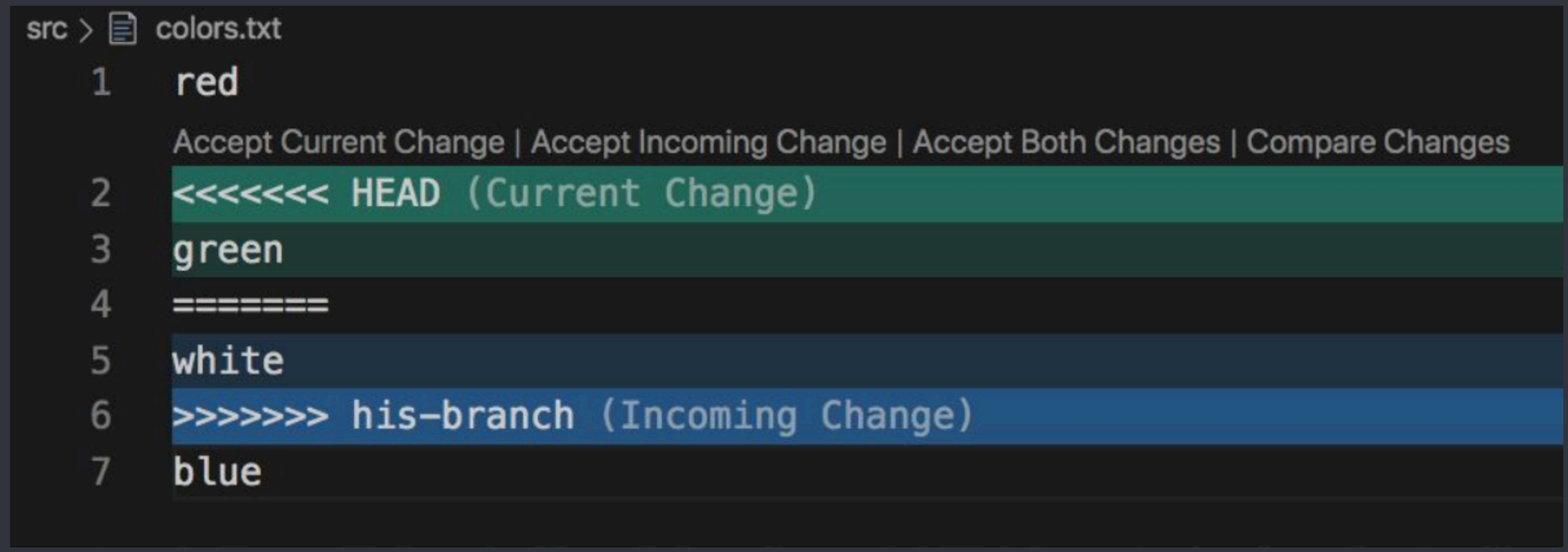
Resolving Conflicts



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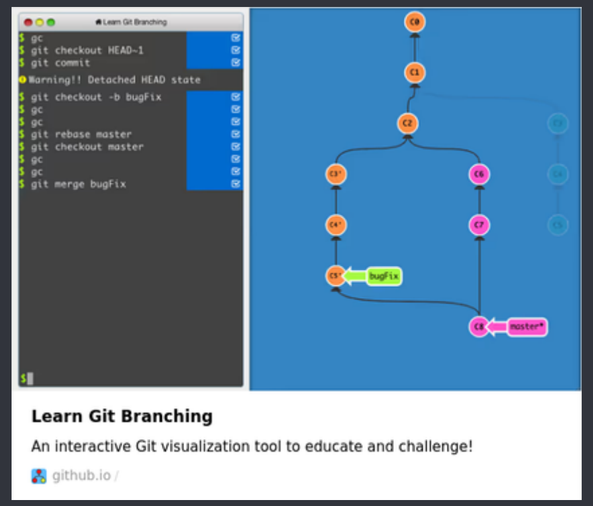
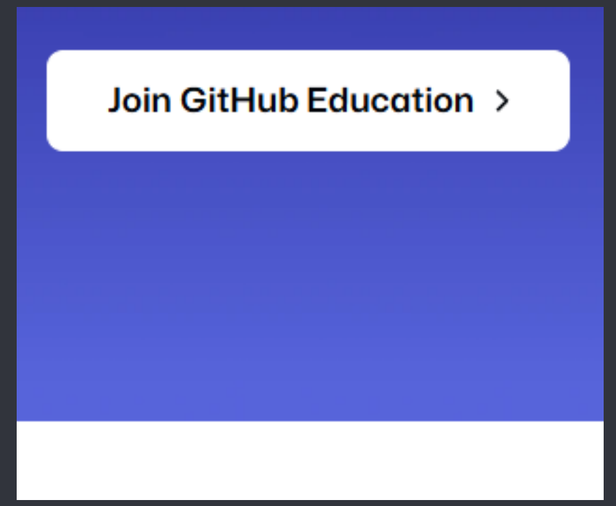
Resources



https://learngitbranching.js.org/

https://education.github.com/git-cheat-sheet-education.pdf



https://github.com/edu/students

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Thank

You!