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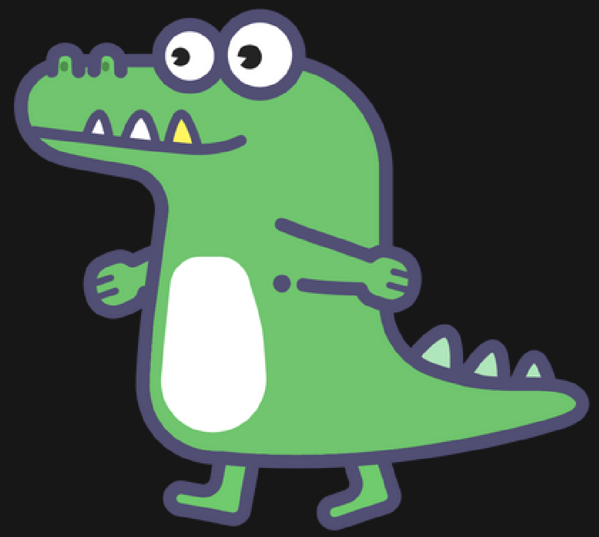
Git and GitHub

By Paras Gupta

About the session

Introduction



GitHub

1. Hosts Git repositories
2. Allows sharing of codebase
3. Allows collaboration among developers, both on personal as well as open source projects

Version Control System

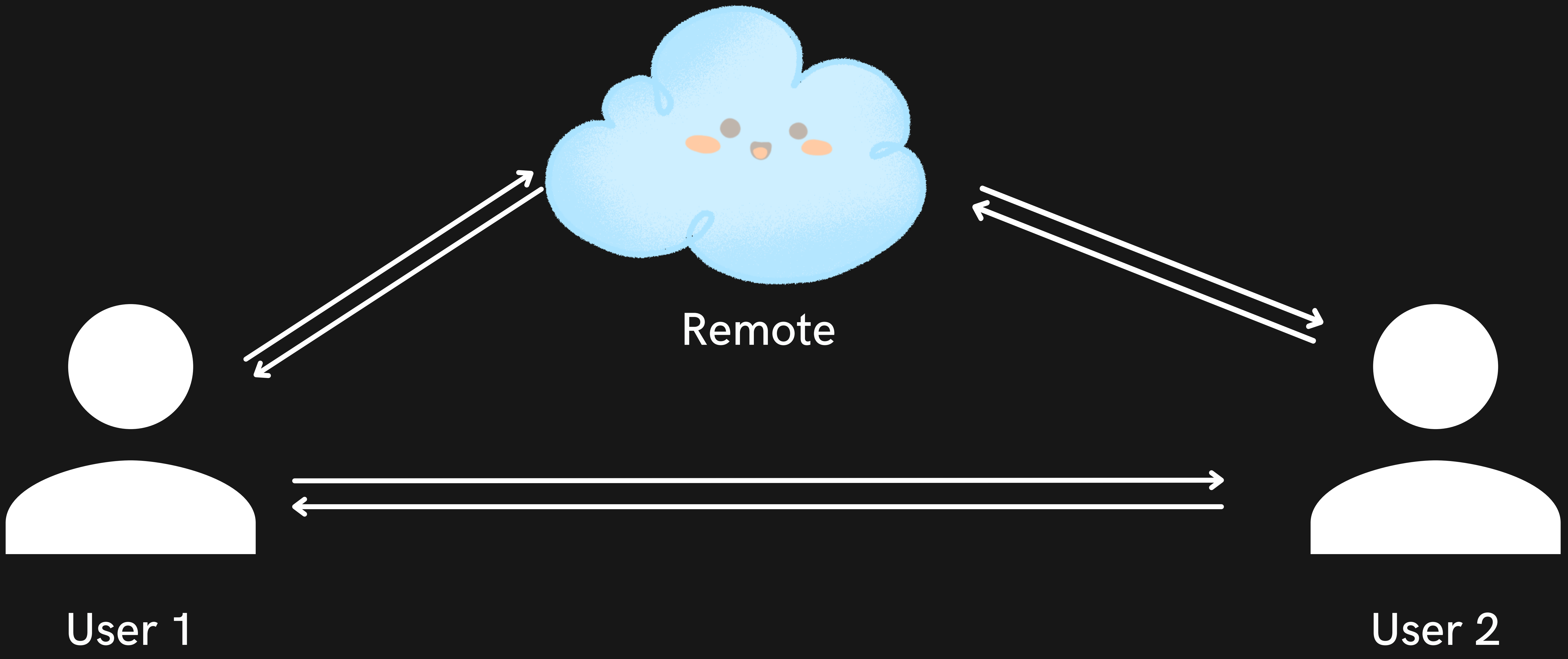
1. A way to manage files and directories
2. Track changes over time
3. Go back to previous version

Version Control System (VCS) is not exclusive to a codebase or coding project

Git

1. Created to keep track of the Linux kernel changes
2. A command line Version Control System
3. Pairs up with online tools like GitHub and Bitbucket to share the changes with others
4. A distributed VCS, so no single point of failure

Git



Remote

User 1

User 2

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How it works

1. Initialise the repository
2. Modify the source code
3. Track the changes (staging)
4. Create a snapshot (commit)
5. Make it available to the world (push)

Workflow

Project Folder

Workflow

Project Folder

Git Repository
(.git)

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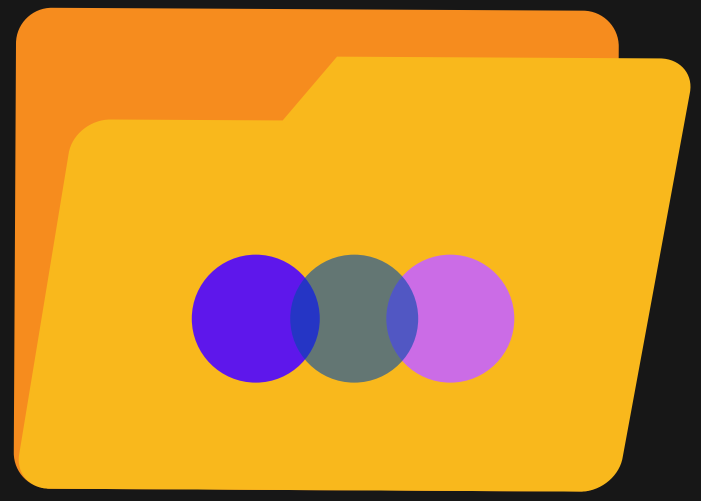
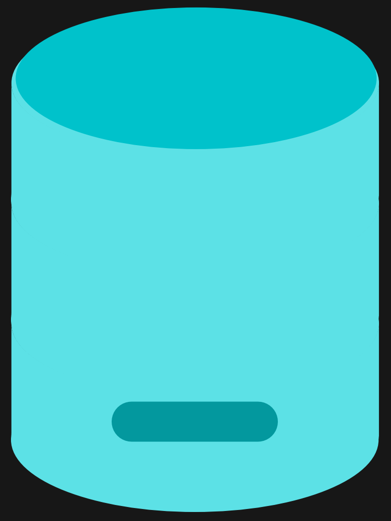
Workflow

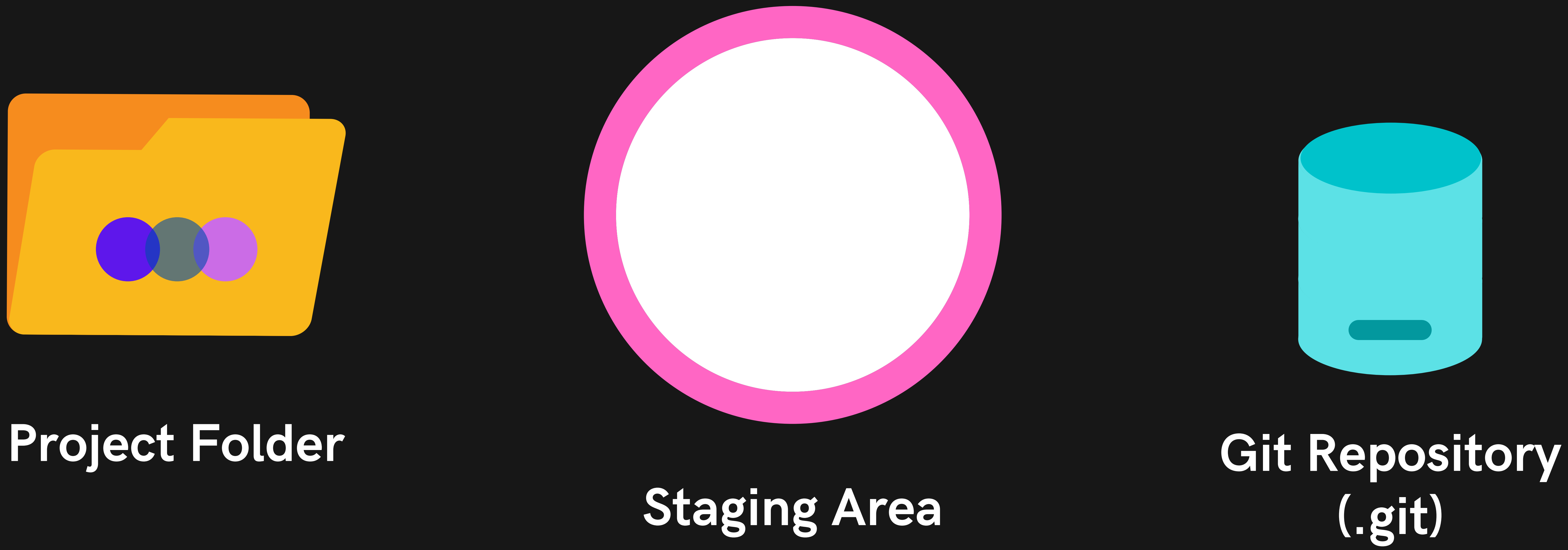


Project Folder



Git Repository
(.git)

Workflow

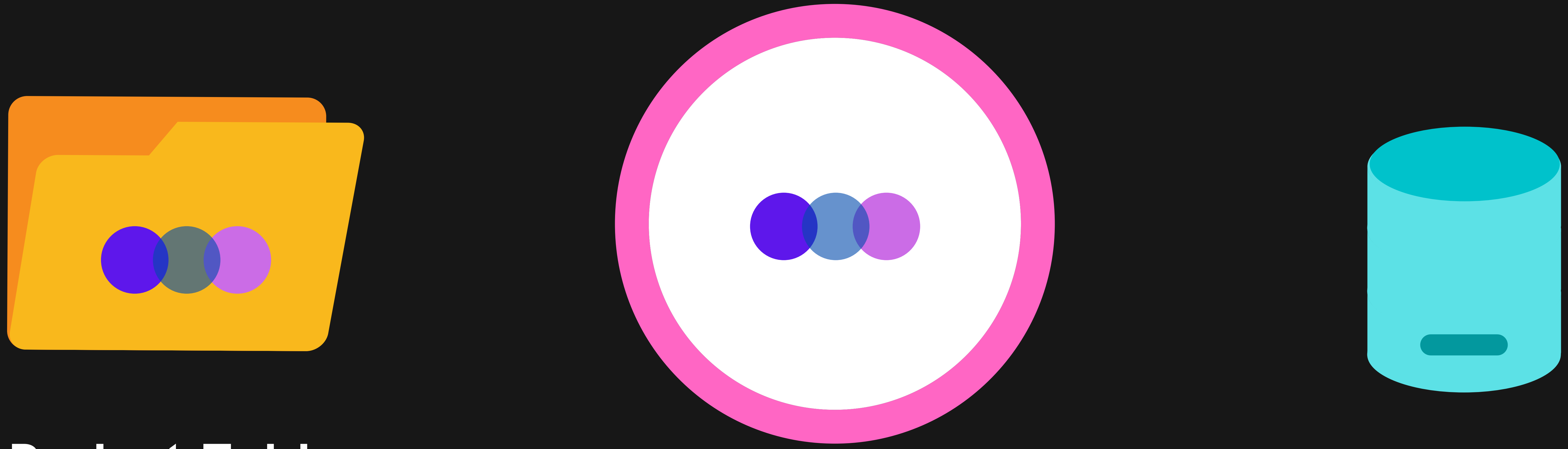


Project Folder

Staging Area

Git Repository
(.git)

Workflow

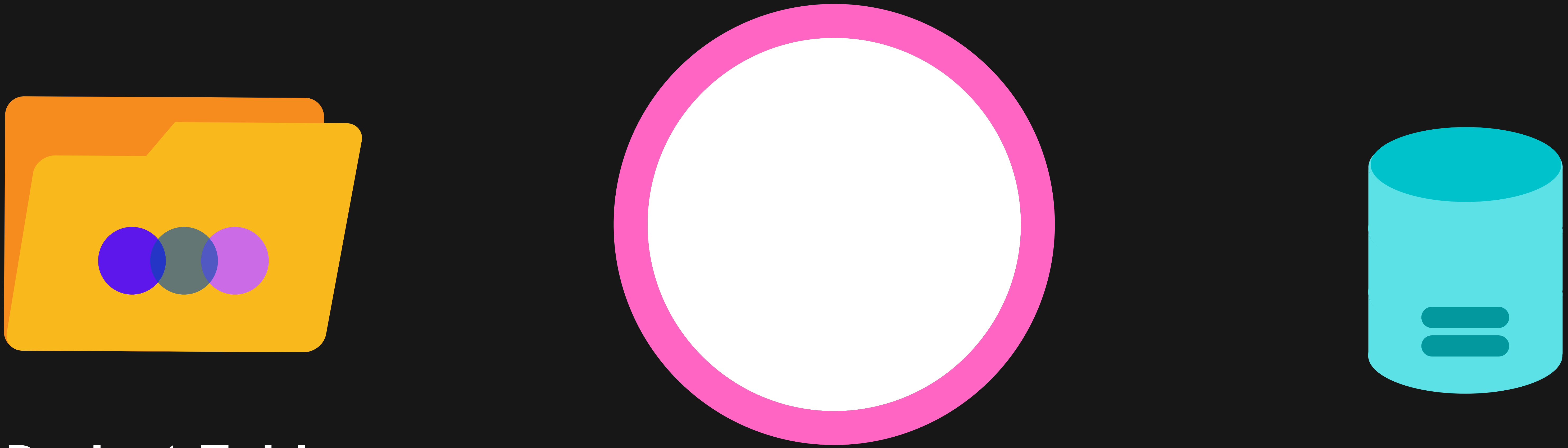


Project Folder

Staging Area

Git Repository
(.git)

Workflow



Project Folder

Staging Area

Git Repository
(.git)

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Prerequisites

1. GitHub Account
2. Git installed on your PC
3. Configure Git

```
git config --global user.name "Paras Gupta"
git config --global user.email "parasg1999@gmail.com"
```

4. Link to GitHub using Personal Access Token

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Getting started!

1. Initialise a repository on your PC
2. Make changes
3. Review the changes
4. Commit the new version
5. Create a repository on GitHub
6. Push the current version

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```
git init
```

Getting started!

1. Initialise a repository on your PC
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```
git status
git diff
```

Getting started!

1. Initialise a repository on your PC
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```
git add filename
git commit -m "Created
README.md"
```

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Getting started!

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```
git push origin master
```

Collaboration using GitHub

1. Fork the repository
2. Clone it!
3. Make changes
4. Review the changes
5. Commit the new version
6. Push to your remote repository
7. Create a Pull Request

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```
git clone <url>
```

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Collaboration using GitHub

1. Fork the repository
2. Clone it!
3. Make changes
4. Review the changes
5. Commit the new version
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```
git commit -m "message"
```

Collaboration using GitHub

1. Fork the repository
2. Clone it!
3. Make changes
4. Review the changes
5. Commit the new version
6. Push to your remote repository
7. Create a Pull Request

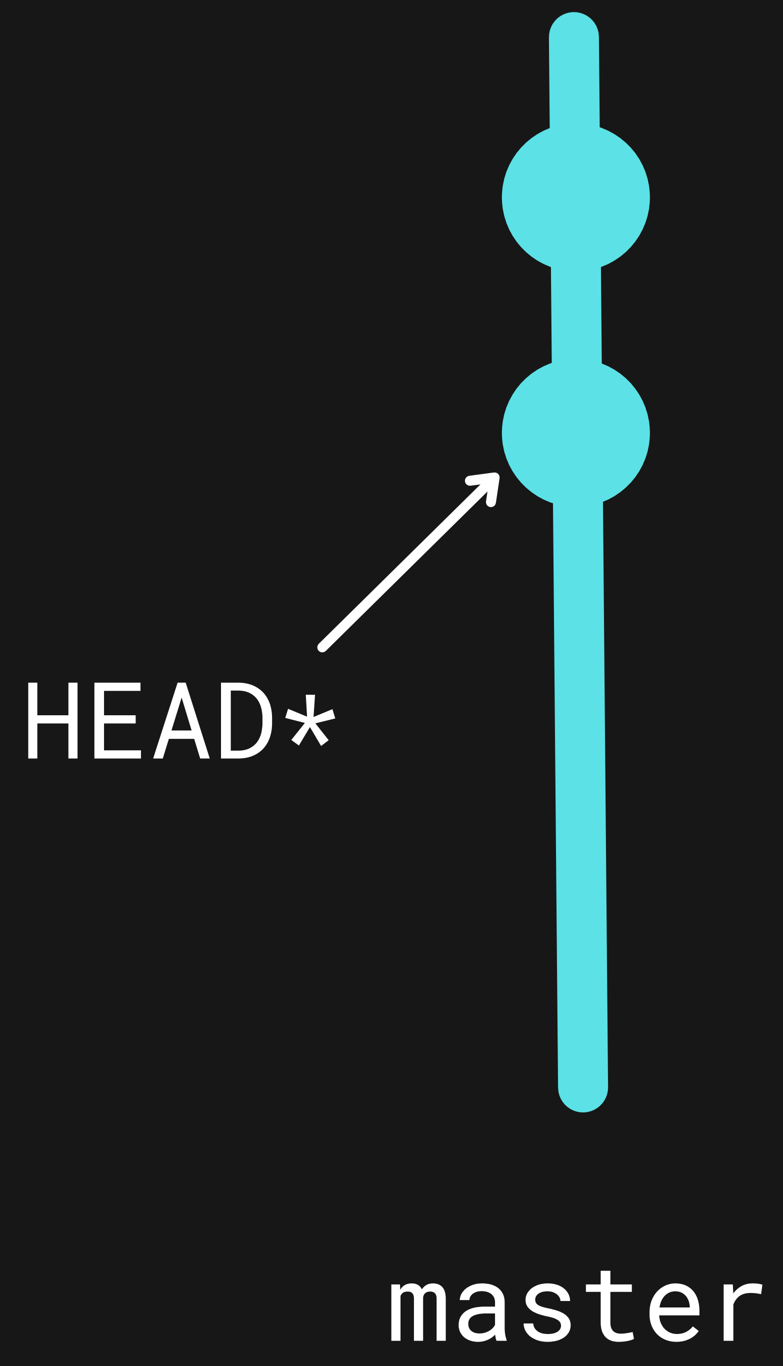
```
git remote add upstream <URL>
git push upstream master
```

Collaboration using GitHub

https://bit.ly/git-svpcet

(go to this link to see your changes)

Branches



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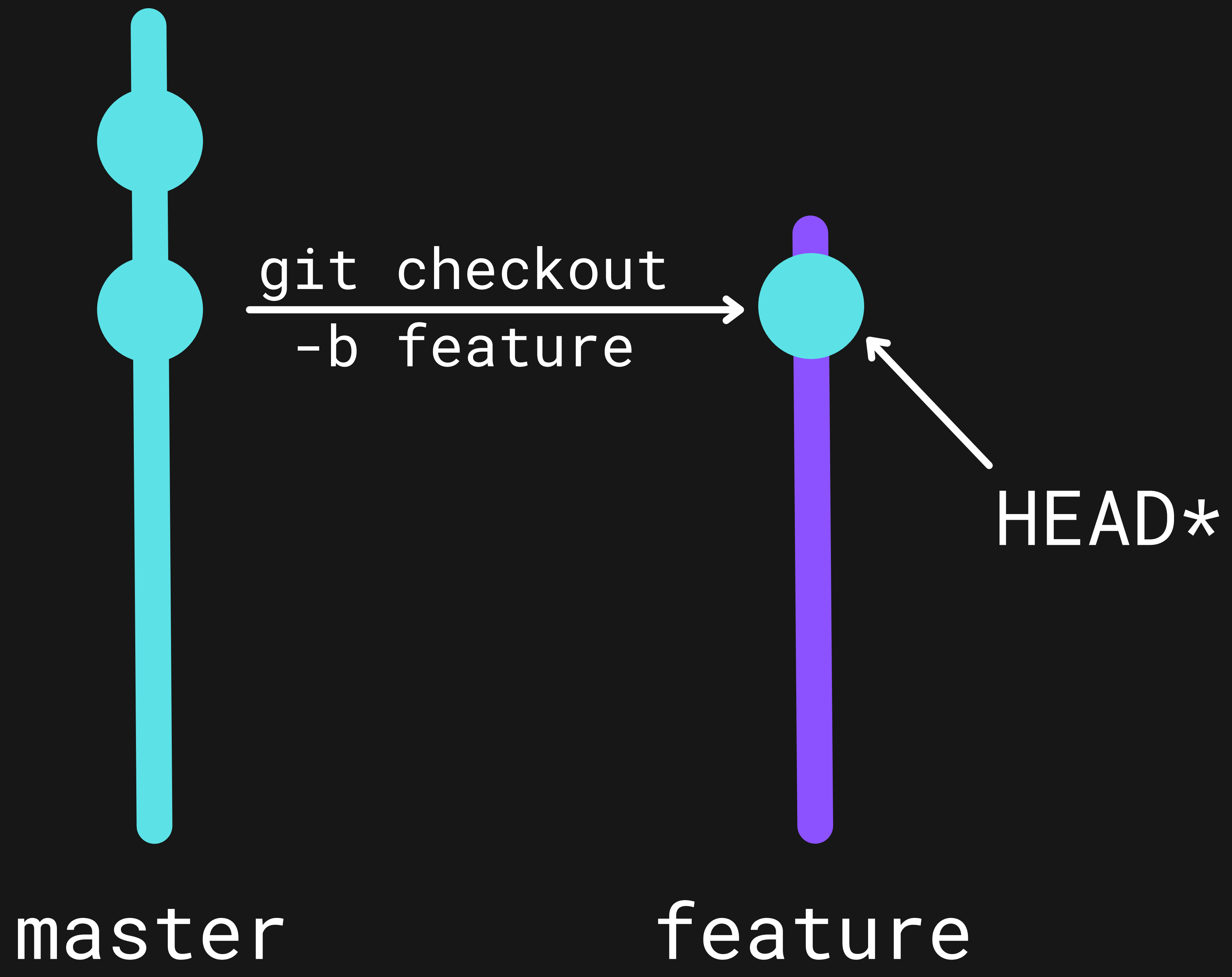
Branches



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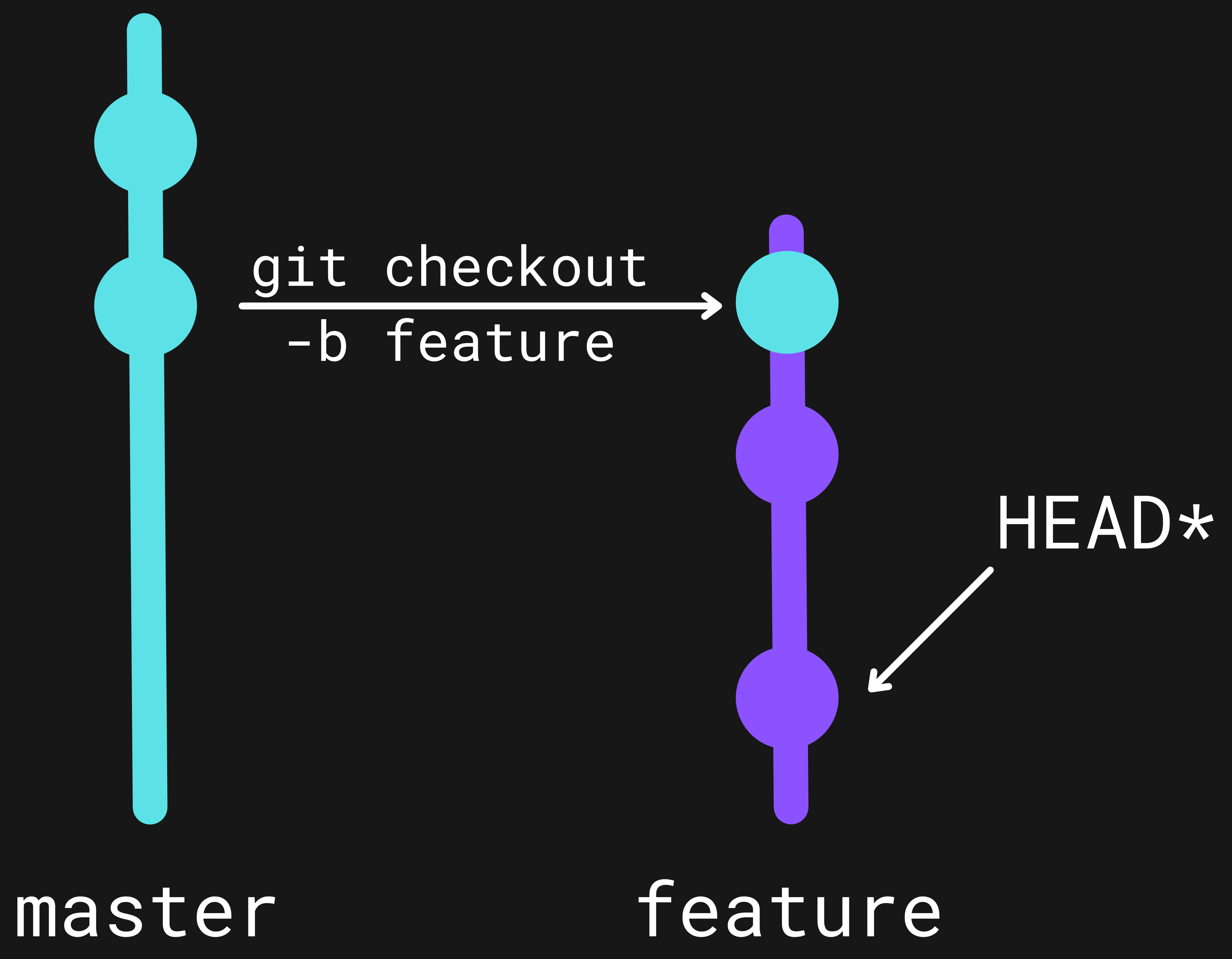
Branches



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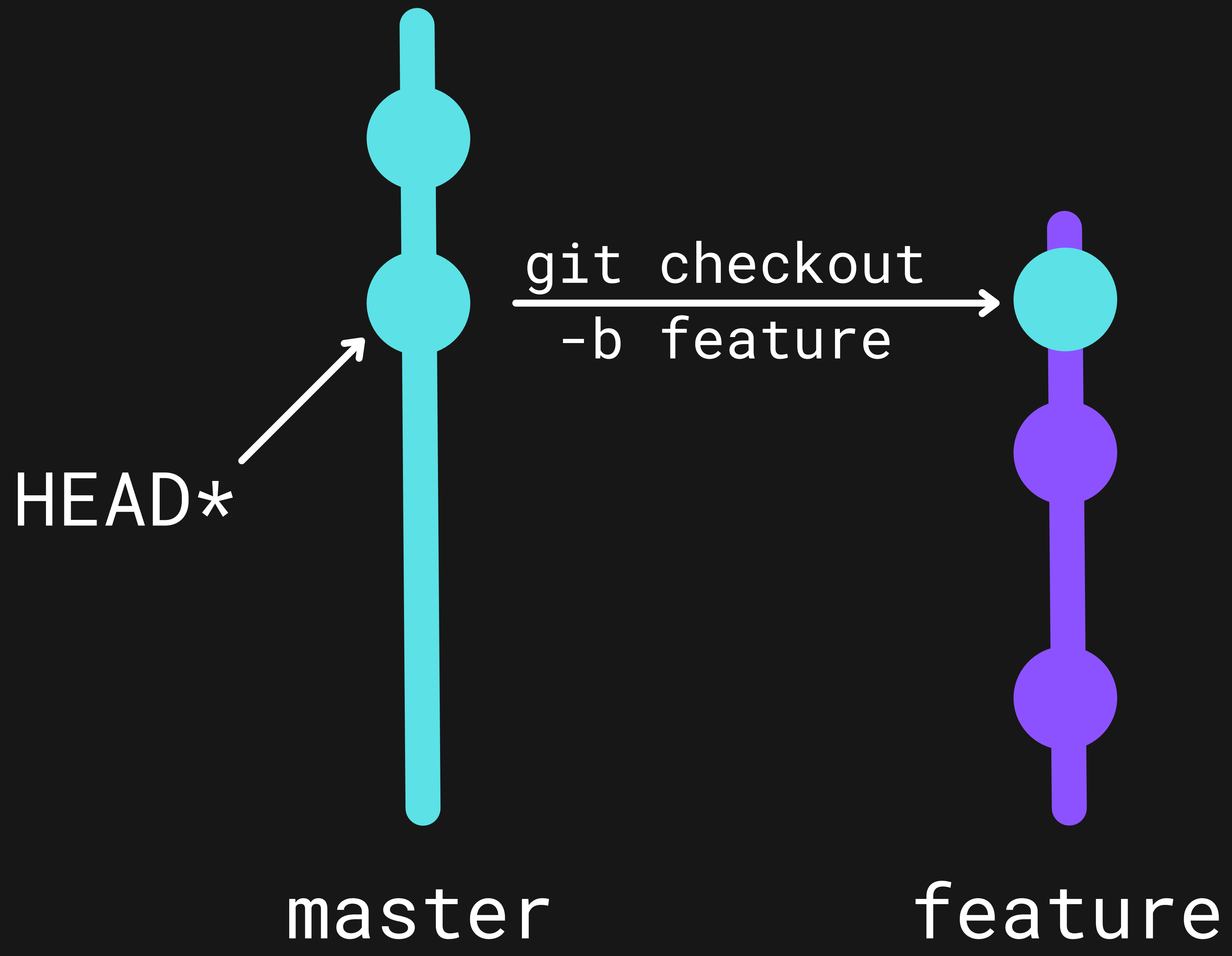
Branches



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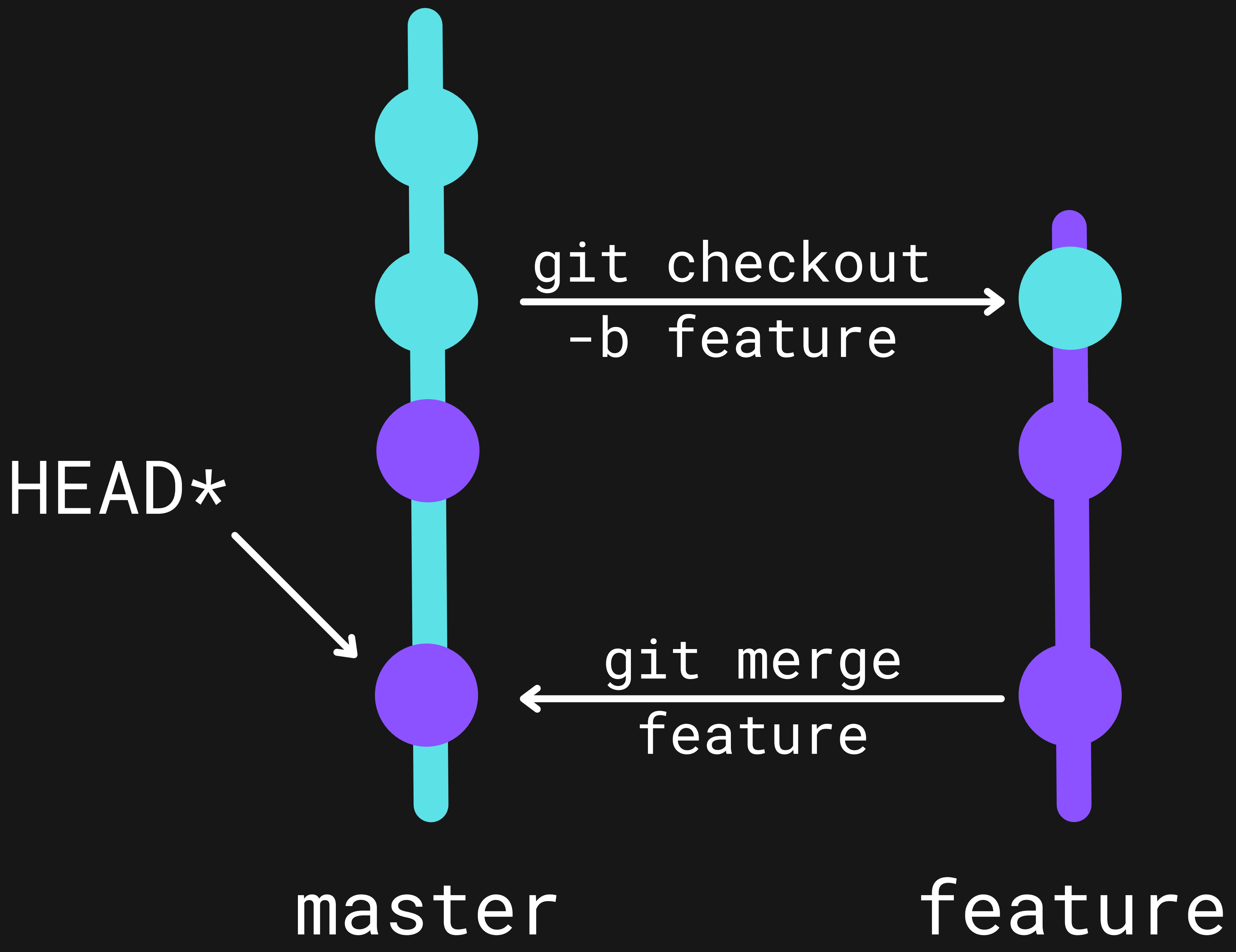
Branches



HEAD*

git checkout -b feature

git merge feature

master

feature

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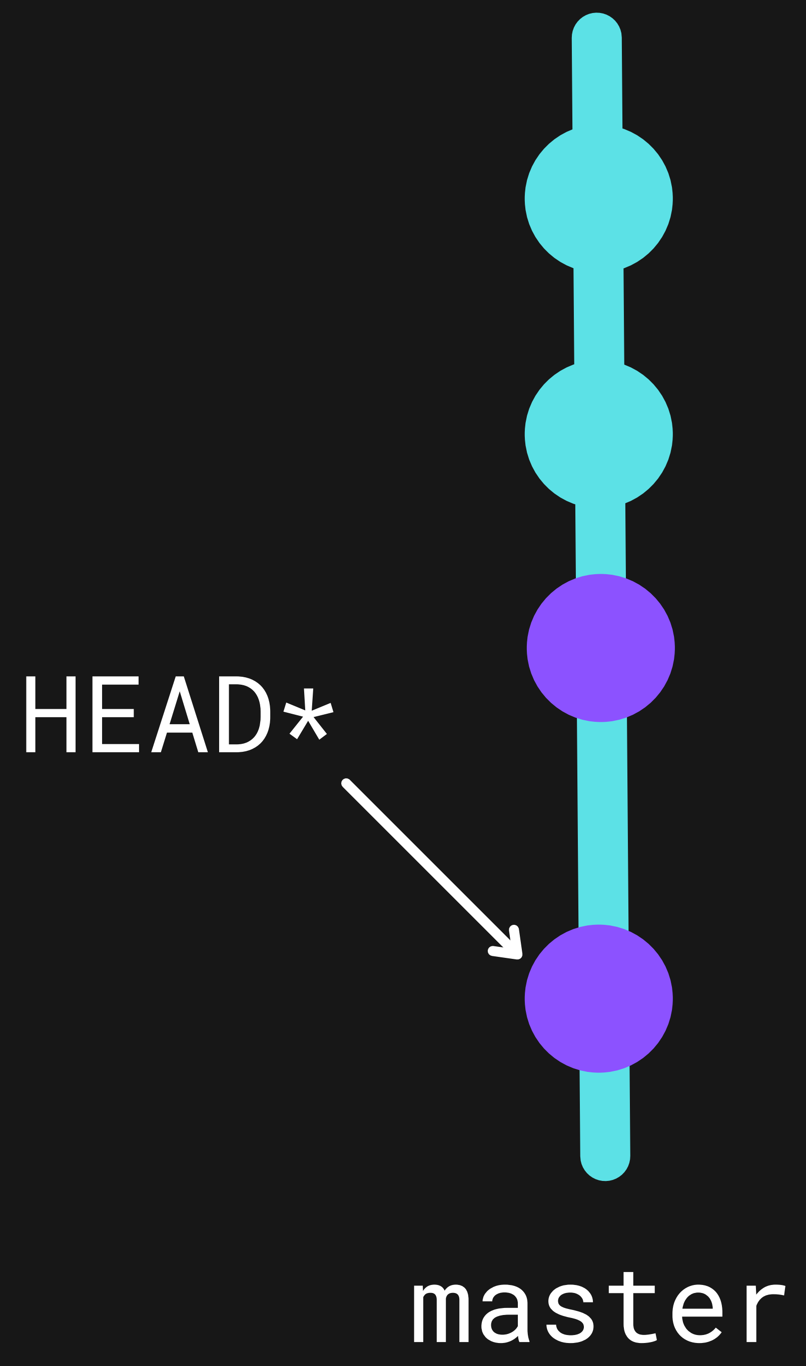
Branches



```
git branch -d feature
```

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CONNECT WITH ME !

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- parasg1999
- ✉ parasg1999@gmail.com