
Explain git log – View commit history.

`git log` is a command used to display the commit history of a Git repository. It shows a list of commits, starting with the most recent one, and provides useful information about each commit.

Basic Usage

bash

```
git log
```

This command will display:

- **Commit Hash (SHA):** A unique identifier for each commit.
- **Author:** The name and email of the person who made the commit.
- **Date:** The date and time the commit was made.
- **Commit Message:** The message describing the changes made in the commit.

Common Options for git log

You can customize the output of `git log` using various options:

1. View a Shorter Log

bash

```
git log --oneline
```

- Displays each commit on one line, showing only the abbreviated commit hash and the commit message.

2. Limit the Number of Commits

bash

```
git log -n 5
```

- Shows only the most recent 5 commits.

3. View Logs for a Specific File

bash

```
git log -- <filename>
```

- Displays commit history related to a specific file.

4. Show Commit Differences

bash

```
git log -p
```

- Displays the changes (diff) introduced in each commit.

5. View Logs with a Graph

bash

```
git log --graph --oneline
```

- Displays a visual representation of the branch structure alongside commit messages.

6. Filter Commits by Author

bash

```
git log --author="Author Name"
```

- Shows commits made by a specific author.

7. Search by Commit Message

bash

```
git log --grep="keyword"
```

- Displays commits where the commit message contains a specific keyword.

8. View Logs Within a Date Range

bash

```
git log --since="2 weeks ago" --until="yesterday"
```

- Displays commits within a specified time range.

Example Output

sql

```
commit 1a2b3c4d5e6f7g8h9i0j1k2l3m4n5o6p7q8r9s
Author: John Doe <john.doe@example.com>
Date: Tue Mar 26 14:12:45 2025 +0000
```

```
Fix bug in payment processing
```

`git log` is a powerful tool for tracking the history of your project, debugging issues, and understanding how changes were introduced.

how to see the log of a particular repository https://github.com/Nagavarunkumarparvathareddy/Python_Codochef.git

To view the Git log of a particular repository like the one at the URL you provided, follow these steps:

Step 1: Clone the Repository (If Not Already Cloned)

If you don't have the repository on your local machine, clone it using:

```
bash
```

```
git clone https://github.com/Nagavarunkumarparvathareddy/Python_Codochef.git
```

This will download the repository to your local system.

Step 2: Navigate to the Repository

Change to the repository directory:

```
bash
```

```
cd Python_Codochef
```

Step 3: View the Commit Log

Once inside the repository, run:

```
bash
```

```
git log
```

This will display the commit history, including the commit hash, author, date, and commit message.

Additional Options for Viewing Logs

- **Compact View:**

```
bash
```

```
git log --oneline
```

This shows each commit in a single line using a shorter format.

- **View Specific File History:**

```
bash
```

```
git log -- <filename>
```

Example:

```
bash
```

```
git log -- main.py
```

- **Graph View:**

```
bash
```

```
git log --graph --oneline
```

Displays a graphical representation of the commit history.

- **Filter by Author:**

```
bash
```

```
git log --author="Author Name"
```

- **Show Commit Differences:**

```
bash
```

```
git log -p
```

Displays detailed changes introduced in each commit.
