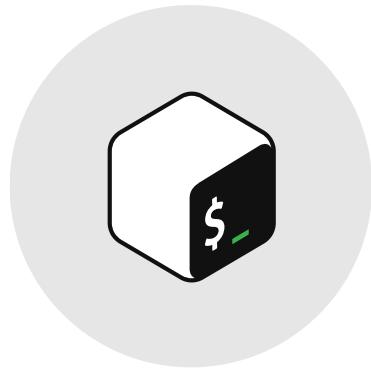


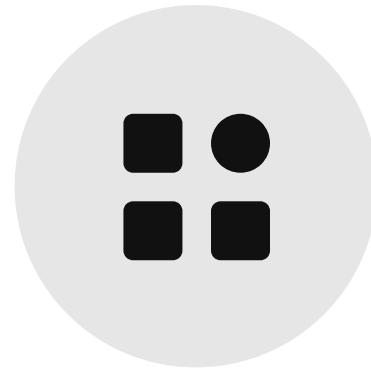
Module 1



Terminal Basics



Version Control



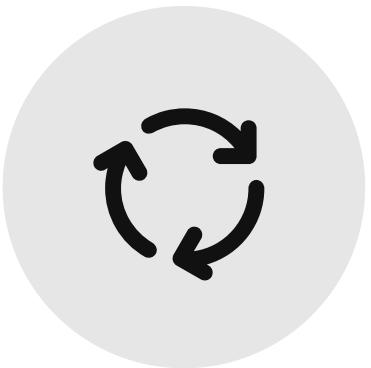
Version Control System



Linus Torvalds & Git



3 Stage Architecture



Life Cycle



Configuring Git

Terminal

 MINGW64:/c/Users/ashis

X + ▾

- □ X

ashis@DESKTOP-N09PGF5 MINGW64 ~

\$ |

Let's Install Git

Basic Commands

Basic Commands

- `pwd`
- `cd`
- `ls`
- `clear`
- `mkdir`
- `touch`
- `rmdir`
- `rm`
- `cp`
- `mv`
- `cat`

pwd

- Prints the current directory we're in.
- It's like asking, "Where am I in my computer?"

pwd

/home/ashish/documents

cd

- Changes the directory, like moving to a different folder.

cd pictures

cd ..

ls

- Lists the files and folders in our current directory.

ls

file1.txt file2.txt my_folder

clear

- Clears the terminal screen.

clear

mkdir

- Creates a new folder.

mkdir projects

mkdir folder1 folder2

touch

- Creates a new empty file.

touch notes.txt

touch index.html app.js

rmdir

- Removes an empty folder.

rmdir folder

rmdir folder1 folder2

rm

- Deletes files or folders.

rm file1.txt

rm file1 file2

rm -rf folder

cp

- Copies files or folders.

```
cp file.txt copy.txt
```

```
cp file.txt /ashish/docs/
```

mv

- Moves or renames files.

mv file.txt projects

mv file.txt notes.txt

mv folder1 folder2

mv file1 file2 folder

cat

- Displays the content of a file.

cat notes.txt

I hope you are fine there!

Warmup 1 🌶

Warmup 1 ↩

Create the following directory structure:

[wup1]

- **readme.txt**
- [projects]
 - [data-analysis]
 - [scripts]
 - **clean.py**
 - **analyze.py**
 - **visualize.py**
 - [data]
 - **raw.csv**

Contd..

Warmup 1 ↩

Copy the file named “***clean.py***” to the **[data]** folder.

[wup1]

- **readme.txt**
- **[projects]**
 - [data-analysis]**
 - **[scripts]**
 - **clean.py**
 - **analyze.py**
 - **visualize.py**
 - [data]**
 - **raw.csv**

Contd..

Warmup 1 ↩

Make a copy of “***clean.py***” in the **[data]** folder named “***data.py***”.

[wup1]

- **readme.txt**
- **[projects]**
 - [data-analysis]**
 - **[scripts]**
 - **clean.py**
 - **analyze.py**
 - **visualize.py**
 - [data]**
 - **raw.csv**
 - **clean.py**

Contd..

Warmup 1 ↩

Delete the file “**clean.py**” from **[scripts]** folder.

[wup1]

- **readme.txt**
- **[projects]**
 - [data-analysis]**
 - **[scripts]**
 - **clean.py**
 - **analyze.py**
 - **visualize.py**
 - [data]**
 - **raw.csv**
 - **clean.py**
 - **data.py**

Contd..

Warmup 1 ↩

Delete the folder “[scripts]”.

[wup1]

- **readme.txt**
- **[projects]**
 - [data-analysis]**
 - **[scripts]**
 - **analyze.py**
 - **visualize.py**
 - [data]**
 - **raw.csv**
 - **clean.py**
 - **data.py**

Contd..

Warmup 1 ↩

Delete the folder “[***data-analysis***].”

[wup1]

- **readme.txt**
- [projects]
 - [**data-analysis**]
 - [**data**]
 - **raw.csv**
 - **clean.py**
 - **data.py**

Contd..

Warmup 1 ↩

Write your name in “**readme.txt**” and view the contents.

[wup1]

- **readme.txt**
- **[projects]**
 - **[data]**
 - **raw.csv**
 - **clean.py**
 - **data.py**

Version Control



Button

```
<button>Sign in</button>
```

Button.css

```
button {  
    background-color: #000;  
    padding: 0.45rem 1.5rem;  
    color: #fff;  
    border: none;  
    cursor: pointer;  
}
```

Sign in

Button.css

```
button {  
    background-color: #000;  
    padding: 0.45rem 1.5rem;  
    color: #fff;  
    border: none;  
    border-radius: 0.3rem;  
    cursor: pointer;  
}
```

Sign in

Button.css

```
button {  
    background-color: transparent;  
    padding: 0.45rem 1.5rem;  
    color: #000;  
    border: 2px solid #000;  
    border-radius: 0.3rem;  
    cursor: pointer;  
}
```

Sign in

Sign in

Sign in

Sign in

Sign in

Sign in

Sign in

Version 1

Sign in

Version 2

Sign in

Version 3

Sign in

Version 1

Sign in

Version 2

Sign in

Version 3



Sign in

Version 1



Sign in

Version 2

Sign in

Version 3

Sign in

Version 1

Sign in

Version 2

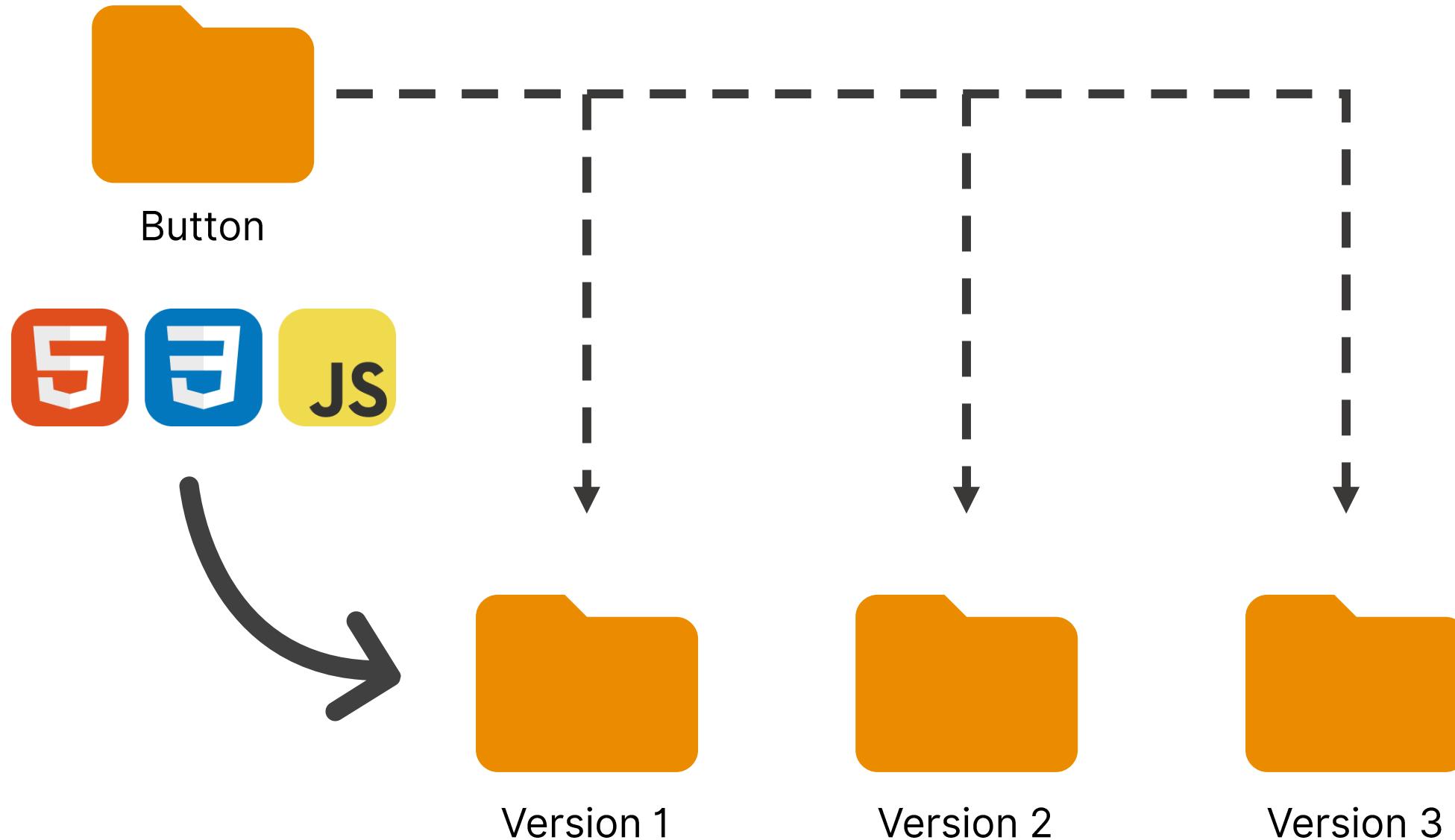
Sign in

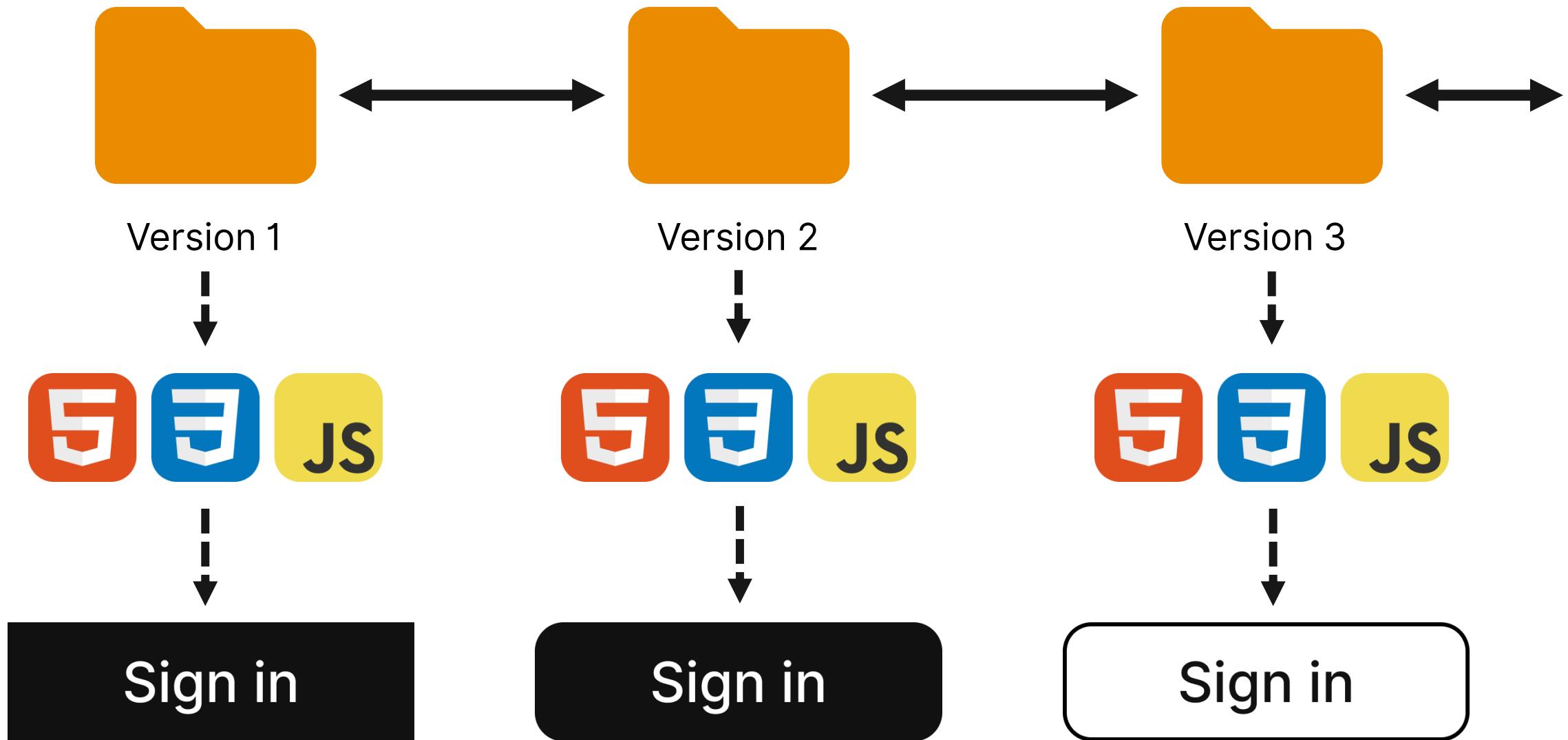
Version 3





Version Management





Warmup 2 ↗

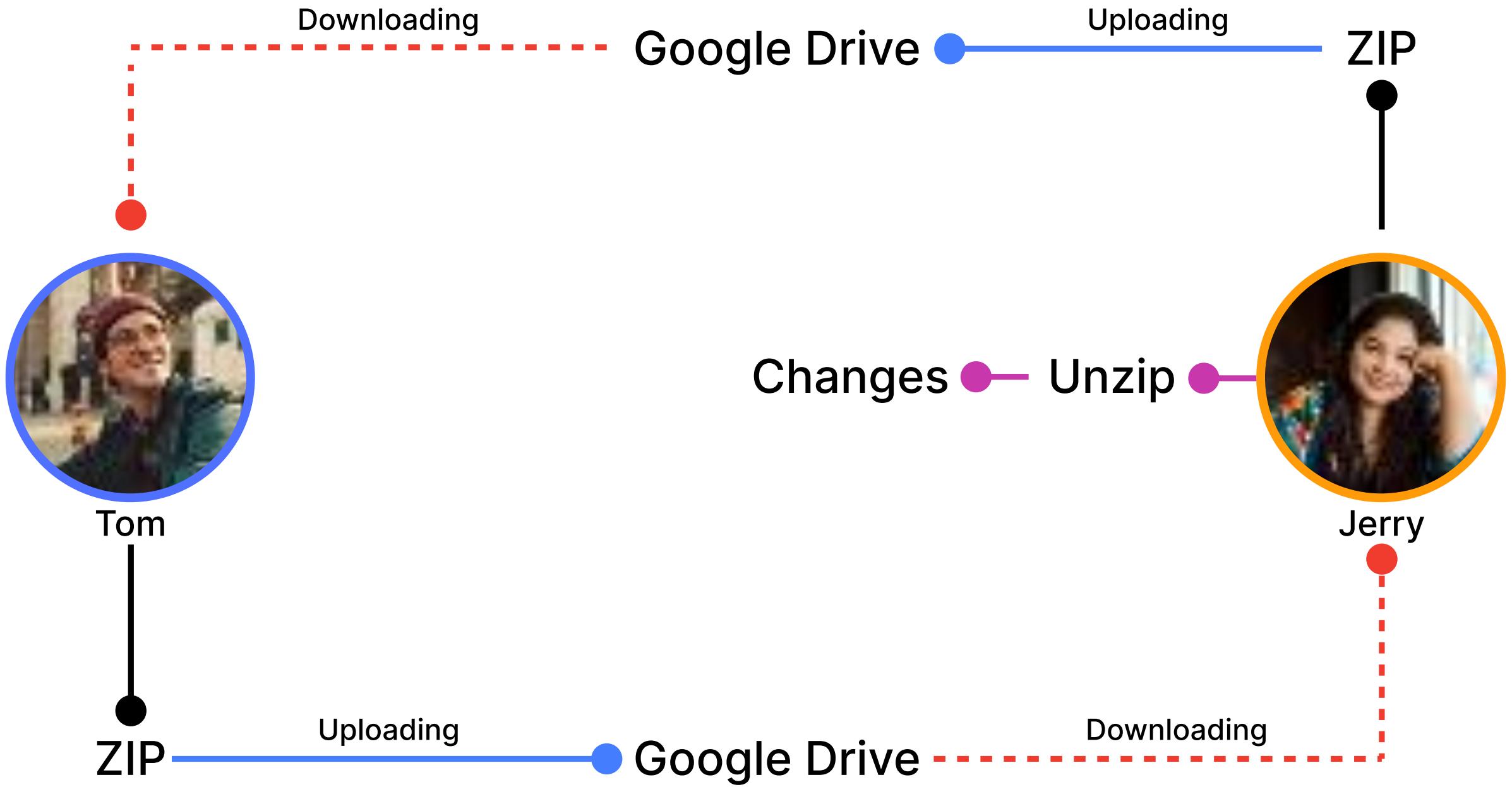
Warmup 2 ↪

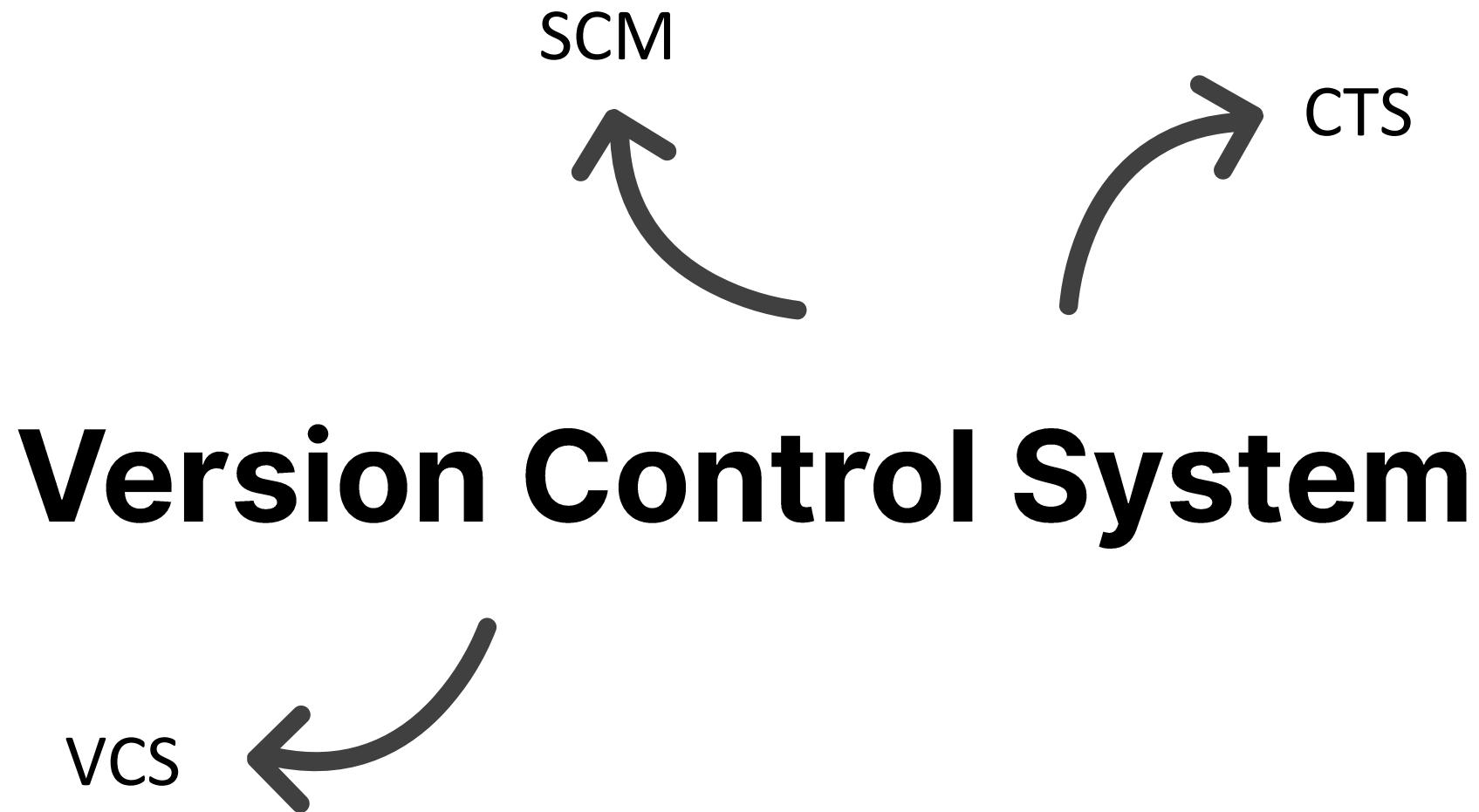
- Create a file named “***details.txt***”.
- Write a name and save the first version as “***version-1***”.
- Modify the file and write second name and save the file as “***version-2***”.
- Again, modify the file and write third name and save the file as “***version-3***”.
- Now, update one name and save the file as “***version-4***”.
- What challenges do you face?

Challenges

Challenges

- Folder Hell
- Memory Space
- Tracking Changes
- Collaboration





Version Control System

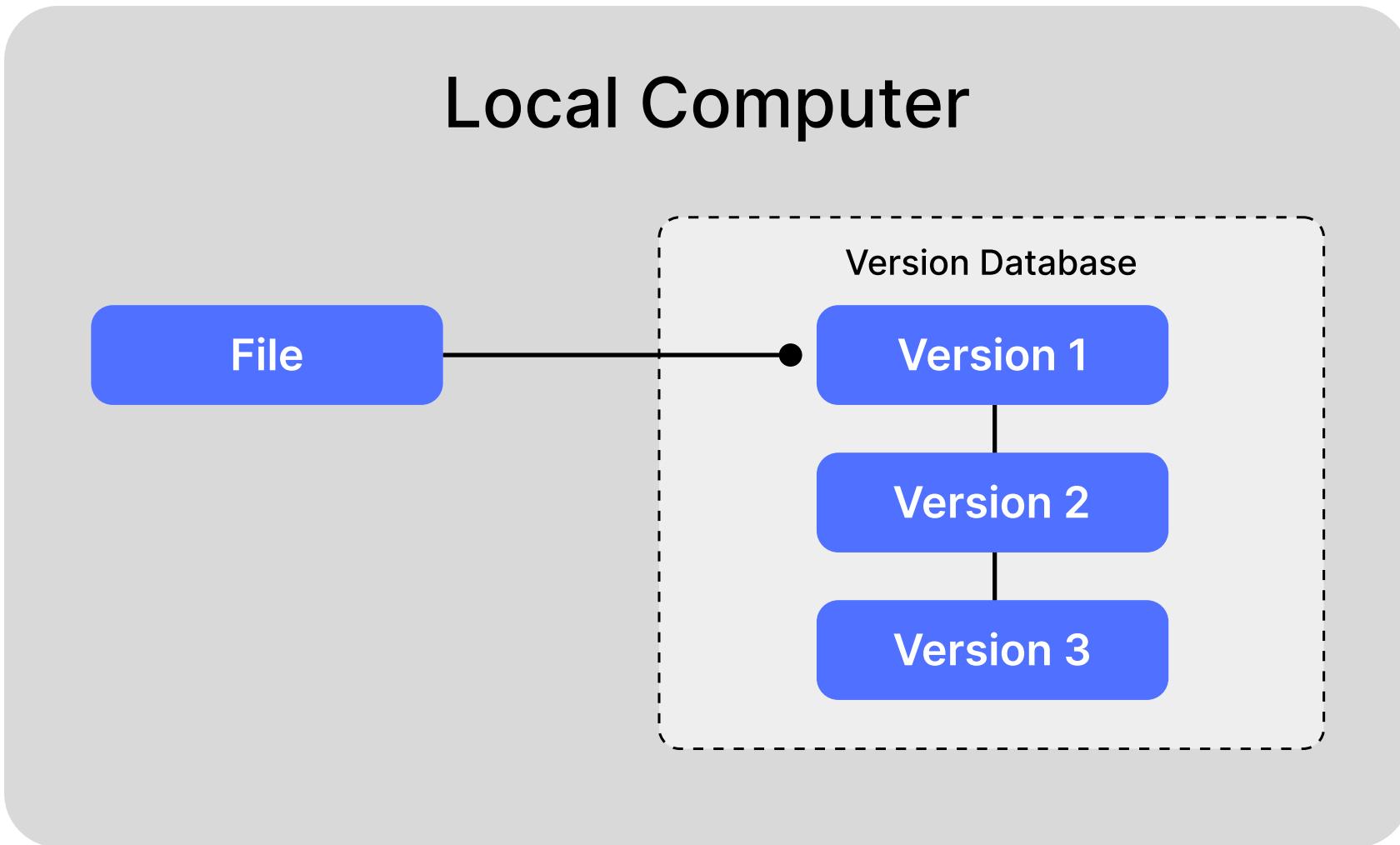
- A version control system (VCS) is a tool or software that helps us manage and keep track of changes made to files or projects over time.
- It allows us to:
 - Save multiple versions of our work.
 - Revisit or restore old versions if needed.
 - Collaborate over a project.

Types

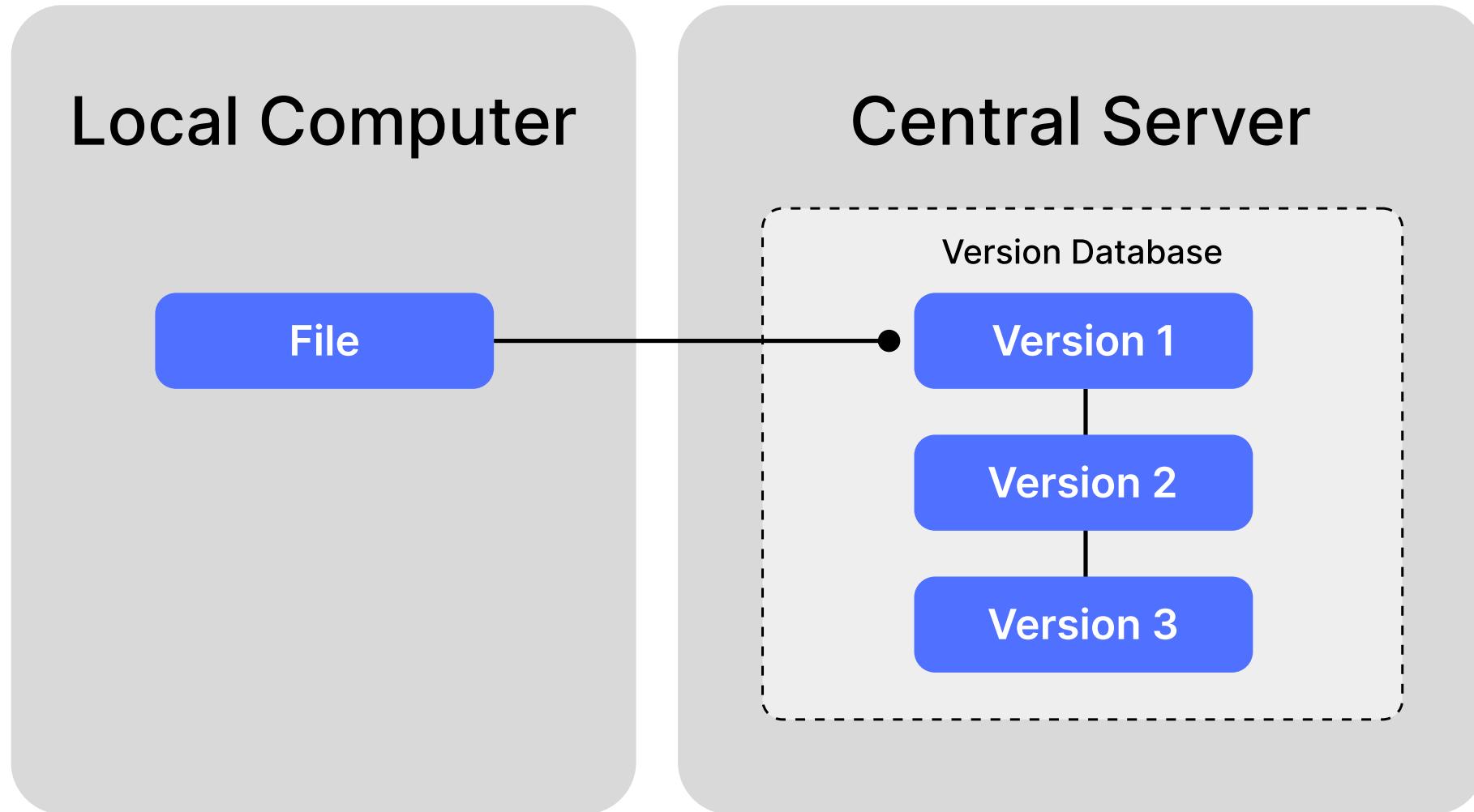
Types

- Localized Version Control
- Centralized Version Control
- Distributed Version Control

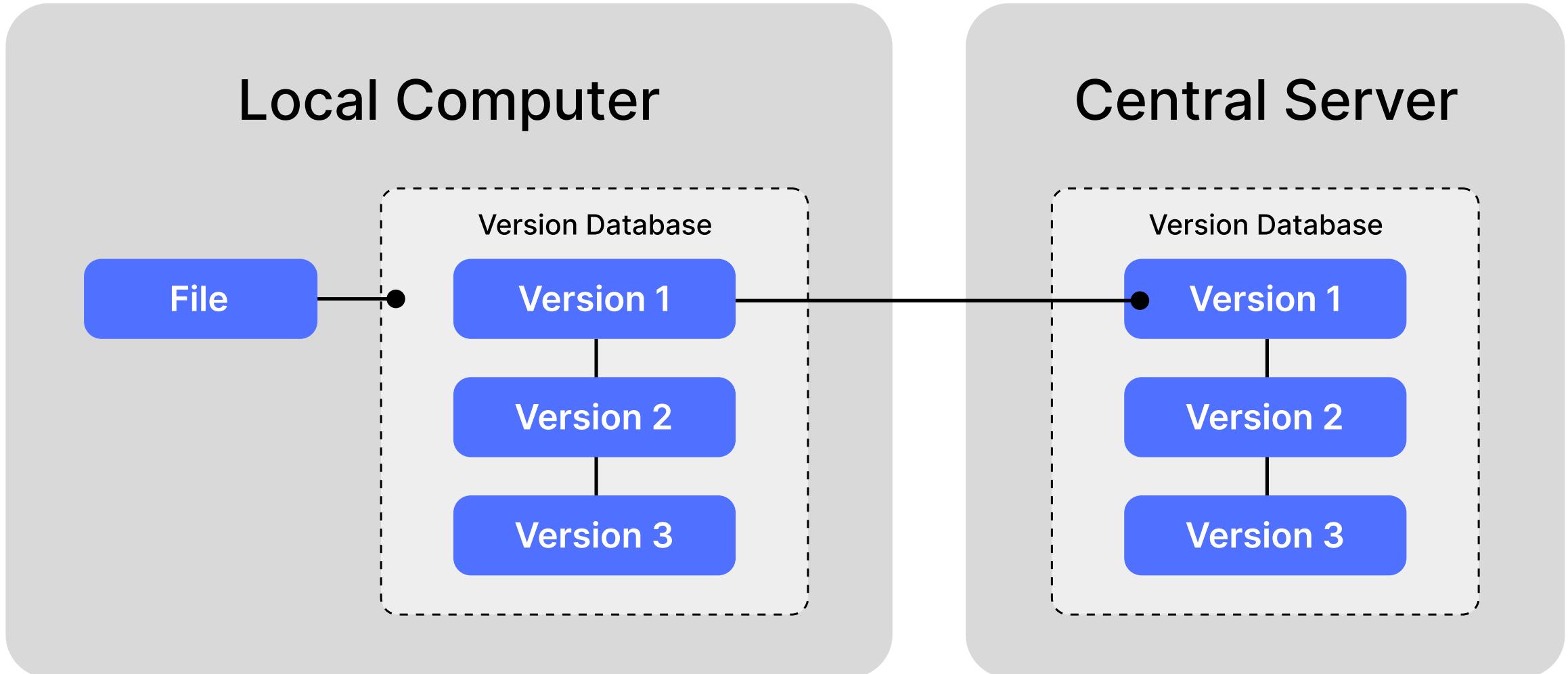
Localized Version Control



Centralized Version Control

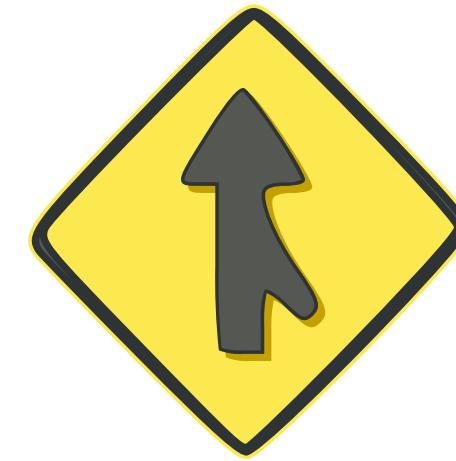


Distributed Version Control





mercurial



GNU Bazaar



git

Git



Simple is Beautiful.

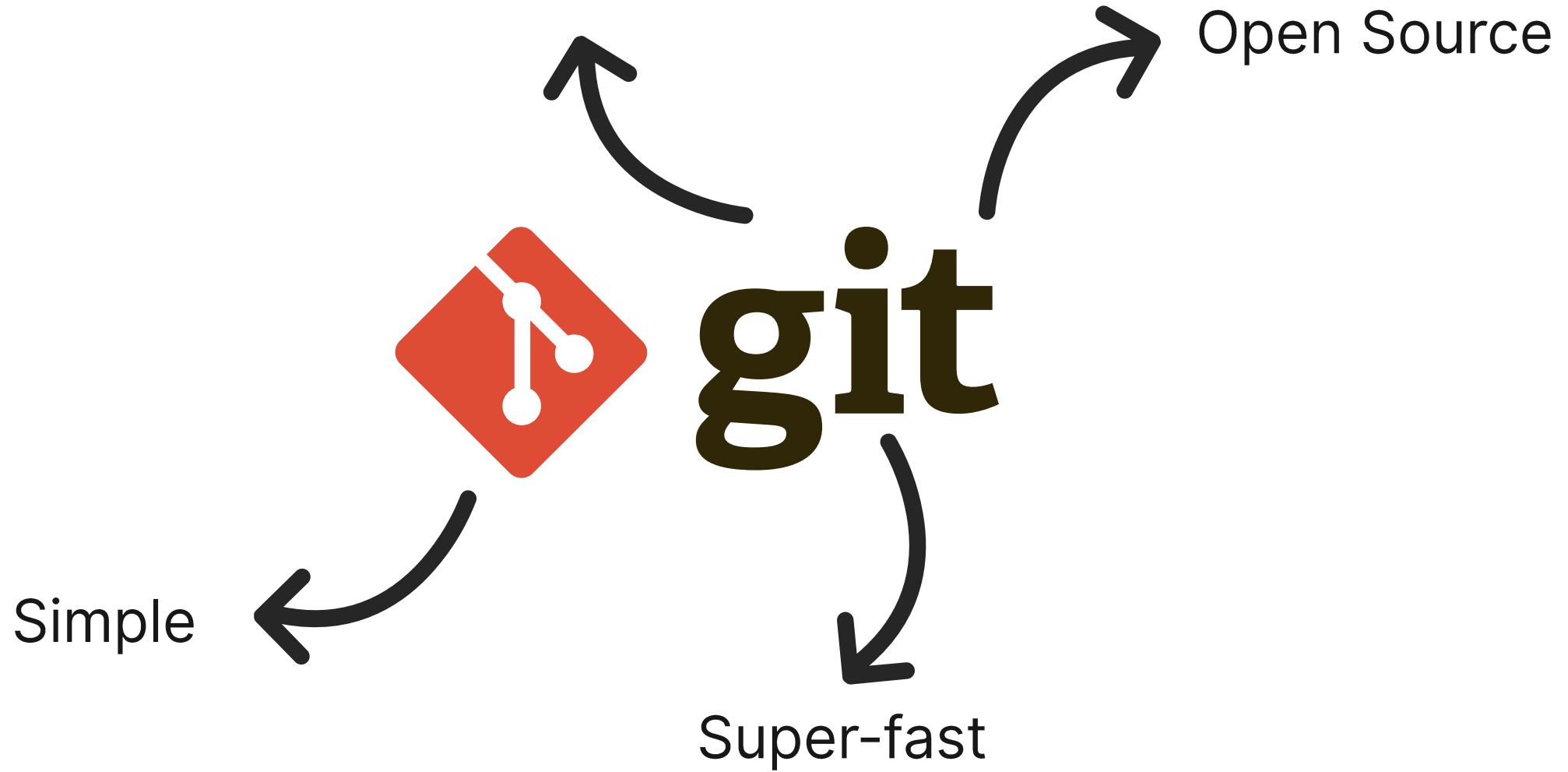
- Linus Torvalds

2000s



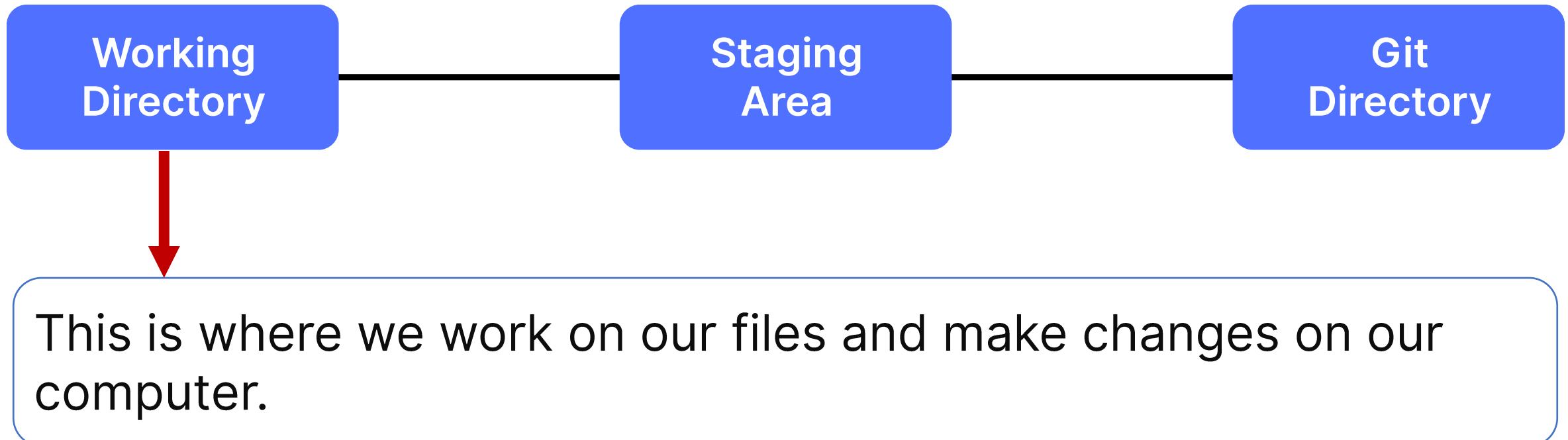
2005

Distributed Version Control



3 Stage Architecture

3 Stage Architecture

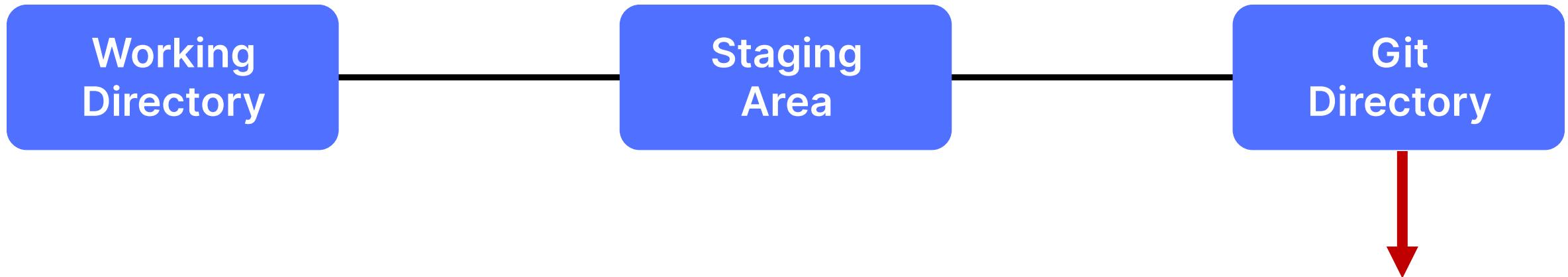


3 Stage Architecture

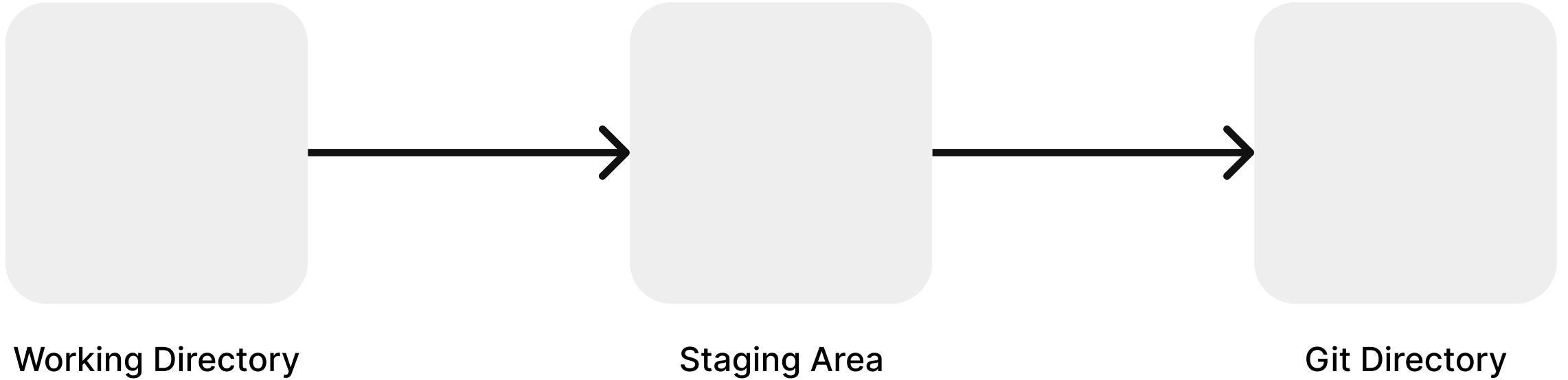


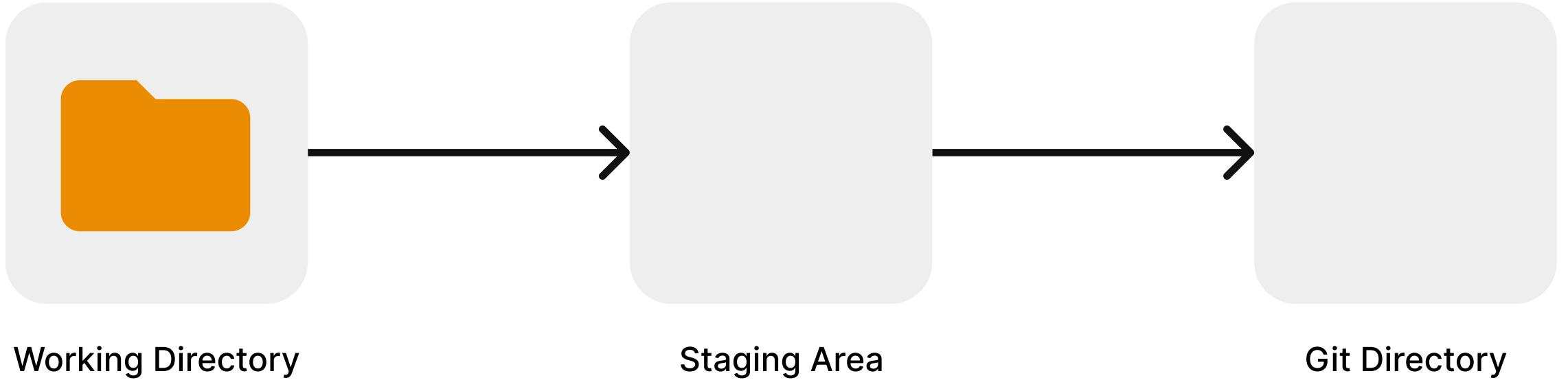
This is where we prepare and organize our changes before saving them permanently.

3 Stage Architecture

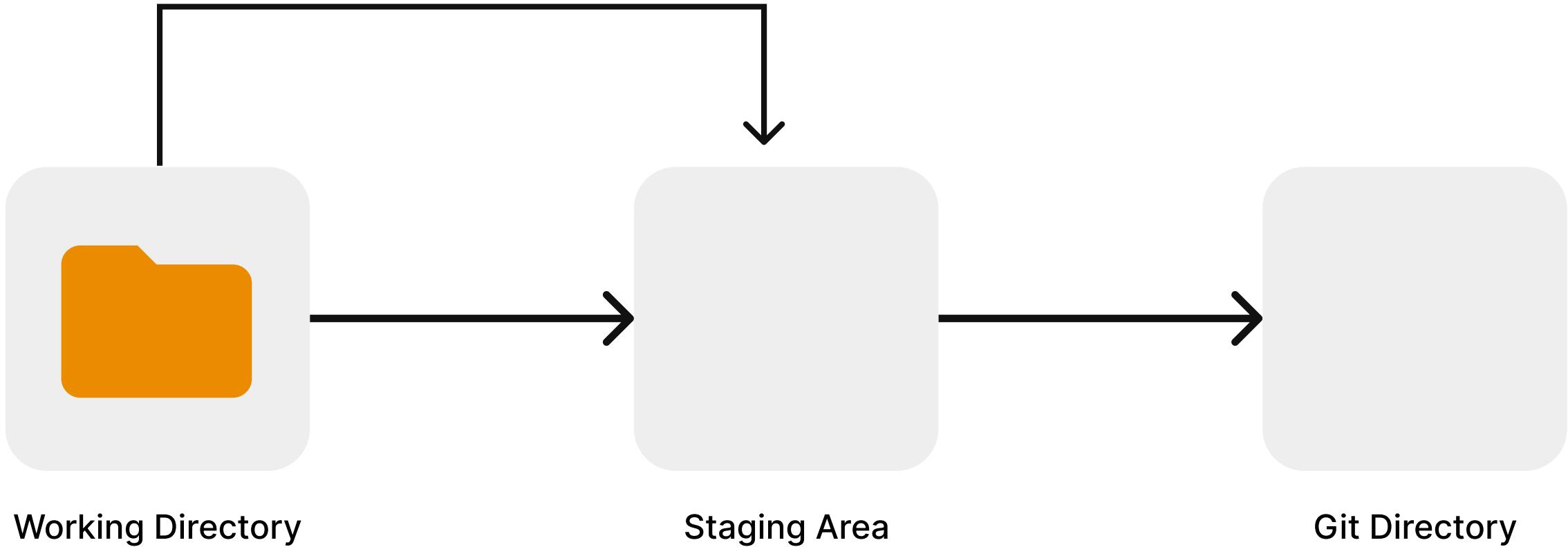


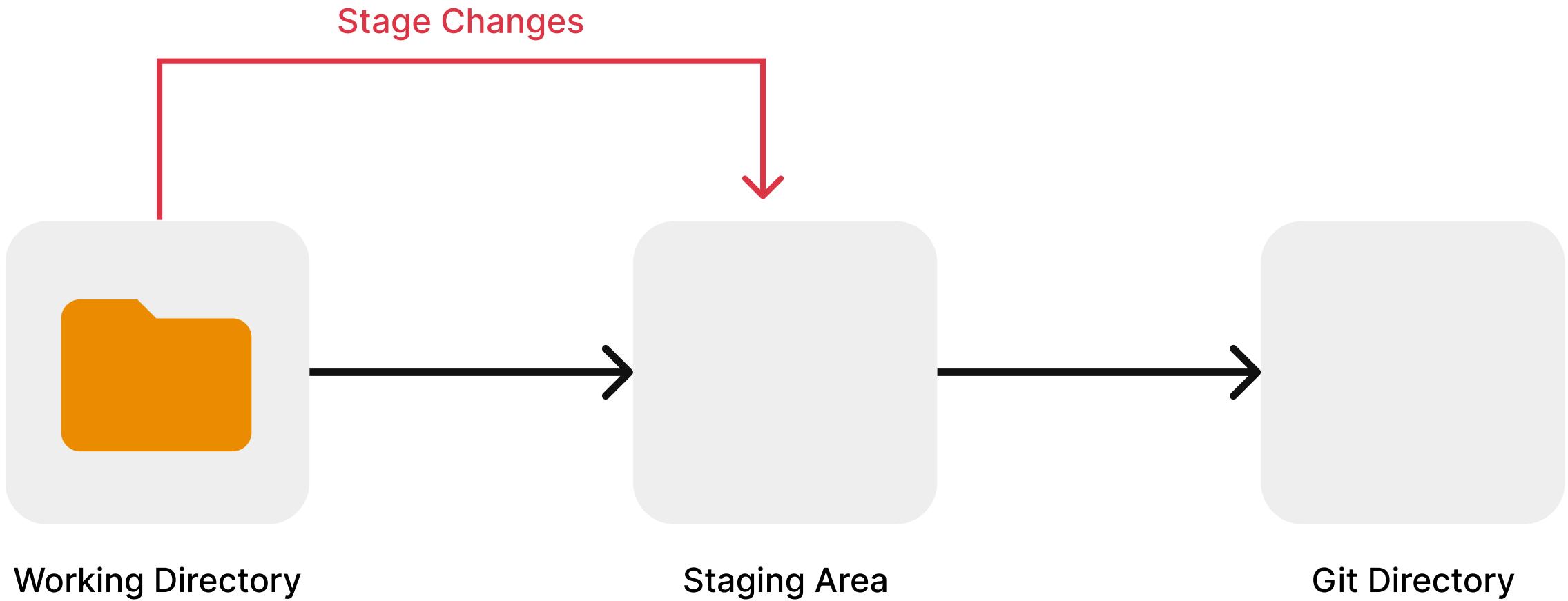
This is where Git stores the history of all our changes and versions.

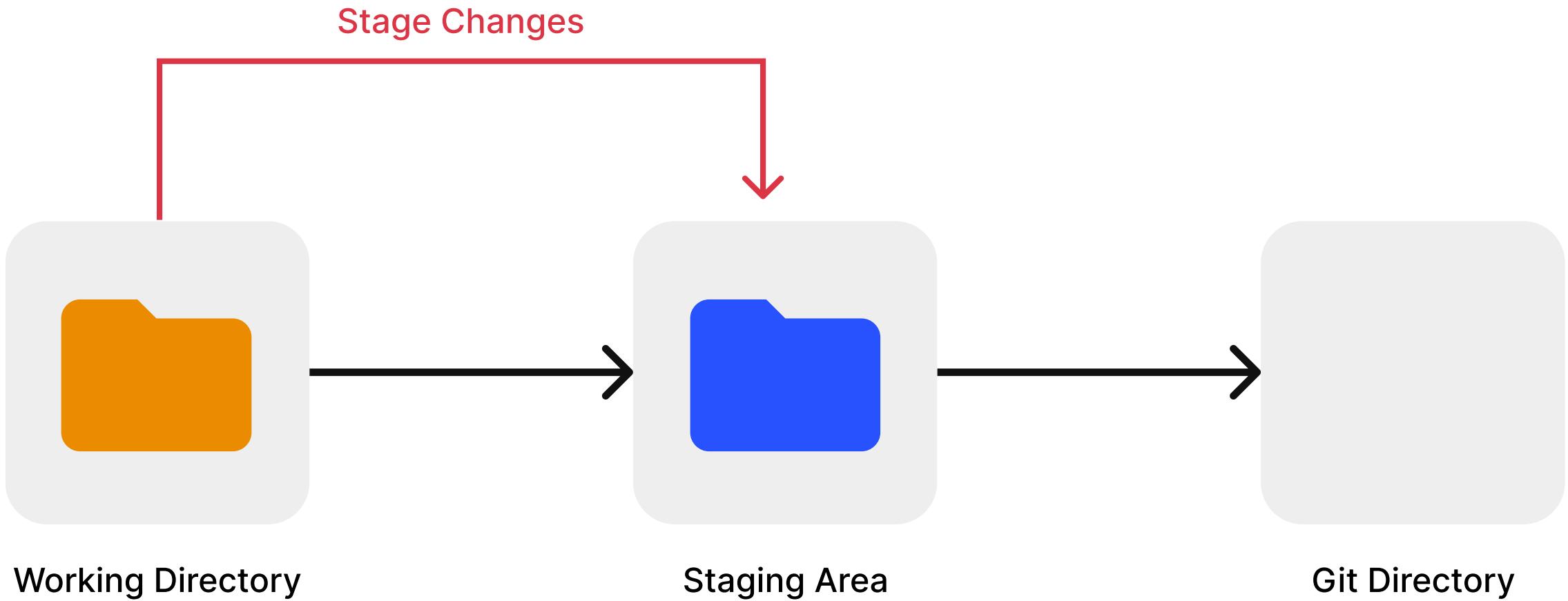


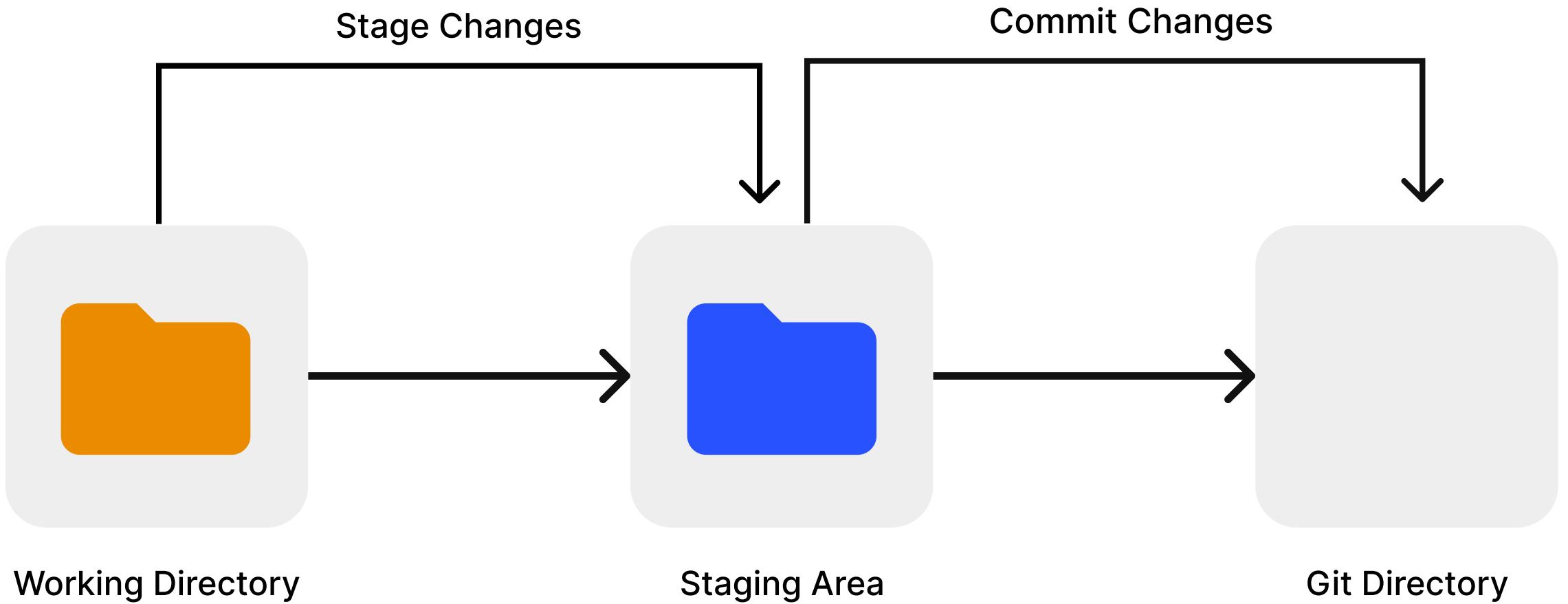


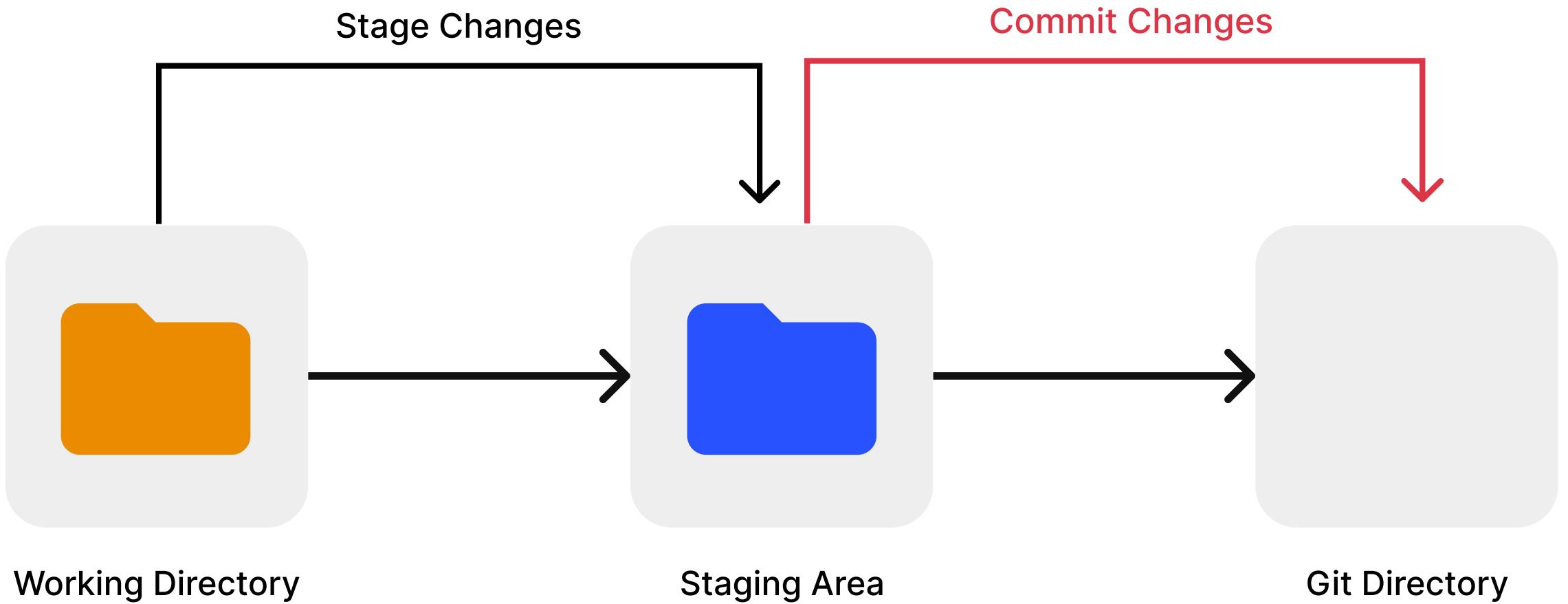
Stage Changes

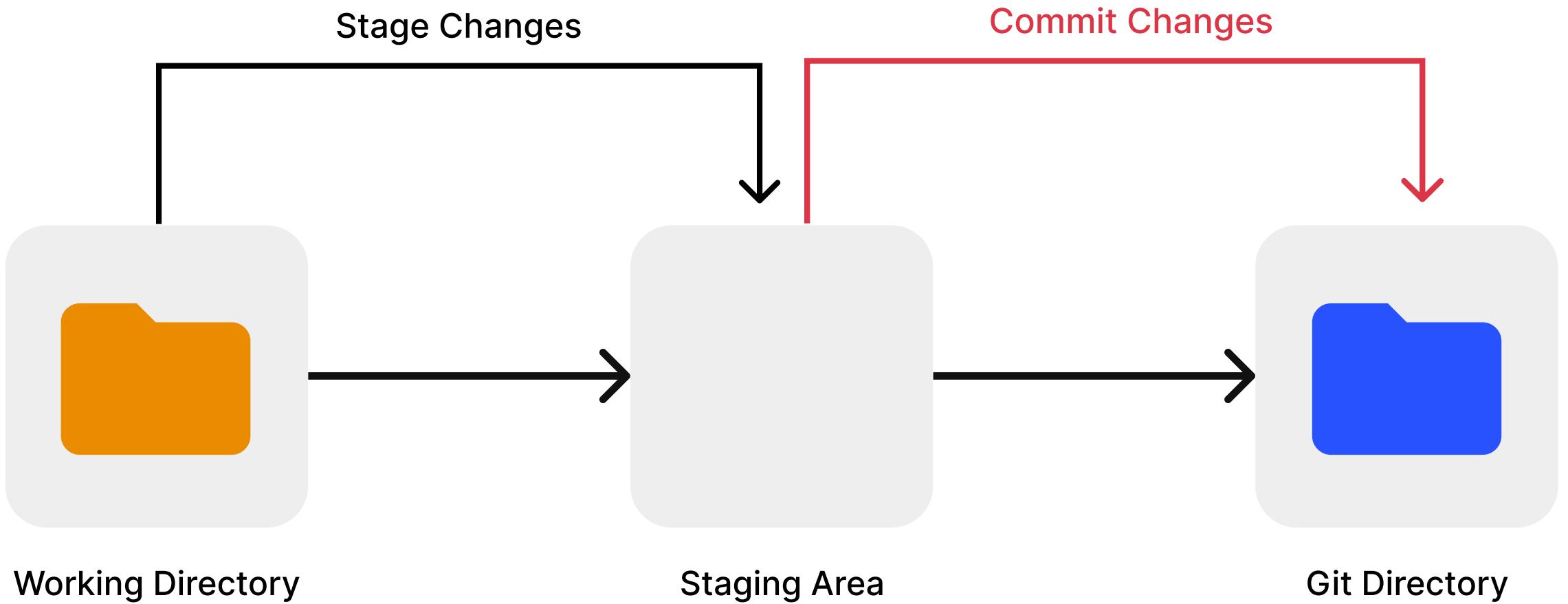


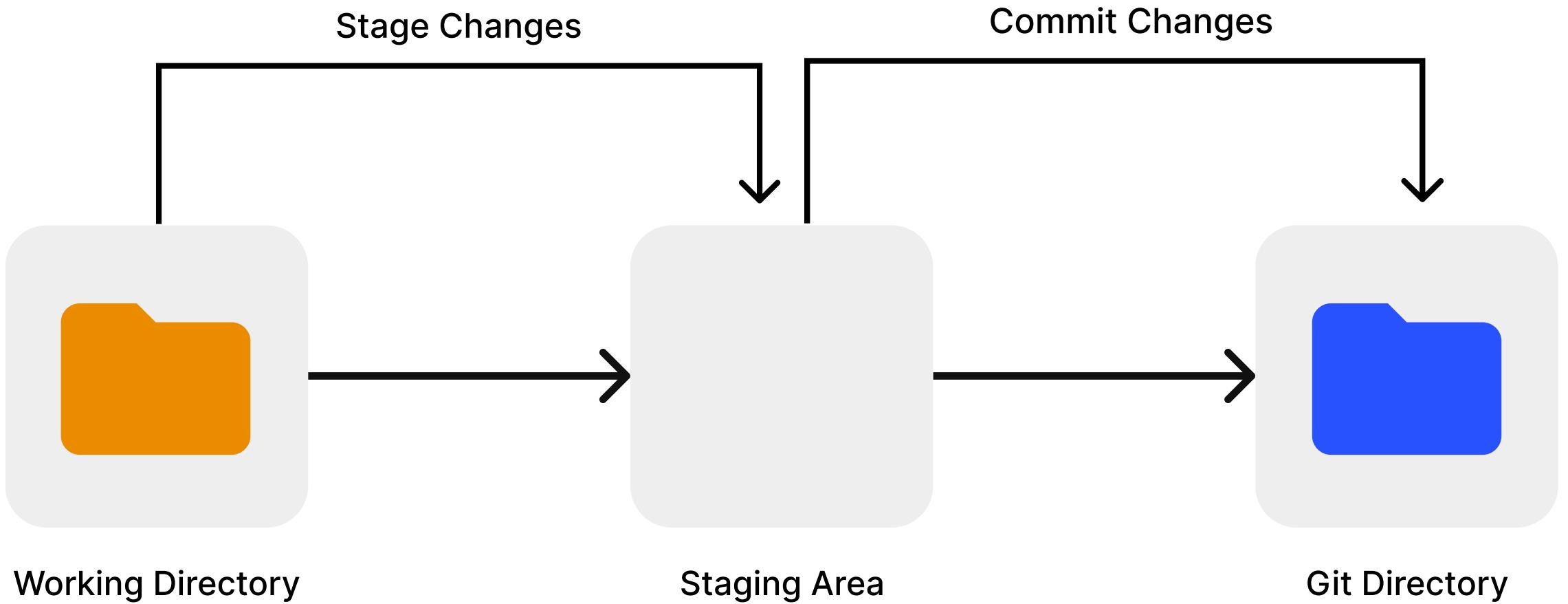






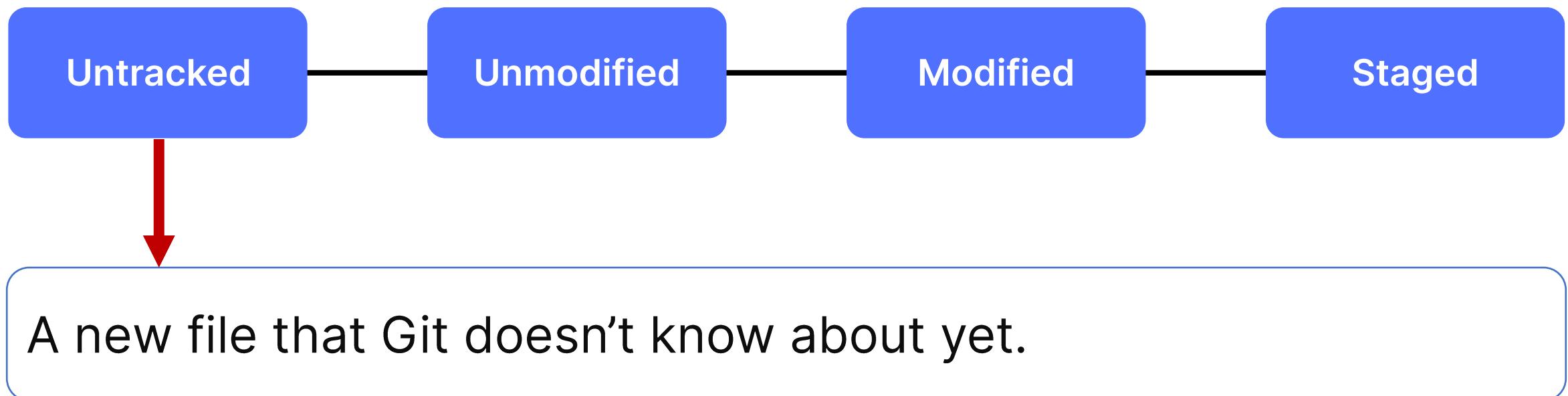




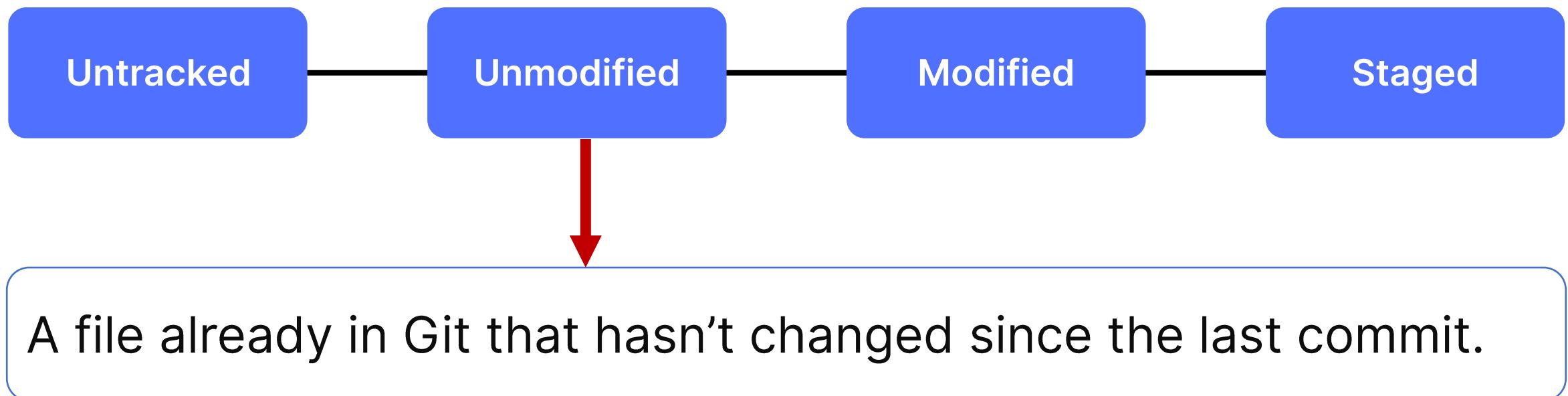


Life Cycle

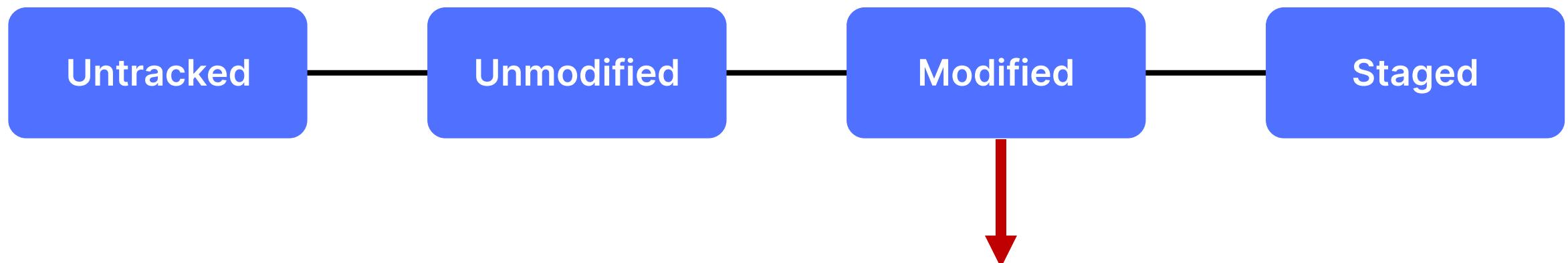
Life Cycle



Life Cycle

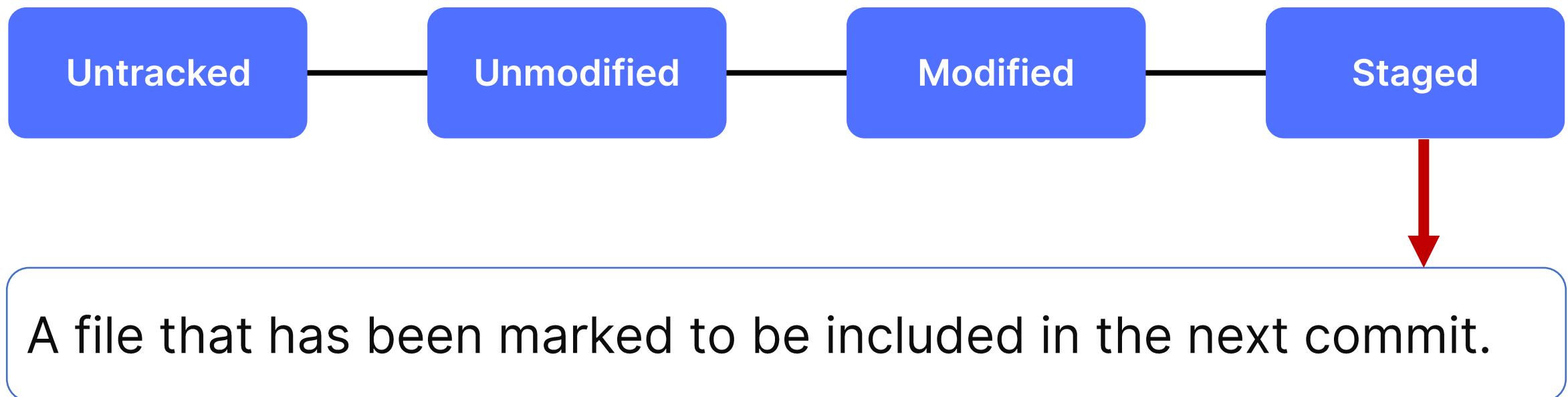


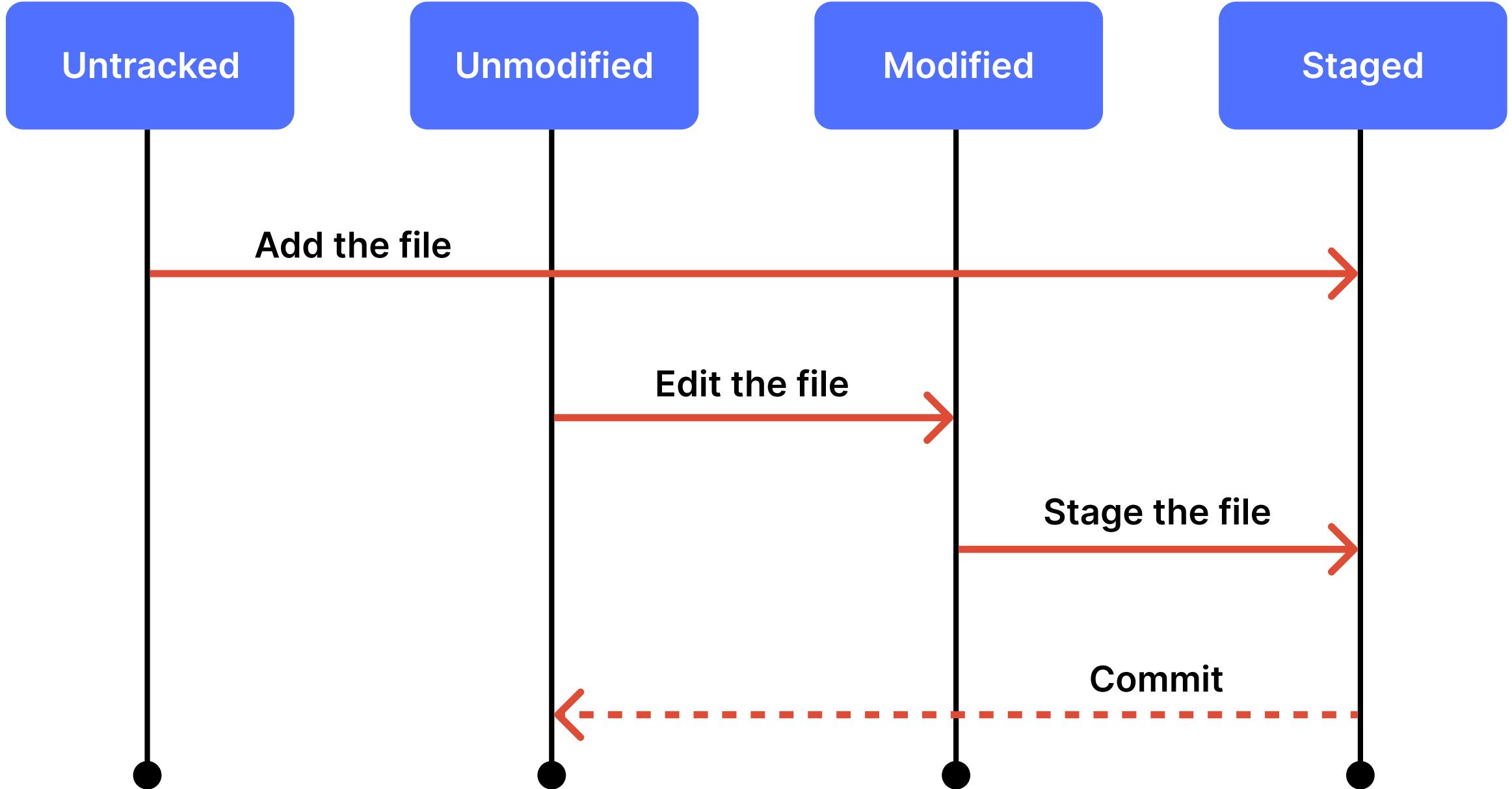
Life Cycle

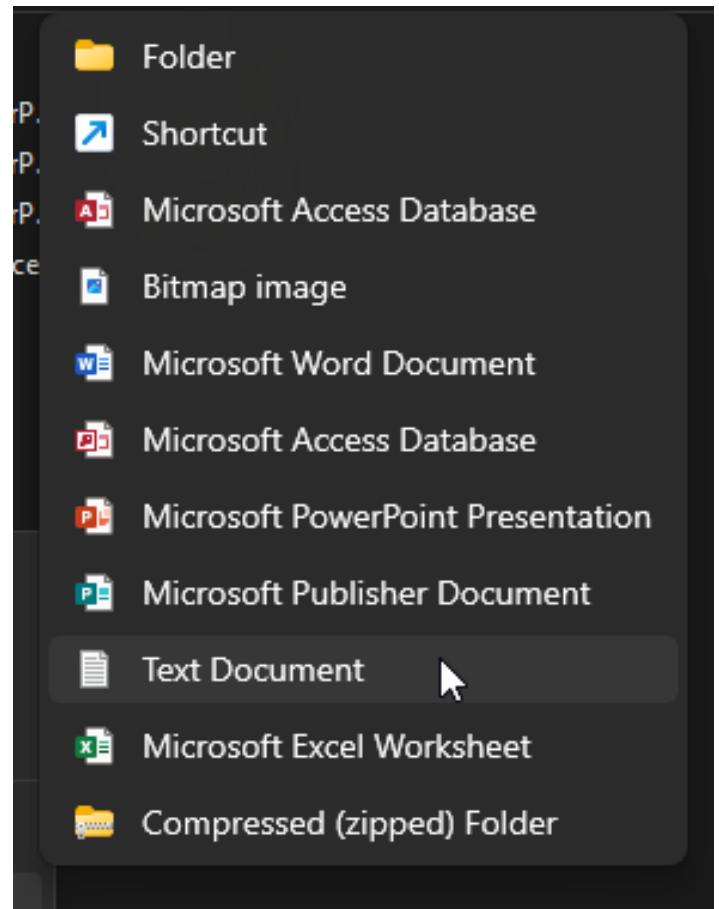


A file that has been edited but not yet marked for commit.

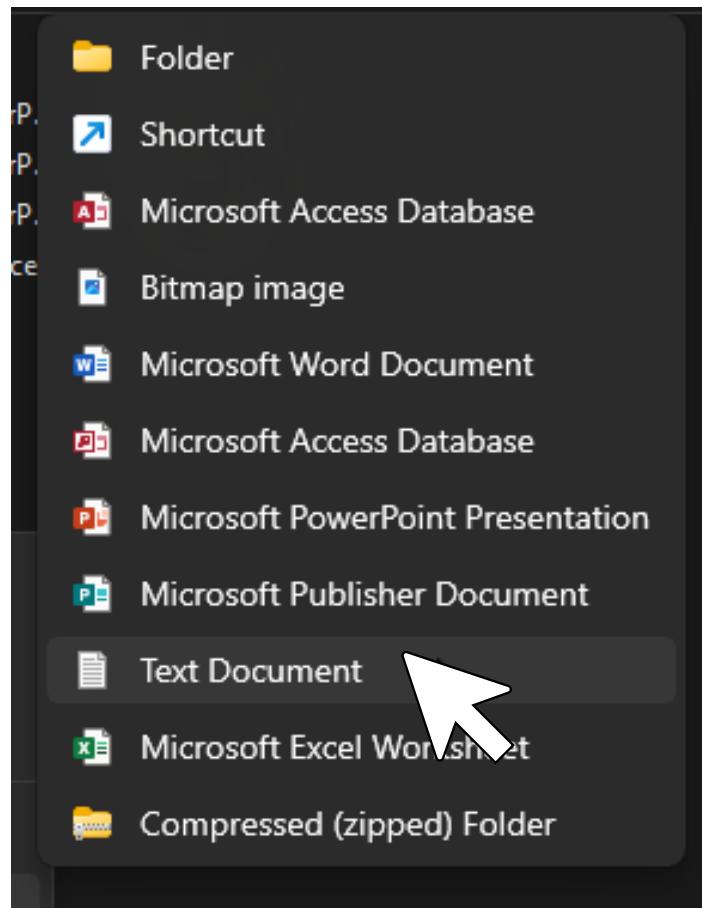
Life Cycle





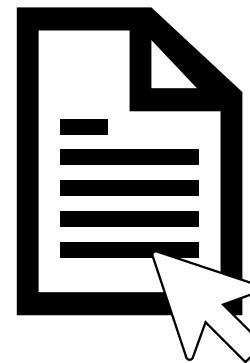
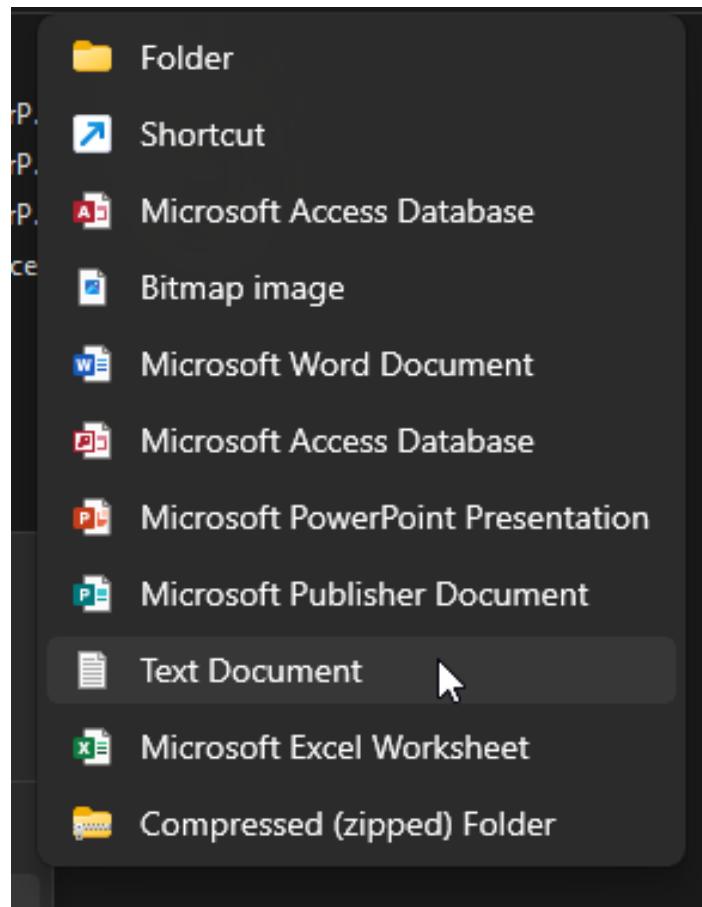


Untracked



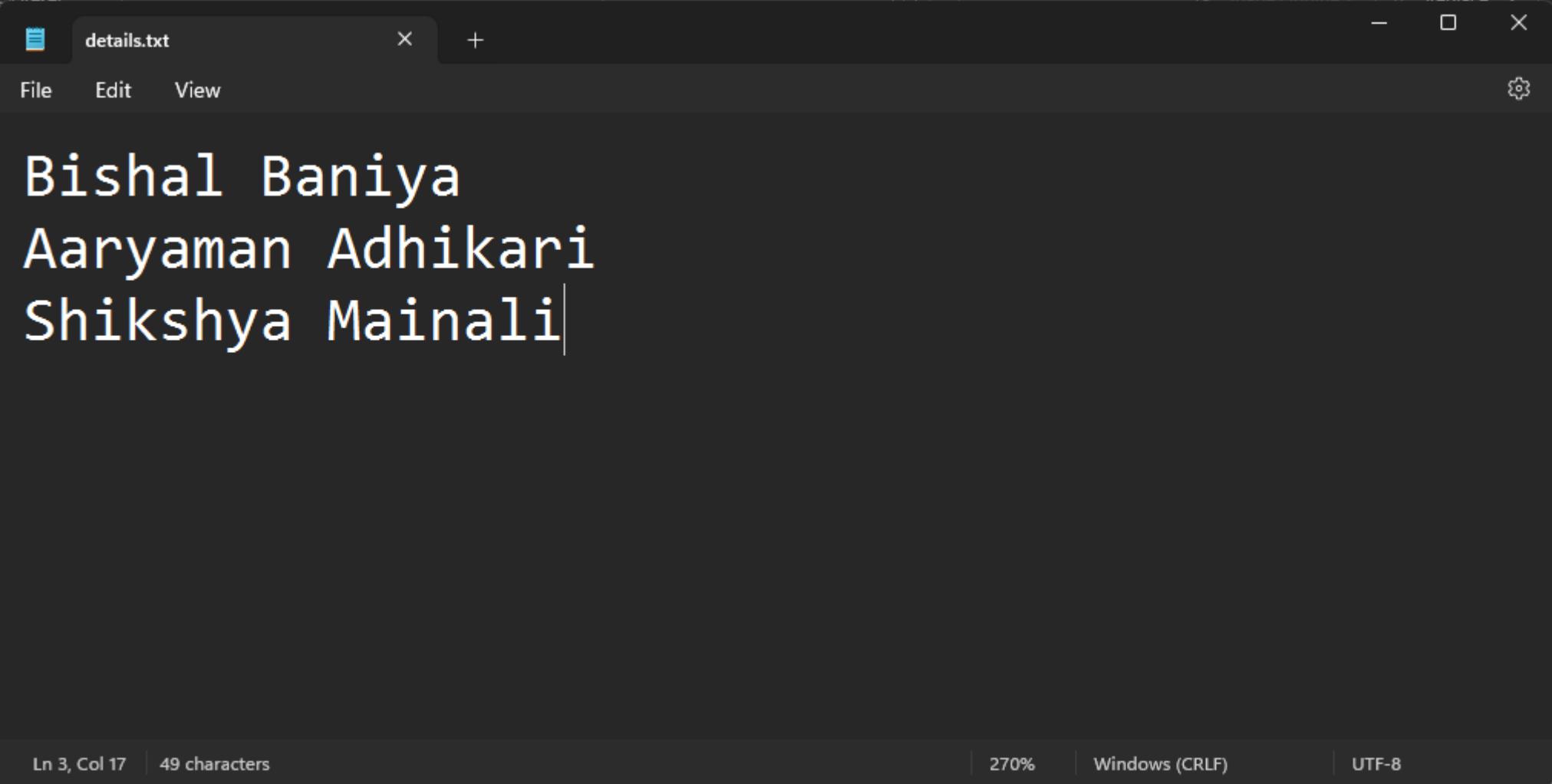
details.txt

Untracked



details.txt

Untracked



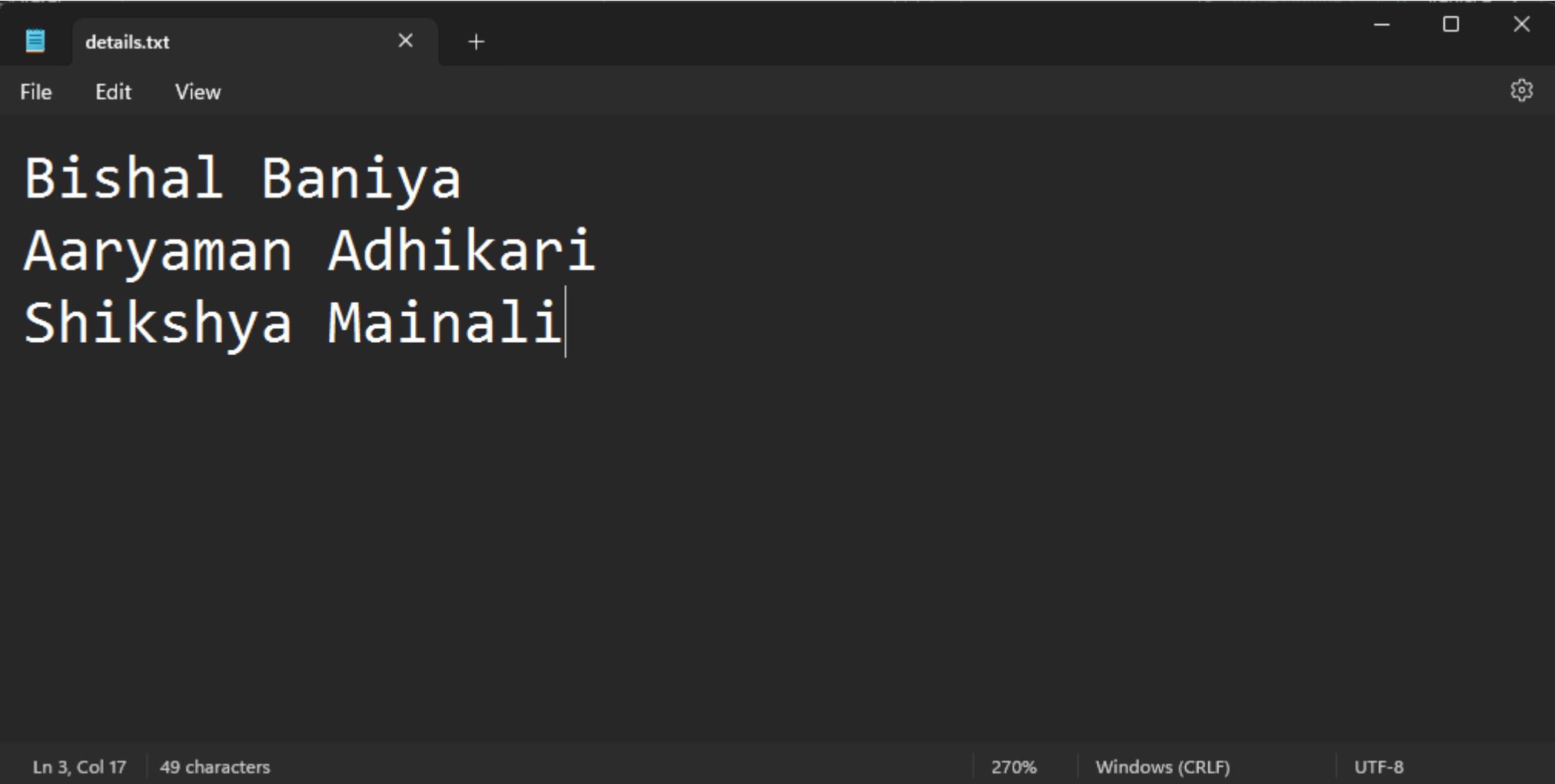
A screenshot of a dark-themed text editor window titled "details.txt". The window contains the following text:

```
Bishal Baniya
Aaryaman Adhikari
Shikshya Mainali|
```

The status bar at the bottom shows "Ln 3, Col 17 | 49 characters" on the left, "270%" in the center, "Windows (CRLF)" below it, and "UTF-8" on the right.

Add the file

Staged



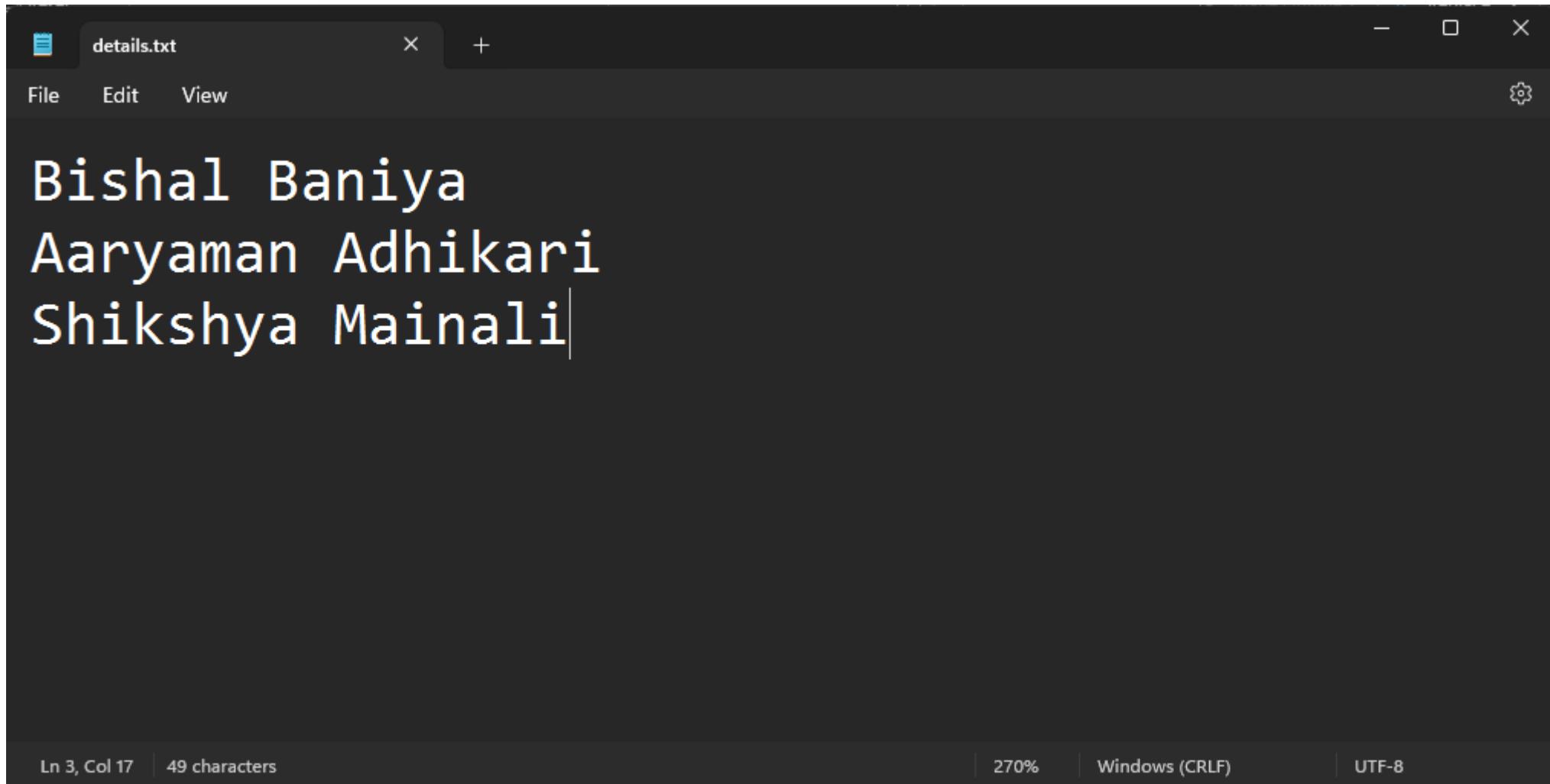
A screenshot of a dark-themed code editor window titled "details.txt". The window contains the following text:

```
Bishal Baniya
Aaryaman Adhikari
Shikshya Mainali|
```

The status bar at the bottom shows "Ln 3, Col 17 | 49 characters" on the left, "270%" in the center, "Windows (CRLF)" below it, and "UTF-8" on the right.

Commit

Version 1



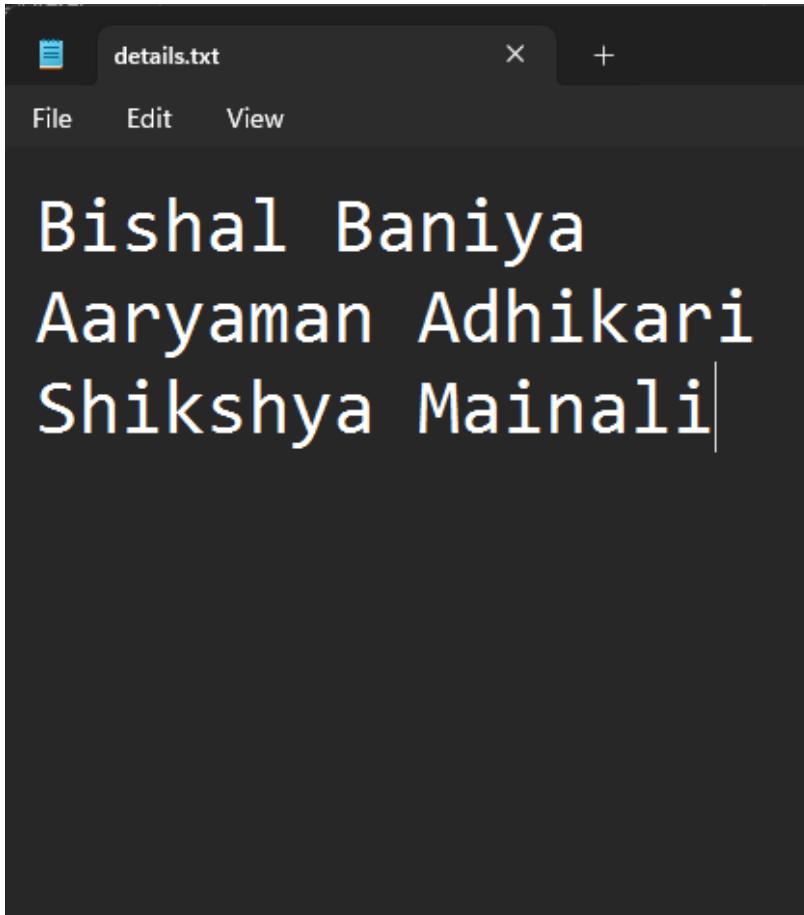
A screenshot of a dark-themed text editor window titled "details.txt". The window contains the following text:

```
Bishal Baniya
Aaryaman Adhikari
Shikshya Mainali
```

The editor interface includes a top bar with file tabs, a menu bar with "File", "Edit", and "View" options, and a status bar at the bottom showing "Ln 3, Col 17 | 49 characters", "270%", "Windows (CRLF)", and "UTF-8".

Git Directory

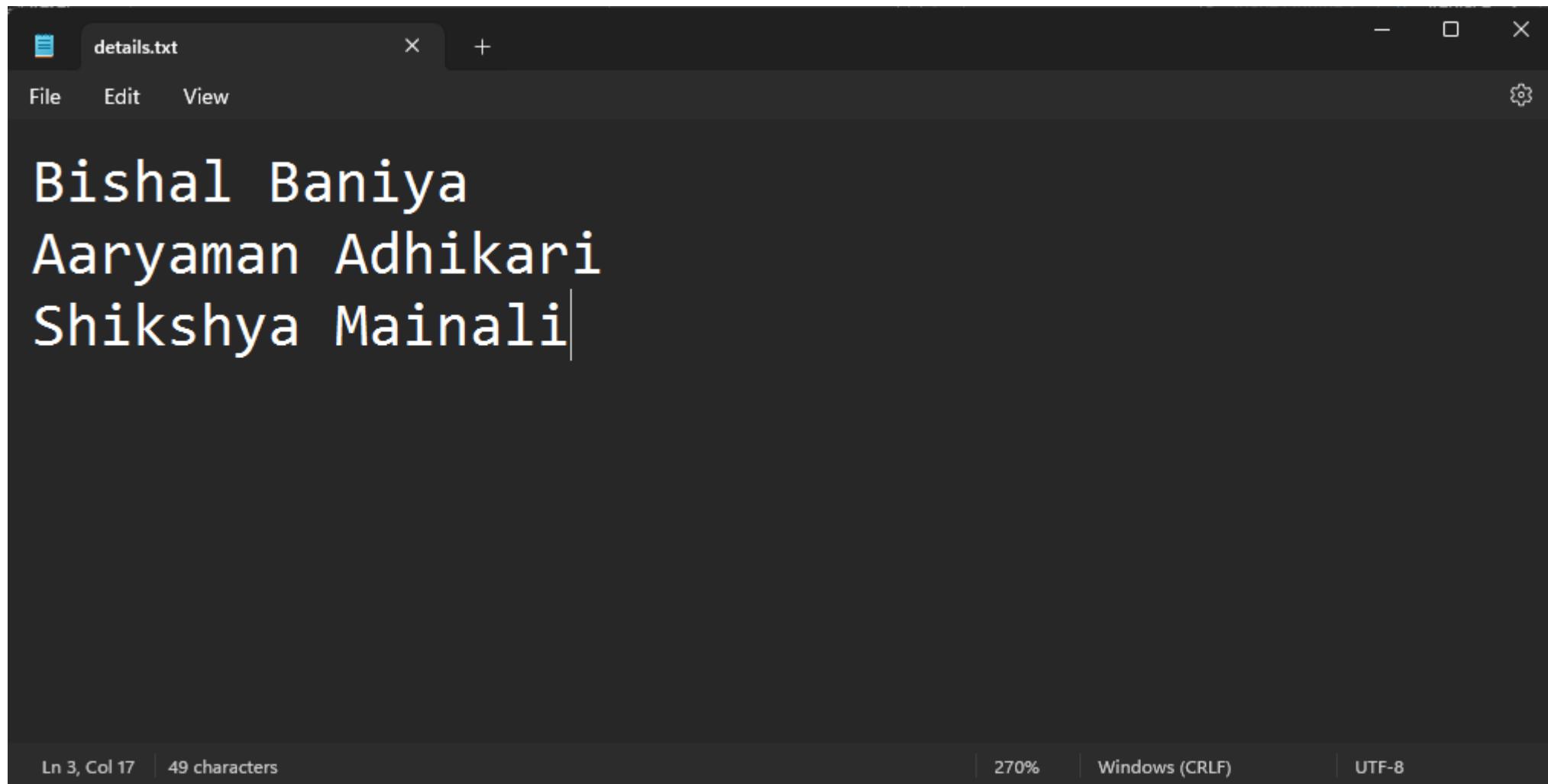
details.txt @1



A screenshot of a dark-themed text editor window titled "details.txt". The window includes a header bar with a file icon, the title "details.txt", a close button ("X"), and a "+" button. Below the header is a menu bar with "File", "Edit", and "View" options. The main content area displays three lines of text: "Bishal Baniya", "Aaryaman Adhikari", and "Shikshya Mainali".

```
Bishal Baniya
Aaryaman Adhikari
Shikshya Mainali
```

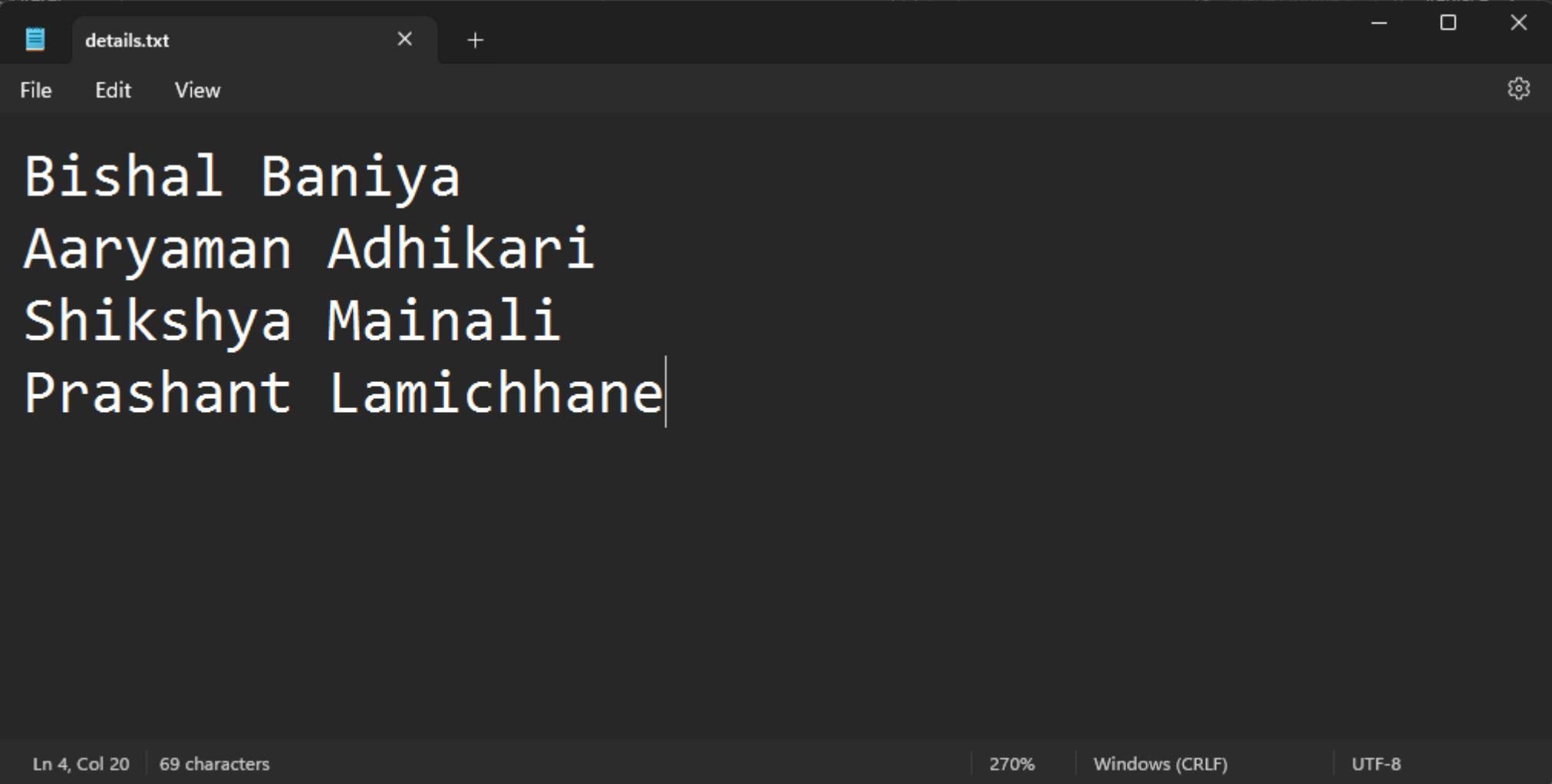
Unmodified



A screenshot of a dark-themed text editor window titled "details.txt". The window contains three lines of text: "Bishal Baniya", "Aaryaman Adhikari", and "Shikshya Mainali". The text is white against a black background. The editor has a standard top bar with "File", "Edit", and "View" menus, and a bottom status bar showing "Ln 3, Col 17 | 49 characters", "270%", "Windows (CRLF)", and "UTF-8".

```
Bishal Baniya
Aaryaman Adhikari
Shikshya Mainali
```

Modified



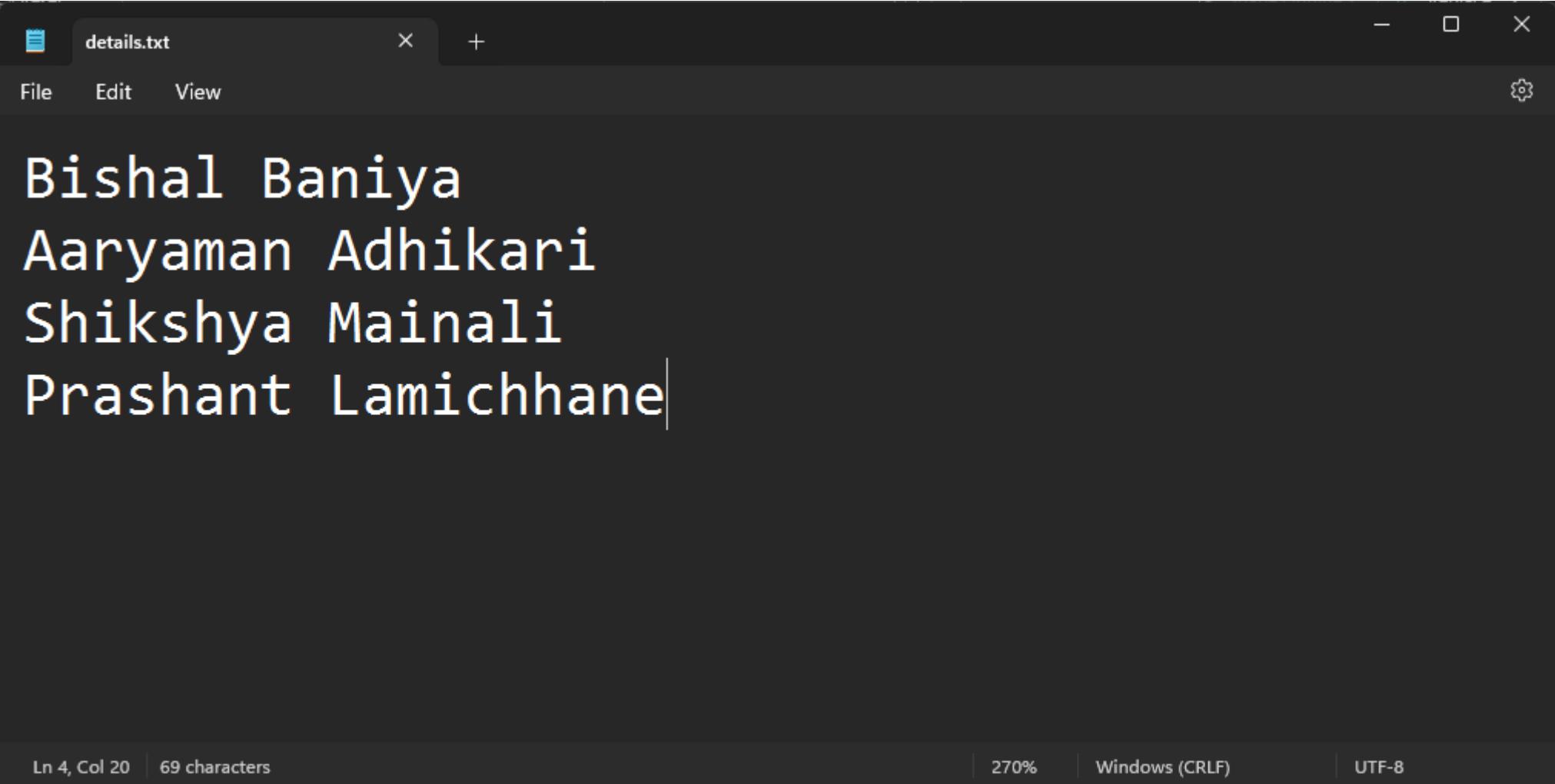
A screenshot of a dark-themed text editor window titled "details.txt". The window includes standard OS X-style controls (minimize, maximize, close) and a menu bar with "File", "Edit", and "View". The main pane displays four lines of text:

```
Bishal Baniya
Aaryaman Adhikari
Shikshya Mainali
Prashant Lamichhane|
```

The status bar at the bottom shows "Ln 4, Col 20 | 69 characters" on the left, "270%" in the center, "Windows (CRLF)" below it, and "UTF-8" on the right.

Add the file

Staged



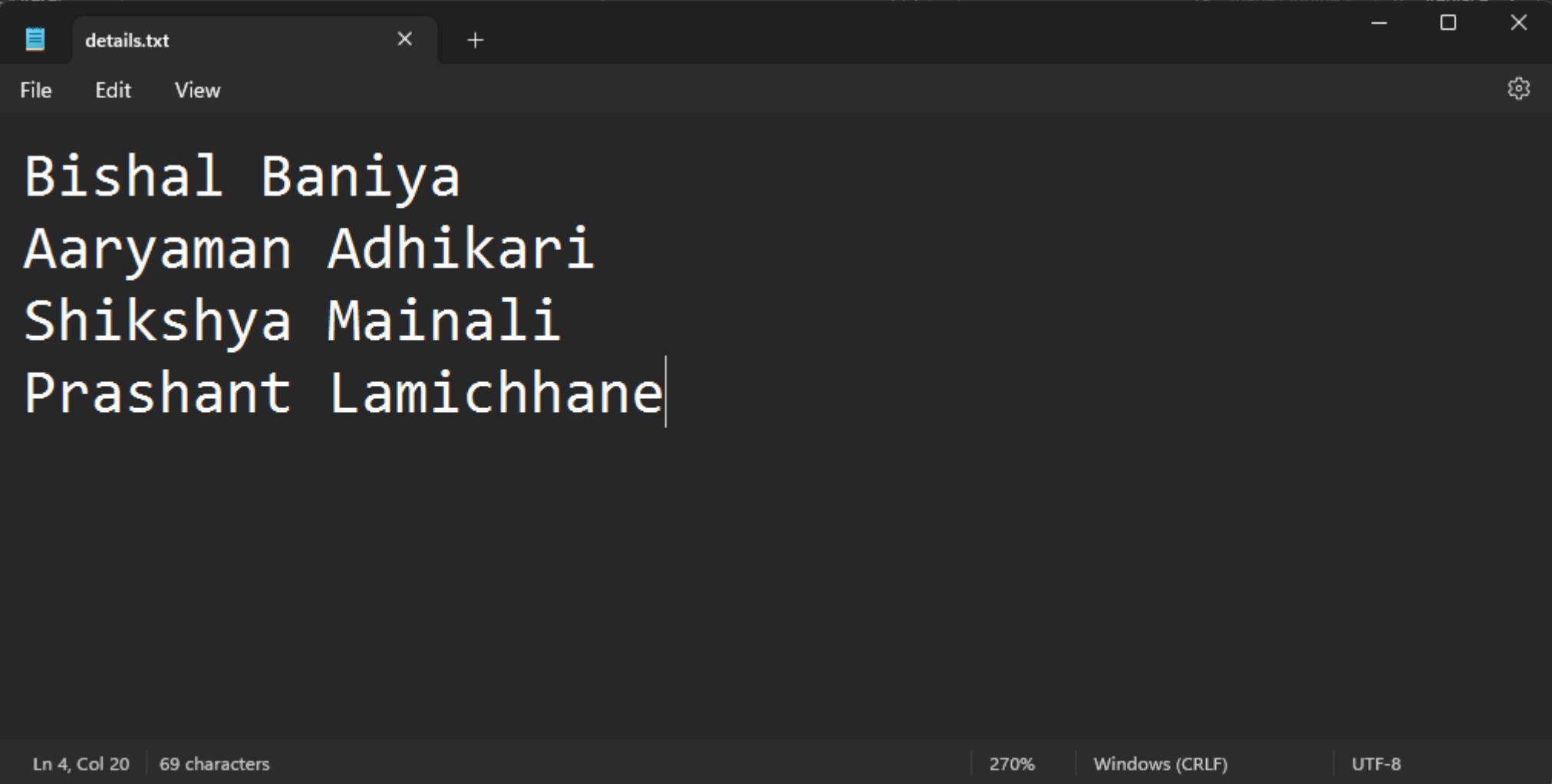
A screenshot of a dark-themed code editor window titled "details.txt". The window contains the following text:

```
Bishal Baniya
Aaryaman Adhikari
Shikshya Mainali
Prashant Lamichhane|
```

The status bar at the bottom shows "Ln 4, Col 20 | 69 characters" on the left, "270%" in the center, "Windows (CRLF)" below it, and "UTF-8" on the right.

Commit

Version 2



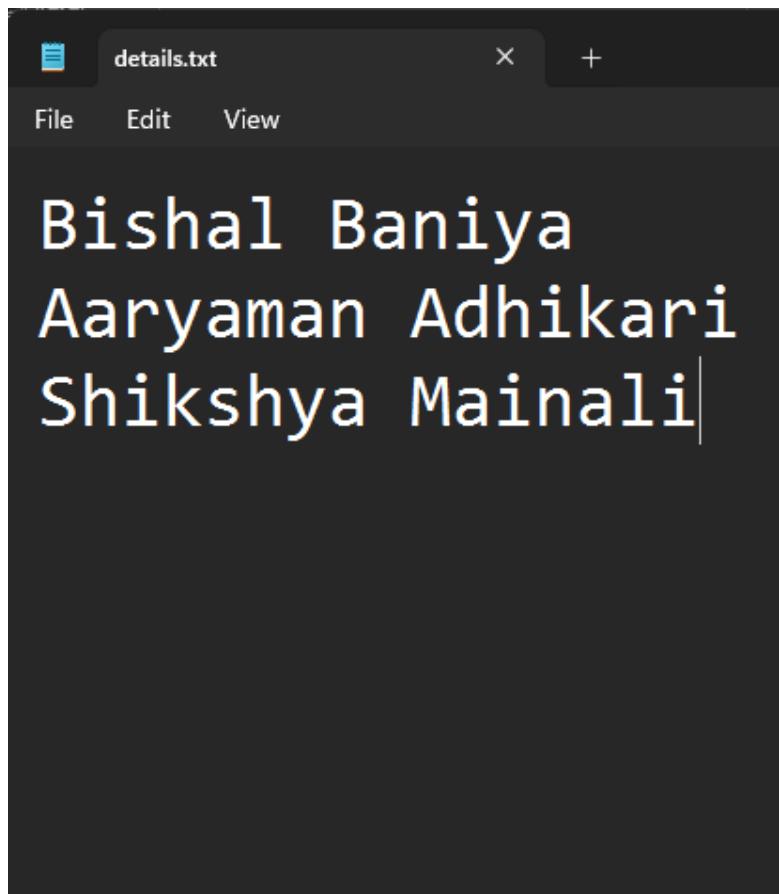
A screenshot of a dark-themed text editor window titled "details.txt". The window includes standard OS X-style controls (minimize, maximize, close) and a menu bar with "File", "Edit", and "View". The main pane displays four lines of text:

```
Bishal Baniya
Aaryaman Adhikari
Shikshya Mainali
Prashant Lamichhane|
```

The status bar at the bottom shows "Ln 4, Col 20 | 69 characters" on the left, "270%" in the center, "Windows (CRLF)" below it, and "UTF-8" on the right.

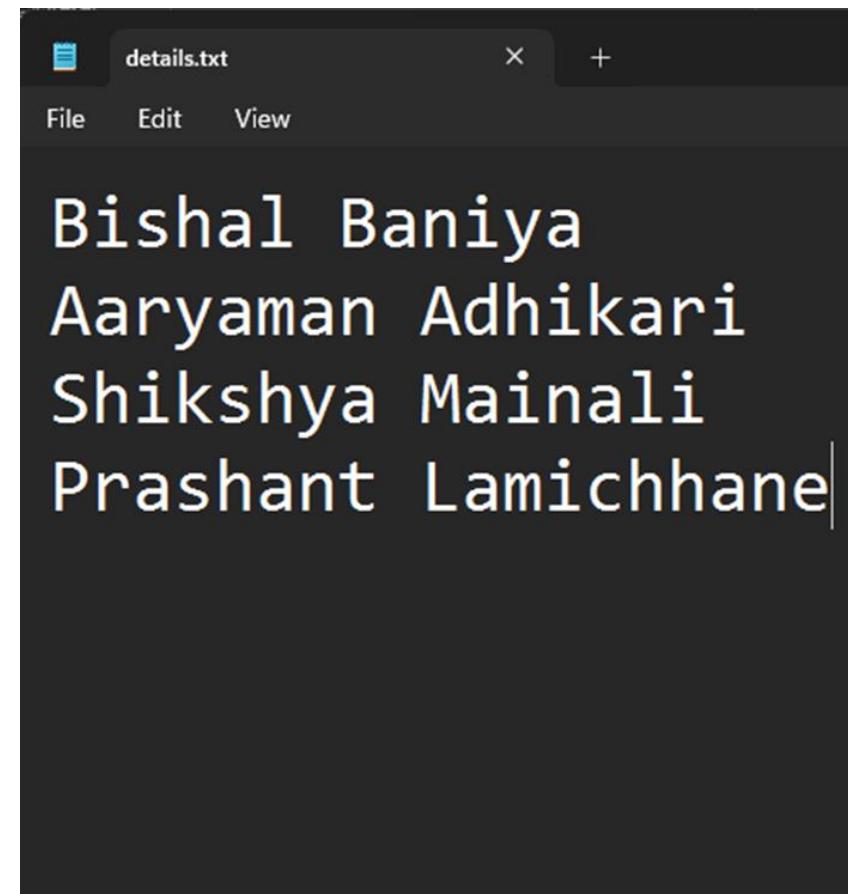
Git Directory

details.txt @1



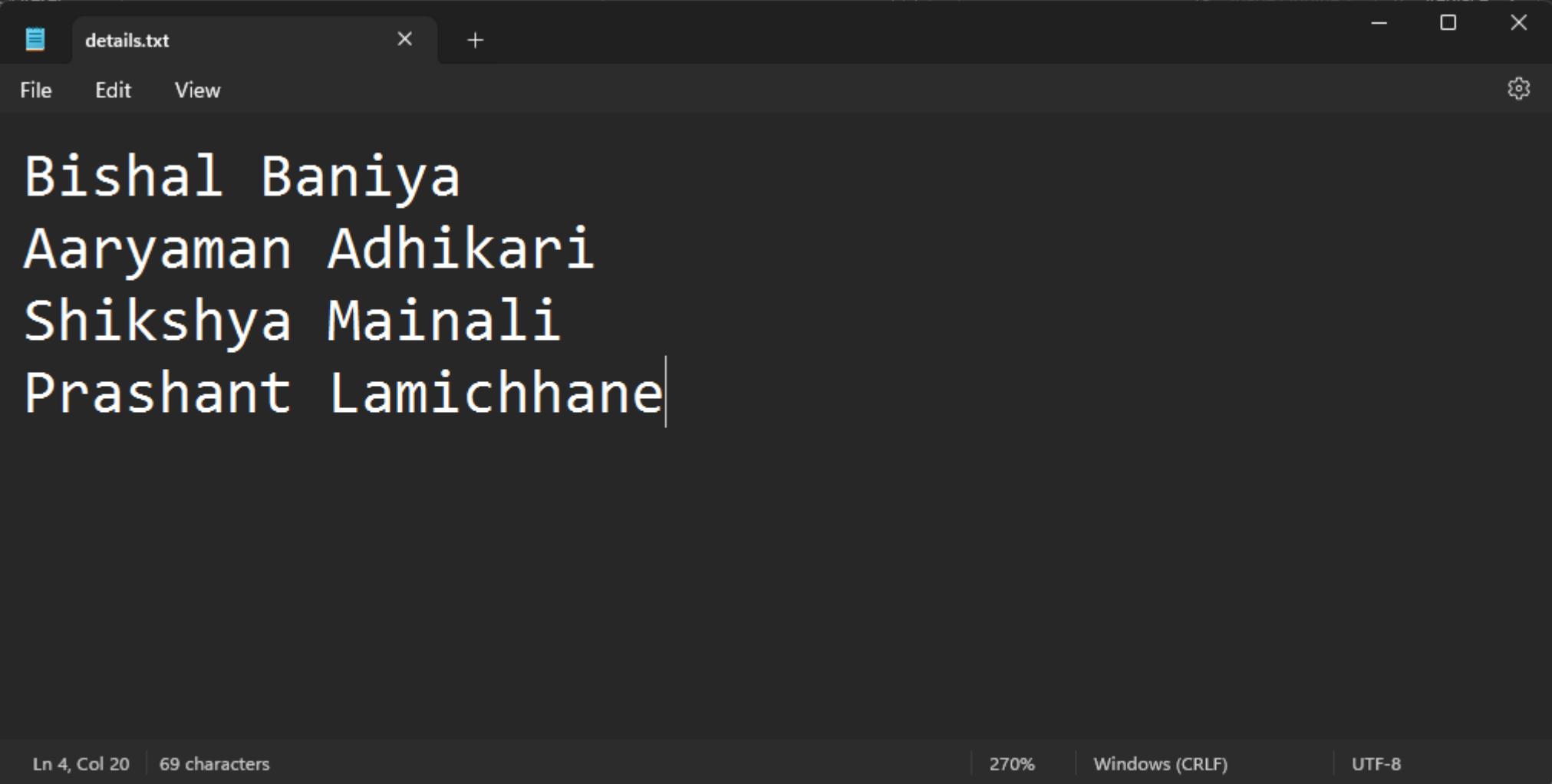
```
Bishal Baniya
Aaryaman Adhikari
Shikshya Mainali|
```

details.txt @2



```
Bishal Baniya
Aaryaman Adhikari
Shikshya Mainali
Prashant Lamichhane|
```

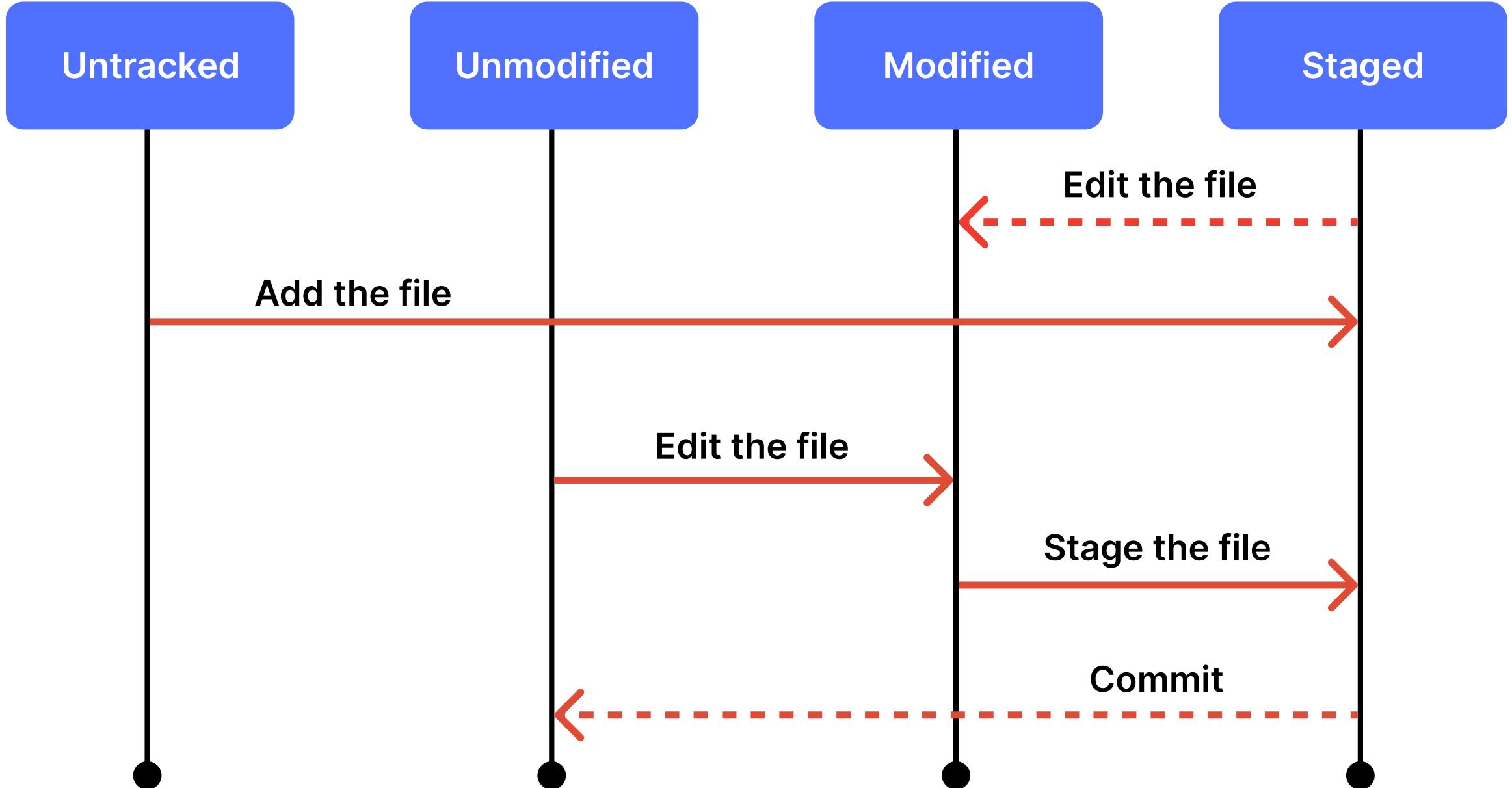
Unmodified



A screenshot of a dark-themed text editor window titled "details.txt". The window contains the following text:

```
Bishal Baniya
Aaryaman Adhikari
Shikshya Mainali
Prashant Lamichhane|
```

The status bar at the bottom shows "Ln 4, Col 20 | 69 characters" on the left, "270%" in the center, "Windows (CRLF)" below it, and "UTF-8" on the right.



Configuring Git

Configuring Git

- Configuring Git for the first time tells it who we are, so it can label our changes with our name and email.

```
git config --global user.name "your_name"
```

```
git config --global user.email "your_email"
```



Module 1 Completed