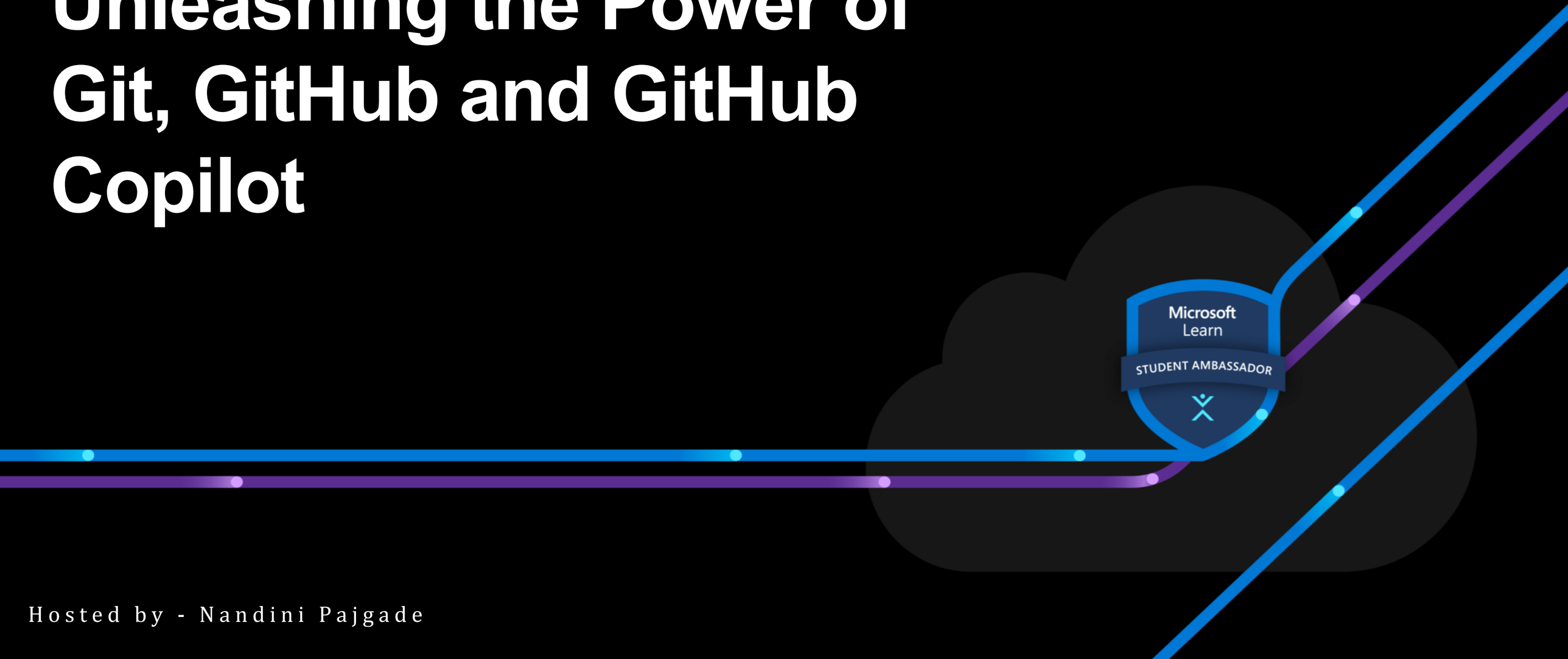
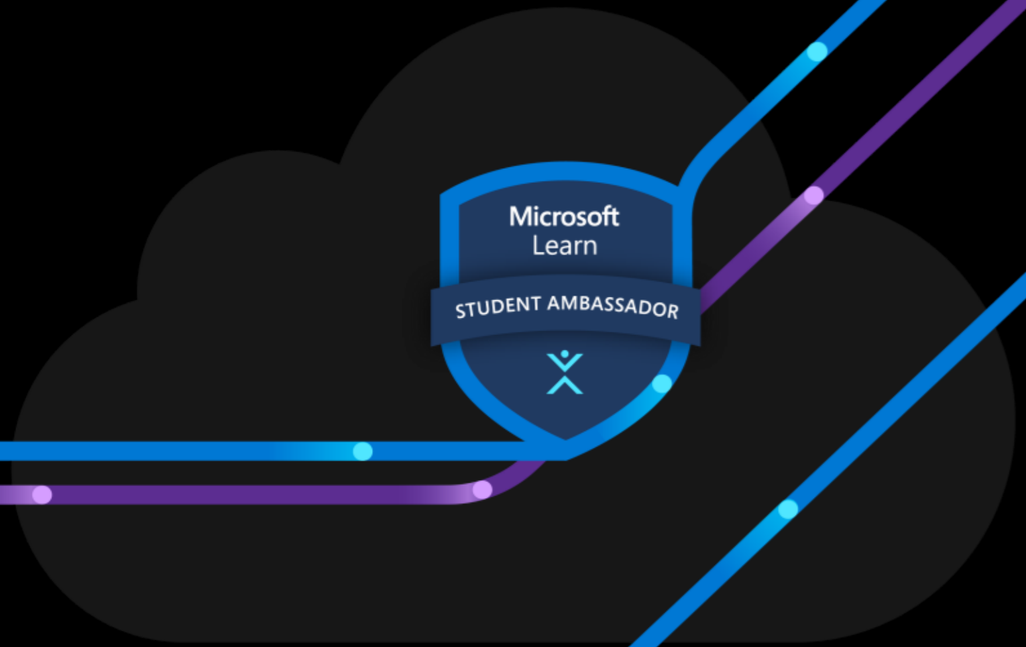
Unleashing the Power of Git, GitHub and GitHub Copilot



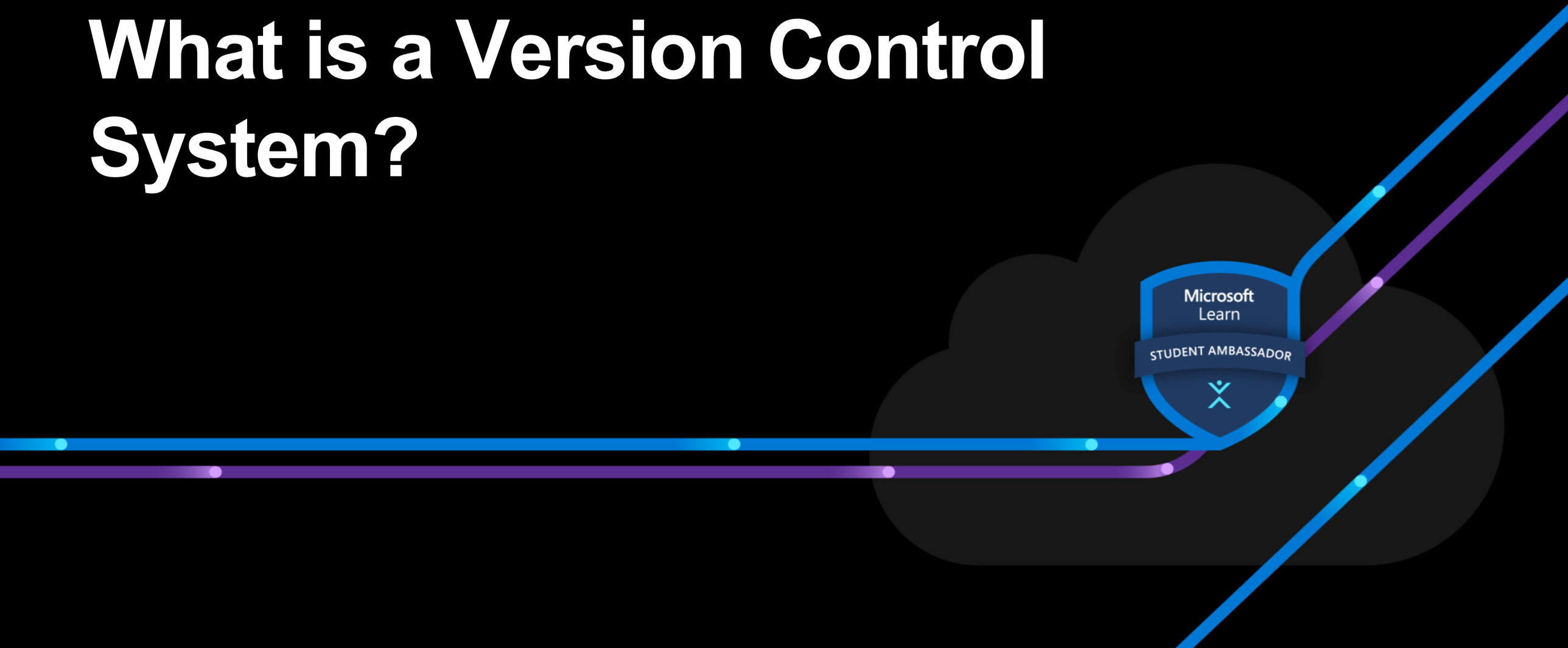
Hosted by - Nandini Pajgade

What will we be learning today?

What is a Version Control
Basic CLI Commands
Introduction to Git
Setting up VS Code
Introduction to GitHub
Github Copilot
Final Quiz



What is a Version Control System?



Let's Visualize

You are a designer

poster1.png

poster2.png

final_poster.png

final_final_
poster.png

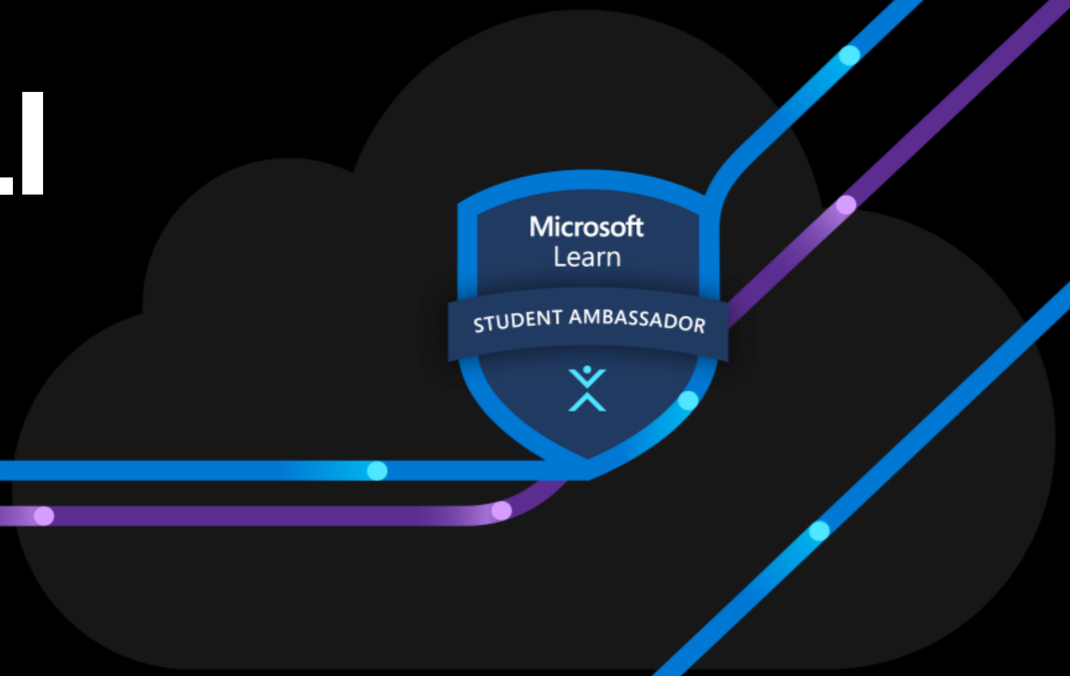
What is Version Control System?

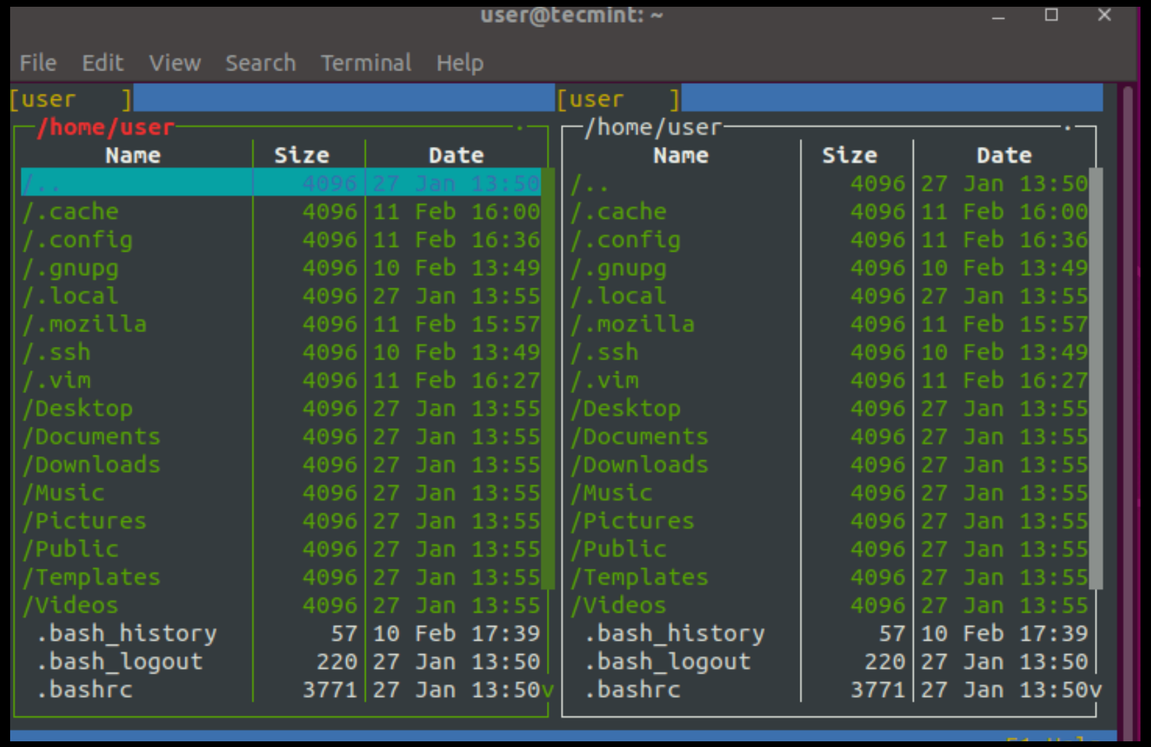
Version Control System manages the entire process of version and keeps the track of the changes made.

We need VCS to:

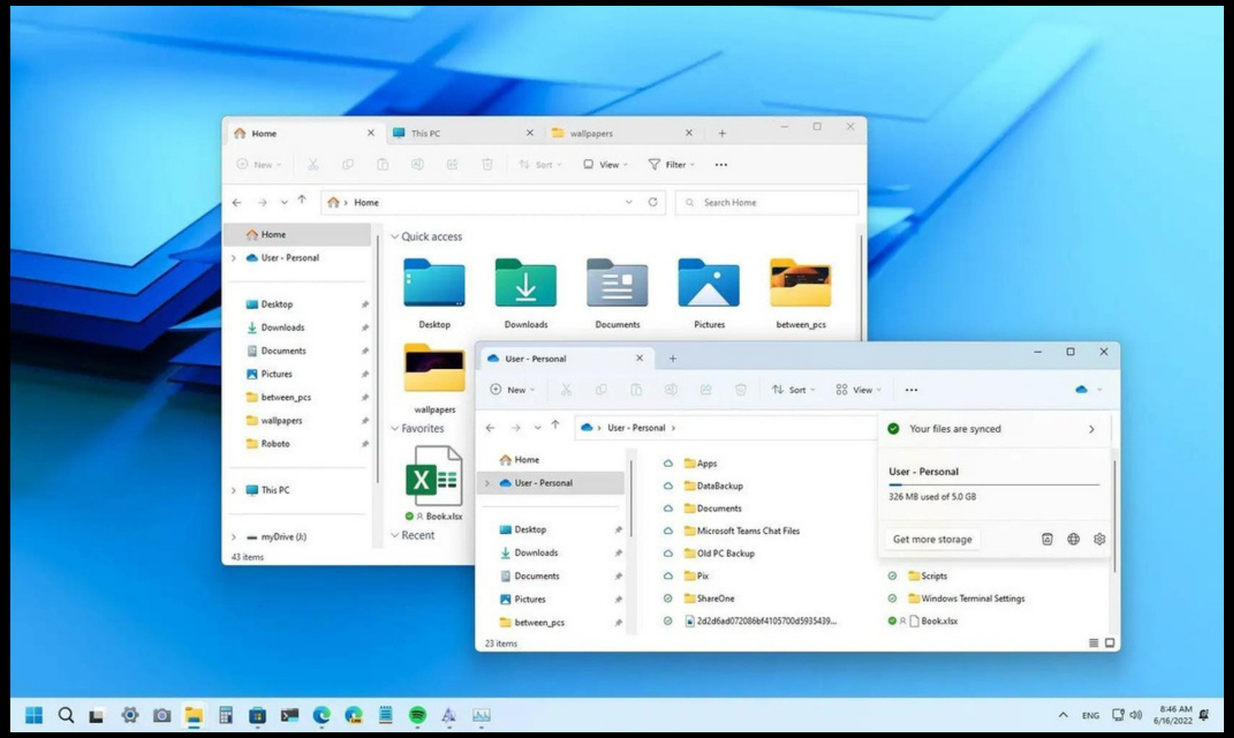
- **track the changes made,**
- **revert back to any versions when needed,**
- **compare the changes made between any two versions,**
- **to know information like who, when, why made the changes,**
- **to get all these benefits with minimal effort.**

Before we learn Git
Let's learn about CLI





Command line Interface



Graphical User Interface

Basic CLI Commands

$ pwd	**Prints the full name (the full path) of current/working directory**
$ cd Desktop	**Changes the working directory to Desktop. Use this to navigate around CLI**
$ ls	**List directory contents.**
$ mkdir name	**Create a new directory called name.**
$ rm file.txt	**Removes the file file.*txt***

Let's Try it!

What is Git?

Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Let's Install Git

https://git-scm.com/downloads

Let's Install VSC

https://code.visualstudio.com/

Setup Git

Check version

```
$ git --version
```

Add in your name

```
$ git config --global user.name “[firstname lastname]”
```

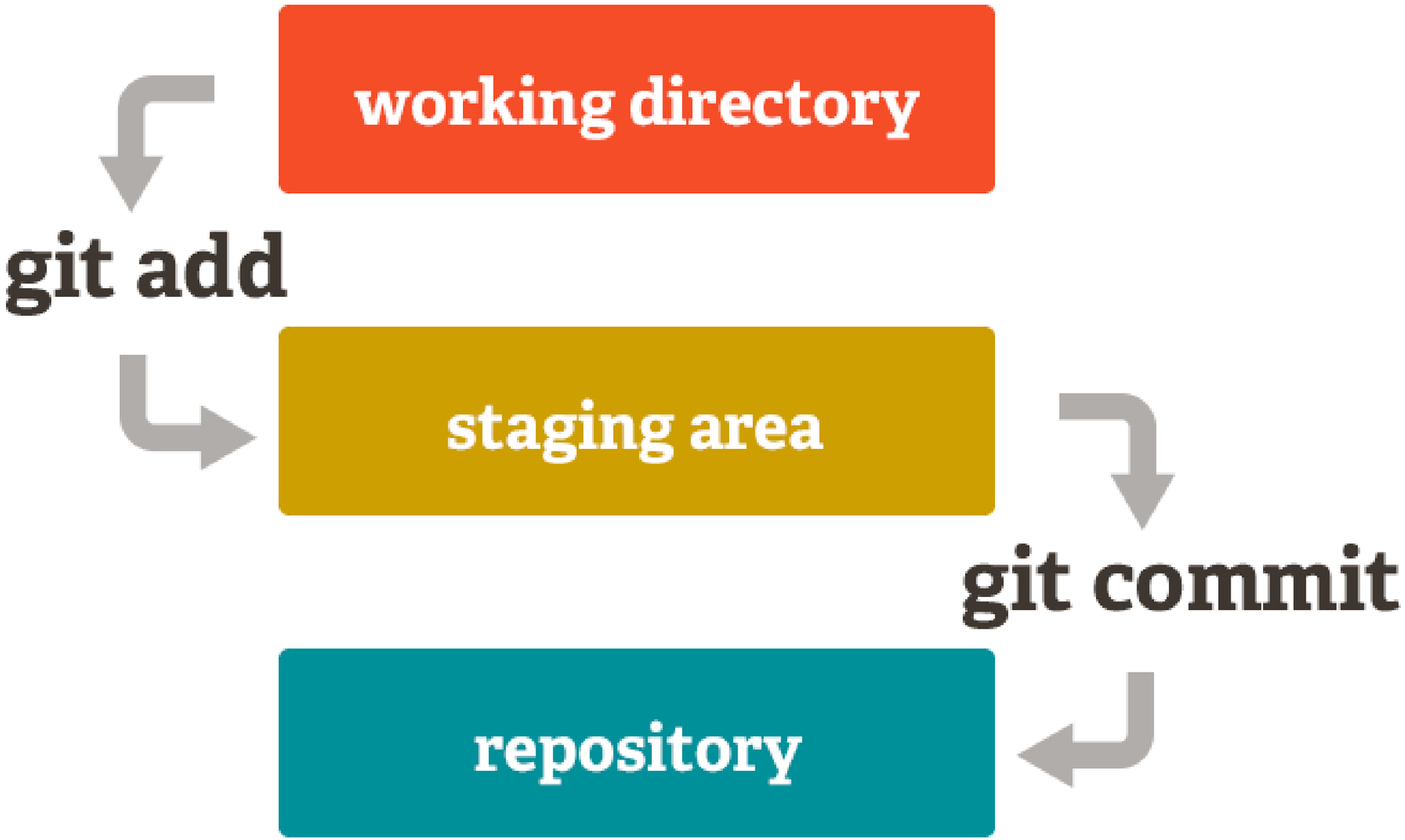
Add in your email id

```
$ git config --global user.email “[valid-email]”
```

Initialize an existing directory as a Git repo

```
$ git init
```

How Git works



Git Commands

It displays the state of working tree and staging area.

```
$ git status
```

It starts to track a fileby adding it to the staging area

```
$ git add [file]
```

It unstages the file

```
$ git reset [file]
```

Git Commands

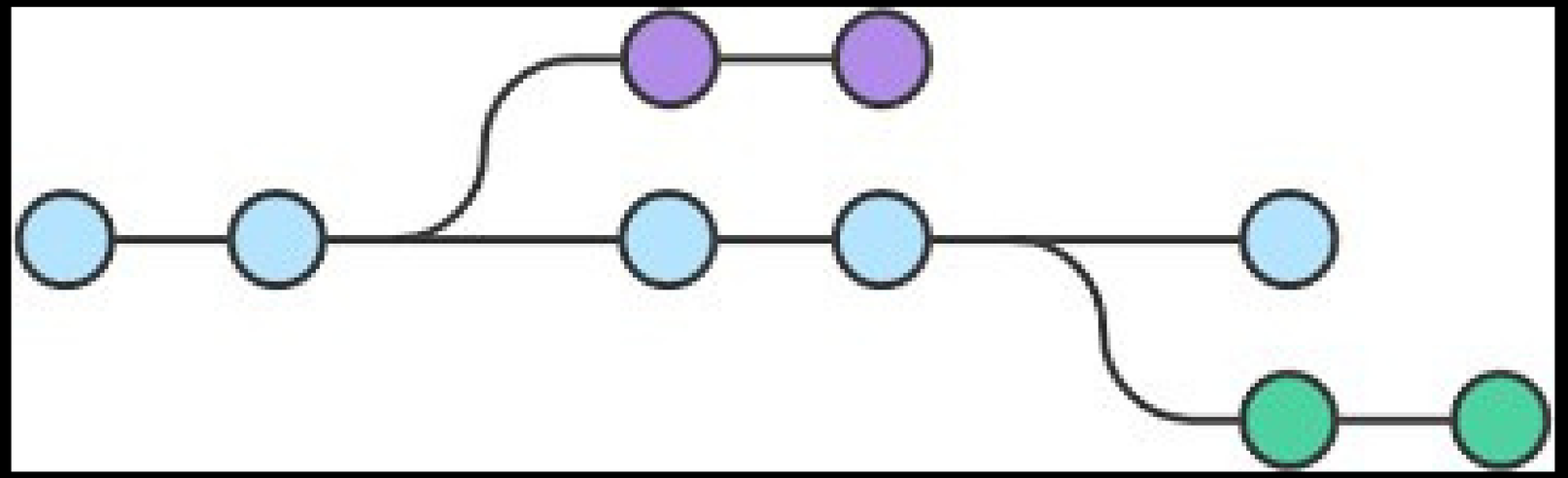
It commits your changes and captures a new snapshot

```
$ git commit -m "Some valuable message"
```

It displays all the commits in the current branch.

```
$  git log
```

Branching



Git Commands

List your branches

```
$ git branch
```

Creates a new branch from the current commit

```
$  git branch [name]
```

Switchs to another branch

```
$ git checkout [name]
```

Merges the specified branch’s history into the current one

```
$  git merge [branch]
```

Git ignore

```
# .gitignore file is used to ignore some files in a repo
# such files always remain untracked
# the use of such file is done as follows

# any line starting with # is a comment
# ignoring file named password
password
# ignoring all files ending with .exe
*.exe
# but not ignoring final.exe
!final.exe
# ignoring all files inside build folder
build/
# ignoring file TODO not inside any subdirectory
/TODO
```

What is GitHub

- Till now, we have all the changes made saved in our local system only.
- To host our repository online, we need a server or hosting platform.
- GitHub is a repository hosting platform that uses Git in its core.

Let's make an account!

Education

Free Goodies

Microsoft Learn
STUDENT AMBASSADOR

GitHub Student Developer Pack

Learn to ship software like a pro. There's no substitute for hands-on experi
students, real world tools can be cost-prohibitive. That's why we created the
Developer Pack with some of our partners and friends.

Sign up for Student Developer Pack

Love the pack? Spread the word

Experiences

Aspiring Creatives

Working on a creative project? Develop your design and collaboration skills to get your clever intentions off the ground. Unleash your originality and start to

Primer: Codespaces

Wondering how to get started wit
This Primer makes it easy by givi
templates, videos and step-by-st

Some More Git Commands

Add a remote repo link

```
$ git remote add origin [link]
```

Push local repo changes to remote repo

```
$  git push
```

Fetch and merge changes from remote repo

```
$ git pull
```

Retrieve an hosted repository from a URL

```
$  git clone [link]
```

Some Terminologies

- Fork: A fork is a copy of a repository that allows you to freely experiment with changes without affecting the original project.

- Pull requests: A PR is request sent to the repo to merge new commits into the repo.

- Issues: Issues is what it sounds. It can be a new feature, bug, documentation problem and many more.

Workflow to Contribute

01

Find a issue or Suggest a feature

02

Ask the maintainer to assign the issue

03

Fork and Clone the Repo

04

Branch and make changes

05

Commit your changes

06

Create a Pull Request

07

Listen to Review and do changes if needed

08

Hurray! The PR got accepted

What is GitHub Copilot?

- GitHub Copilot is a revolutionary coding assistant developed by GitHub in collaboration with OpenAI.
- It leverages advanced machine learning models, particularly OpenAI's GPT-3, to understand and generate code suggestions in real-time.
- The primary goal is to enhance developer productivity by providing intelligent auto-completions and suggestions during the coding process.

Functionality and Integration

- GitHub Copilot seamlessly integrates as a plugin in popular IDEs, notably Visual Studio Code.
- It supports multiple programming languages, making it versatile for developers working on various projects.
- Developers experience intelligent code suggestions as they type, ranging from single lines to entire code blocks, based on the context.

Quiz Time ✨

Time to test your knowledge!

Thank You!