**Beginner Git Tutorial**

*(No prior Git knowledge needed)*

**1. What is Git?**

Git is a **version control system** — it tracks changes in your code, lets you go back in time, and makes teamwork easier.

Think of it like a **“save game + multiplayer”** for coding:

* You save progress as *commits*
* You can branch off to try new things without breaking the main code
* You can merge others’ work with yours

**2. Installing Git**

**On Windows:**

* Download from [git-scm.com](https://git-scm.com/)
* Install with default settings (includes Git Bash)

**On Ubuntu (WSL2 or Linux):**

bash

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sudo apt update

sudo apt install git

**Check install:**

bash

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git --version

**3. First-Time Setup**

Tell Git who you are (so commits have your name/email):

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git config --global user.name "Your Name"

git config --global user.email "you@example.com"

Check your settings:

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git config --list

**4. Create Your First Git Project**

**Option 1 — Start a new repo:**

bash

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mkdir my-first-project

cd my-first-project

git init

**Option 2 — Clone an existing repo:**

bash

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git clone https://github.com/username/repository.git

**5. The Git Workflow (3 Steps)**

Every change goes through:

1. **Working directory** — your files
2. **Staging area** — files ready to commit
3. **Repository** — committed history

**6. Basic Commands**

**Check status**

bash

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git status

**Stage files**

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git add file.txt # add one file

git add . # add all changes

**Commit changes**

bash

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git commit -m "Add hello world script"

**See history**

bash

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git log

**7. Pushing to GitHub**

1. Create a repo on GitHub (empty).
2. Link your local repo to GitHub:

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git remote add origin https://github.com/username/repository.git

1. Push:

bash

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git branch -M main

git push -u origin main

**8. Pulling Changes**

To update your local copy with remote changes:

bash

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git pull

**9. Branching Basics**

**Create a branch:**

bash

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git branch feature-1

**Switch branches:**

bash

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git switch feature-1

**Merge into main:**

bash

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git switch main

git merge feature-1

**10. Undoing Mistakes**

* Undo changes in a file (before staging):

bash

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git checkout -- file.txt

* Unstage a file:

bash

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git reset file.txt

💡 **Beginner Pro Tips:**

* Always run git status before committing or switching branches.
* Commit often, but make each commit about *one logical change*.
* Use clear commit messages: “Fix login button alignment” is better than “update”.