

## STEP 0: Check Git is Installed

Open **Git Bash** (important ⚠ not CMD).

```
git --version
```

If not installed → install **Git for Windows**, then reopen **Git Bash**.

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## ◆ STEP 1: Check if SSH key already exists

```
ls ~/.ssh
```

If you see files like:

```
id_rsa id_rsa.pub  
id_ed25519 id_ed25519.pub
```

➡ SSH key already exists (you can reuse it).

If folder is empty or not found → continue to Step 2.

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## ◆ STEP 2: Generate a new SSH key

Recommended algorithm: **ed25519**

```
ssh-keygen -t ed25519 -C "your_email@gmail.com"
```

**When asked:**

Enter file in which to save the key:

👉 Press **Enter** (default location)

Enter passphrase:

👉 Press **Enter** (or set one if you want extra security)

✅ Key created successfully.

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### ◆ **STEP 3: Start SSH Agent**

```
eval "$(ssh-agent -s)"
```

Output:

Agent pid XXXX

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### ◆ **STEP 4: Add SSH key to agent**

```
ssh-add ~/.ssh/id_ed25519
```

(Use correct file name if different)

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### ◆ **STEP 5: Copy SSH public key**

```
cat ~/.ssh/id_ed25519.pub
```

📋 Copy the **entire output** (starts with `ssh-ed25519`).

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### ◆ **STEP 6: Add SSH key to GitHub**

1. Open **GitHub**
2. Go to → **Settings**
3. Click → **SSH and GPG keys**
4. Click → **New SSH key**
5. Fill:
  - **Title:** Windows Laptop
  - **Key:** Paste copied key
6. Click **Add SSH key**

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## ◆ STEP 7: Test SSH Connection

`ssh -T git@github.com`

Expected output:

Hi USERNAME! You've successfully authenticated...

✓ SSH setup complete 🎉

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## ◆ STEP 8: Change Git Remote to SSH (IMPORTANT)

If your repo uses HTTPS, SSH won't work.

Check:

`git remote -v`

Change to SSH:

`git remote set-url origin git@github.com:USERNAME/REPO_NAME.git`

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## ◆ STEP 9: Push Without Username/Password

`git push -u origin main`

(or your branch name)

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## Common Student Mistakes

Mistake	Fix
Using CMD instead of Git Bash	Always use Git Bash

Remote is HTTPS

Change to SSH

Wrong key file

Use `.pub` for GitHub

Multiple GitHub accounts

Use separate SSH  
config