

Git and GitHub integration

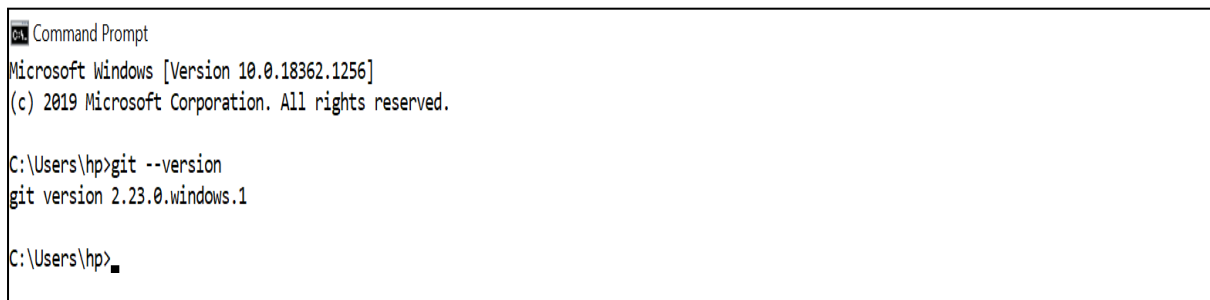
Git Installation Steps:

1. Browse to the official Git website: <https://git-scm.com/downloads>
2. Click the download link for Windows and allow the download to complete.
3. Browse to the download location (or use the download shortcut in your browser).
Double-click the file to extract and launch the installer.
4. Allow the app to make changes to your device by clicking “Yes” on the User Account Control dialog that opens.
5. Review the GNU General Public License, and when you’re ready to install, click “Next”.
6. The installer will ask you for an installation location. Leave the default, unless you have reason to change it, and click “Next”.
7. A component selection screen will appear. Leave the defaults unless you have a specific need to change them and click “Next”.
8. The installer will offer to create a start menu folder. Simply click “Next”.
9. Select a text editor you’d like to use with Git. Use the drop-down menu to select Notepad++ (or whichever text editor you prefer) and click Next.
10. This installation step allows you to change the PATH environment. The PATH is the default set of directories included when you run a command from the command line. Leave this on the middle (recommended) selection and click “Next”.
11. The next option relates to server certificates. Most users should use the default. If you’re working in an Active Directory environment, you may need to switch to Windows Store certificates. Click Next.
12. The next selection converts line endings. It is recommended that you leave the default selection. This relates to the way data is formatted and changing this option may cause problems. Click Next.
13. Choose the terminal emulator you want to use. The default MinTTY is recommended, for its features. Click Next.
14. Once the installation is complete, tick the boxes to view the Release Notes or Launch Git Bash, then click Finish.

Git Commands:

>git --version

This command provides the version of the git installed



```
Command Prompt
Microsoft Windows [Version 10.0.18362.1256]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\hp>git --version
git version 2.23.0.windows.1

C:\Users\hp>
```

>git --global

This command lists out all the possible commands that we can execute under git

```
Command Prompt
C:\Users\hp>git config --global
usage: git config [<options>]

Config file location
--global          use global config file
--system          use system config file
--local           use repository config file
--worktree        use per-worktree config file
-f, --file <file> use given config file
--blob <blob-id>  read config from given blob object

Action
--get             get value: name [value-regex]
--get-all        get all values: key [value-regex]
--get-regexp      get values for regexp: name-regex [value-regex]
--get-urlmatch    get value specific for the URL: section[.var] URL
--replace-all    replace all matching variables: name value [value_regex]
--add             add a new variable: name value
--unset           remove a variable: name [value-regex]
--unset-all      remove all matches: name [value-regex]
--rename-section  rename section: old-name new-name
--remove-section  remove a section: name
-l, --list        list all
-e, --edit        open an editor
--get-color       find the color configured: slot [default]
--get-colorbool   find the color setting: slot [stdout-is-tty]

Type
-t, --type <>    value is given this type
--bool           value is "true" or "false"
--int            value is decimal number
--bool-or-int    value is --bool or --int
--path           value is a path (file or directory name)
--expiry-date    value is an expiry date

Other
-z, --null        terminate values with NUL byte
--name-only       show variable names only
--includes        respect include directives on lookup
--show-origin     show origin of config (file, standard input, blob, command line)
```

>mkdir git-demo-project

>cd git-demo-project

This command will make a new working directory on the local machine

```
Select Command Prompt

C:\Users\hp>mkdir git-demo-project

C:\Users\hp>cd git-demo-project/

C:\Users\hp\git-demo-project>
```

>git init

This command is used to start a new repository.

>git status

This command lists all the files that have to be committed.

```
Select Command Prompt

C:\Users\hp\git-demo-project>git init
Initialized empty Git repository in C:/Users/hp/git-demo-project/.git/

C:\Users\hp\git-demo-project>git status
On branch master

No commits yet

nothing to commit (create/copy files and use "git add" to track)
```

>git add <file name with extension>

This command adds a file to the staging area.

```
Select Command Prompt

C:\Users\hp\git-demo-project>git add C:\Users\hp\git-demo-project\resize.py

C:\Users\hp\git-demo-project>git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   resize.py

C:\Users\hp\git-demo-project>
```

>git commit -m "First Commit"

This command records or snapshots the file permanently in the version history.

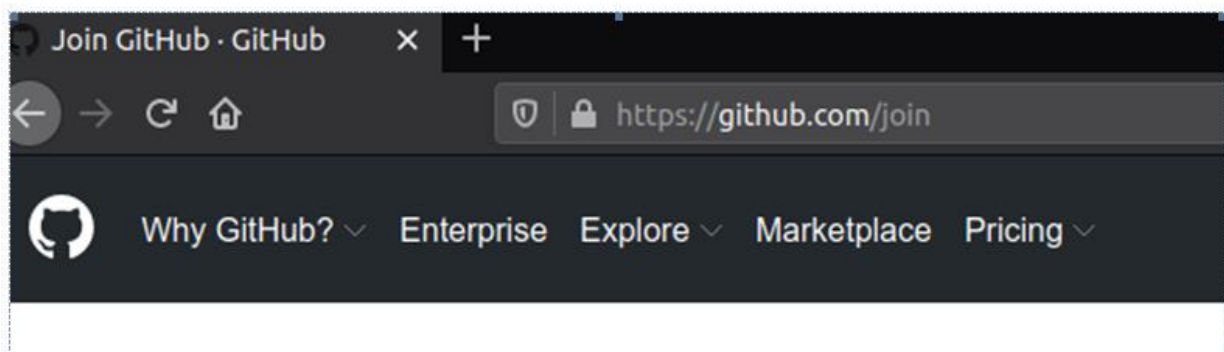
```
Command Prompt

C:\Users\hp\git-demo-project>git commit -m "First Commit"
[master (root-commit) b1c7527] First Commit
1 file changed, 51 insertions(+)
create mode 100644 resize.py

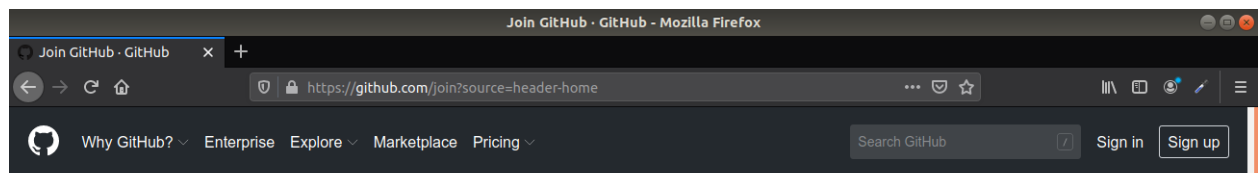
C:\Users\hp\git-demo-project>
```

Creation of GitHub Account

Go to <https://github.com/join> in a web browser. You can use any web browser on your computer, phone, or tablet to join.



2. Enter your personal details. In addition to creating a username and entering an email address, you'll also have to create a password. Your password must be at least 15 characters in length *or* at least 8 characters with at least one number and lowercase letters.



Create your account

Username *

govi1999 ✓

Email address *

gspatel499@gmail.com ✓

Password *

.....

Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter. [Learn more.](#)

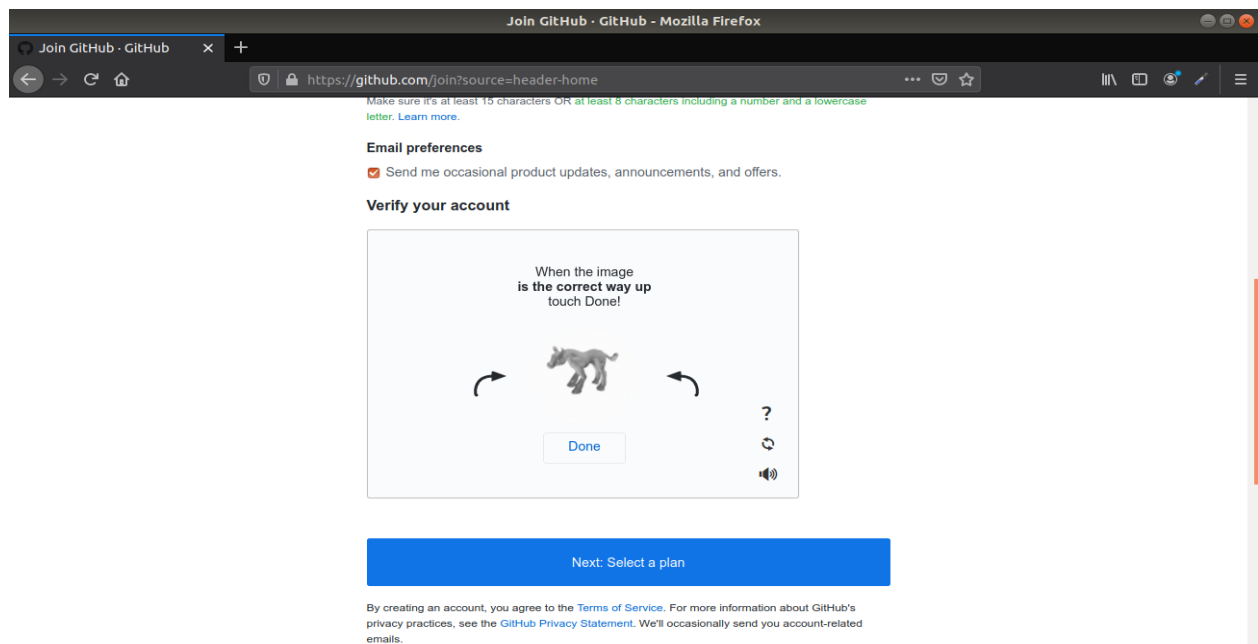
Email preferences

☒ Send me occasional product updates, announcements, and offers.

Verify your account

3. Complete the CAPTCHA puzzle.

The instructions vary by puzzle, so just follow the on-screen instructions to confirm that you are a human.



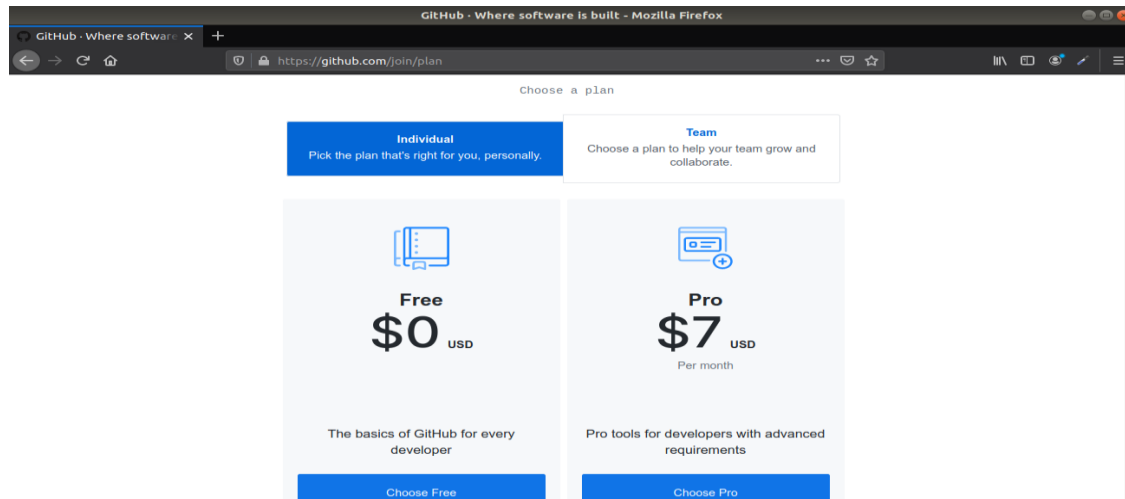
4. Click on Next Select a plan

5. Click the **Choose** button for your desired plan. Once you select a plan, GitHub will send an email confirmation message to the address you entered.

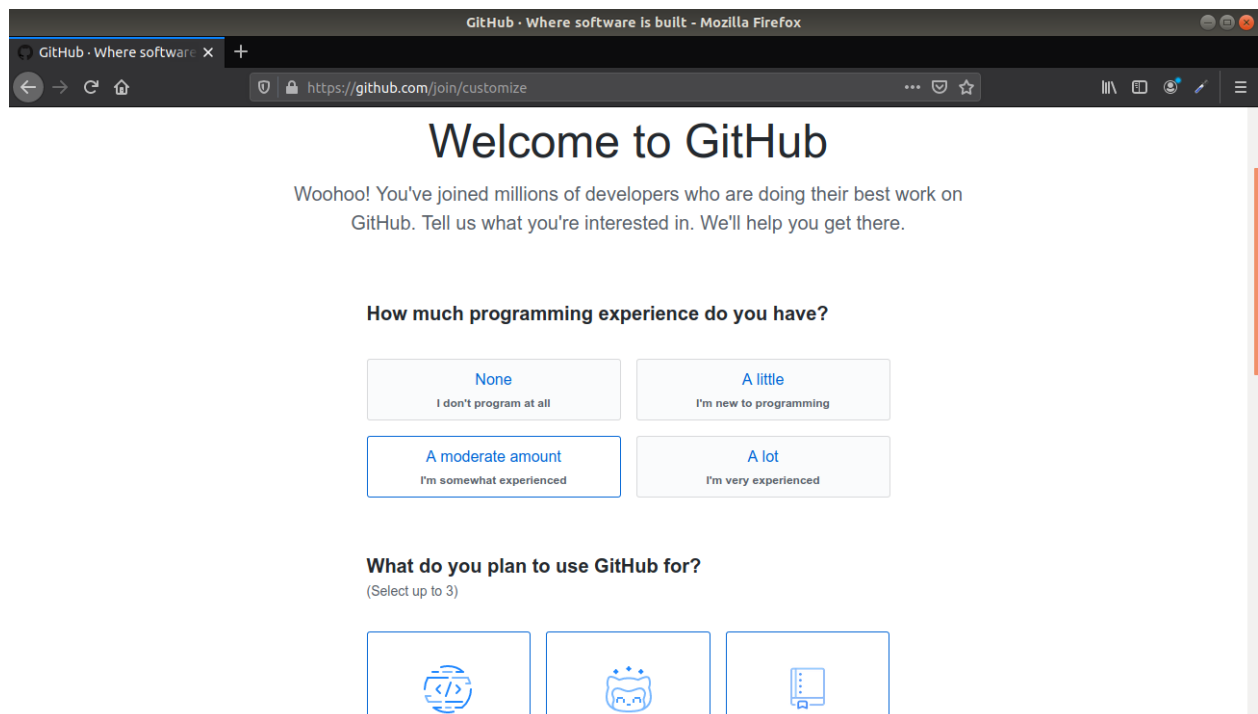
The plan options are

Free: Unlimited public and private repositories, up to 3 collaborators, issues and bug tracking, and project management tools.

Pro: Unlimited access to all repositories, unlimited collaborators, issue & bug tracking, and advanced insight tools.



6. Select your preferences and click on the submit button.



7. Verify Your Email Address.

Email settings

https://github.com/settings/emails

Search or jump to...

Pull requestsIssuesMarketplaceExplore

Personal settings

Profile

Account

Security

Security log

Emails

Notifications

Billing

SSH and GPG keys

Blocked users

Repositories

Organizations

Saved replies

Applications

Emails

Please verify an email address to collaborate on GitHub, receive notifications, and help us protect your account.

gspatel499@gmail.com

Primary

Not visible in emails

Receives notifications

Unverified

Verification email sent.
Resend

Add email address

Add

Primary email address

Because you have email privacy enabled, gspatel499@gmail.com will be used for account-related notifications as well as password resets. 59708017+govi1999@users.noreply.github.com will be used for web-based Git operations (e.g. edits and merges).

gspatel499@gmail.com

Save

Backup email address

Your backup GitHub email address will be used as an additional destination for security-relevant account notifications and can also be used for password resets.

Email settings

https://github.com/settings/emails

Search or jump to...

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SSH and GPG keys

Blocked users

Repositories

Organizations

Saved replies

Applications

Emails

gspatel499@gmail.com

Primary

Not visible in emails

Receives notifications

Add email address

Add

Primary email address

Because you have email privacy enabled, gspatel499@gmail.com will be used for account-related notifications as well as password resets. 59708017+govi1999@users.noreply.github.com will be used for web-based Git operations (e.g. edits and merges).

gspatel499@gmail.com

Save

Backup email address

Your backup GitHub email address will be used as an additional destination for security-relevant account notifications and can also be used for password resets.

Allow all verified emails

Save

Please add a verified email, in addition to your primary email, in order to choose a backup email address.

Keep my email addresses private

Git and GitHub Commands:

1) Create a new branch: `git checkout -b <branch-name>`

```
C:\Users\admin\git-demo-project>git checkout -b newbranch
Switched to a new branch 'newbranch'

C:\Users\admin\git-demo-project>
```

2) Pushing changes to the branch:

Add a new file in the new branch.

```
C:\Users\admin\git-demo-project>git add djikstra.py
```

Commit the changes.

```
C:\Users\admin\git-demo-project>git commit -m 'newbranch'
[newbranch 2a8e9c8] 'newbranch'
1 file changed, 136 insertions(+)
create mode 100644 djikstra.py
```

`git push origin <branchname>` : Pushes the new branch changes to the repository.

```
C:\Users\admin\git-demo-project>git push origin newbranch
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 1.02 KiB | 349.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
remote:
remote: Create a pull request for 'newbranch' on GitHub by visiting:
remote:   https://github.com/atharv67/git-demo-project/pull/new/newbranch
remote:
To https://github.com/atharv67/git-demo-project.git
 * [new branch]      newbranch -> newbranch
```

The screenshot shows the GitHub web interface for the repository 'atharv67/git-demo-project'. At the top, there's a navigation bar with links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. Below this, a yellow banner indicates that 'newbranch' has recent pushes 4 minutes ago, with a 'Compare & pull request' button. The main content area shows the 'newbranch' selected, with 2 branches and 0 tags. It states 'This branch is 1 commit ahead of master.' and provides a 'Pull request' link. A table of commits is shown, with the latest commit '2a8e9c8' 25 minutes ago by 'atharv67' containing the file 'djikstra.py'. Below the commits, there's a prompt to 'Add a README'. On the right sidebar, there are sections for 'About' (Demo Project), 'Releases' (No releases published), 'Packages' (No packages published), and 'Languages' (Python 100.0%).

3) Opening a pull request: `git pull <remote>`

```
C:\Atharv\Sem 8\Devops>git pull https://github.com/atharv67/git-demo-project
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 6 (delta 1), reused 6 (delta 1), pack-reused 0
Unpacking objects: 100% (6/6), done.
From https://github.com/atharv67/git-demo-project
* branch                HEAD              -> FETCH_HEAD
```

4) Merging pull request: `git merge newbranch`

```
C:\Users\admin\git-demo-project>git merge newbranch
Updating c14ed61..2a8e9c8
Fast-forward
  djikstra.py | 136 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
  1 file changed, 136 insertions(+)
  create mode 100644 djikstra.py
```

5) Fetch command :




```
C:\Users\admin\git-demo-project>git fetch origin newbranch
From https://github.com/atharv67/git-demo-project
* branch                newbranch      -> FETCH_HEAD
```

6) Switch to master branch:



```
C:\Users\admin\git-demo-project>git checkout master
Switched to branch 'master'
```


Result:

Files in master branch:


 master ▾  2 branches  0 tags




Go to file Add file ▾ [Code ▾](#)

 atharv67 2nd Commit c14ed61 14 days ago  2 commits



 stack.py 2nd Commit 14 days ago



The files in the master branch are merged with newbranch.


 newbranch had recent pushes 29 minutes ago [Compare & pull request](#)


 newbranch ▾  2 branches  0 tags

Go to file Add file ▾ [Code ▾](#)

This branch is 1 commit ahead of master.  Pull request  Compare

 atharv67 'newbranch' 2a8e9c8 1 hour ago  3 commits

 djikstra.py 'newbranch' 1 hour ago

 stack.py 2nd Commit 14 days ago

>git clone “project url link on Github”

This command will help us clone any public project posted on github on our local machines



```
Command Prompt

D:\>git clone "https://github.com/tkim-snu/GLACNet.git"
Cloning into 'GLACNet'...
remote: Enumerating objects: 194, done.
remote: Total 194 (delta 0), reused 0 (delta 0), pack-reused 194
Receiving objects: 100% (194/194), 6.73 MiB | 3.55 MiB/s, done.
Resolving deltas: 100% (105/105), done.

D:\>
```