

KGiSL MICROCOLLEGE, Coimbatore – 641035.

Software Programming

Git & GitHub practice

Step 1: Git Download

<https://git-scm.com/downloads>

Choose windows

<https://git-scm.com/download/win>

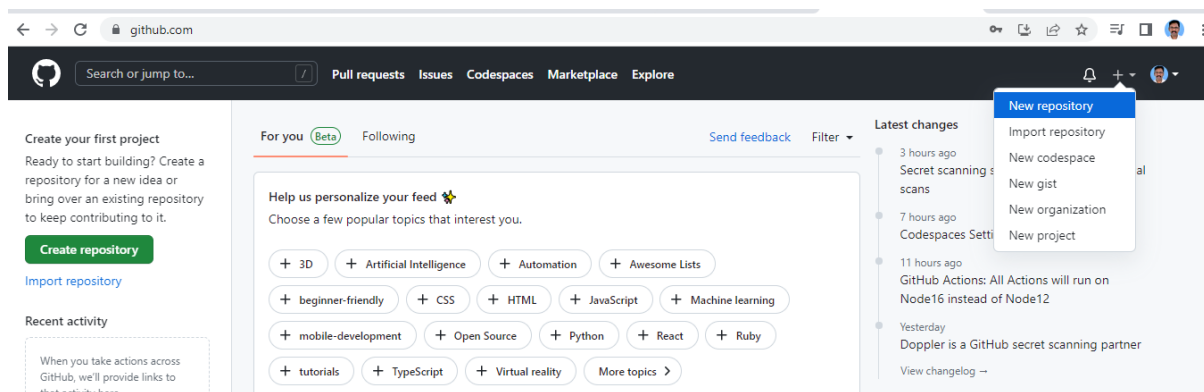
[64-bit Git for Windows Setup.](#) – click

Step 2: Goto <https://github.com/>

For new registration: SignUp

Step 3: Click Sign in to GitHub

Step 4: Create a repository



Step 5: Give the name of the repository and make public accessible.

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Owner *



Repository name *

/ Demo2Project

✔ Demo2Project is available.

Great repository names are short and memorable. Need inspiration? How about **fantastic-garbanzo?**

Description (optional)



Public

Anyone on the internet can see this repository. You choose who can commit.

Step 6: Open Windows PowerShell and check the git is installed or not.

```
PS C:\Users\user> git
usage: git [-v | --version] [-h | --help] [-C <path>] [-c <name>=<value>]
      [--exec-path[=<path>]] [--html-path] [--man-path] [--info-path]
      [-p | --paginate | -P | --no-pager] [--no-replace-objects] [--bare]
      [--git-dir=<path>] [--work-tree=<path>] [--namespace=<name>]
      [--config-env=<name>=<envvar>] <command> [<args>]
```

These are common Git commands used in various situations:

start a working area (see also: `git help tutorial`)

| | |
|-------|--|
| clone | Clone a repository into a new directory |
| init | Create an empty Git repository or reinitialize an existing one |

work on the current change (see also: `git help everyday`)

| | |
|---------|---|
| add | Add file contents to the index |
| mv | Move or rename a file, a directory, or a symlink |
| restore | Restore working tree files |
| rm | Remove files from the working tree and from the index |

examine the history and state (see also: `git help revisions`)

| | |
|--------|--|
| bisect | Use binary search to find the commit that introduced a bug |
| diff | Show changes between commits, commit and working tree, etc |
| grep | Print lines matching a pattern |
| log | Show commit logs |
| show | Show various types of objects |
| status | Show the working tree status |

grow, mark and tweak your common history

| | |
|--------|---|
| branch | List, create, or delete branches |
| commit | Record changes to the repository |
| merge | Join two or more development histories together |
| rebase | Reapply commits on top of another base tip |
| reset | Reset current HEAD to the specified state |
| switch | Switch branches |

Step 7: To use git clone command to clone your empty project to work in local.

```
PS D:\> git clone https://github.com/SakthivelKGCAS/Demo2Project.git
Cloning into 'Demo2Project'...
warning: You appear to have cloned an empty repository.
PS D:\>
```

```
PS D:\> ls

Directory: D:\

Mode                LastWriteTime         Length Name
----                -
d-----          02-08-2021    10.39 AM             ACAD
d-----          31-03-2023    11.08 AM            backup
d-----          27-03-2023    12.23 PM             CSS
d-----          06-04-2023    09.48 AM        D.Sakthivel
d-----          05-05-2023    06.14 AM        Demo2Project
d-----          02-12-2021    03.37 PM        Dr.Vijaya
d-----          06-08-2021    05.46 PM        Final Work
d-----          27-03-2023    12.06 PM             HTML
d-----          10-04-2023    05.14 PM             Java
d-----          31-03-2023    02.14 PM             JS
d-----          30-04-2023    12.15 PM             KGM
d-----          27-11-2021    11.40 PM             ML
d-----          02-12-2021    04.14 PM        Mrs.Romela
d-----          09-04-2023    11.37 AM            MySQL
d-----          17-04-2023    07.18 PM           NodeJS
d-----          24-04-2023    05.32 PM             Ph.D
d-----          31-03-2023    02.09 PM        SpringBoot
d-----          06-12-2021    09.13 PM            Videos
```

Step 8: Get into the Demo2Project directory

```
.
.PS D:\> cd .\Demo2Project\
.PS D:\Demo2Project> ls
.PS D:\Demo2Project> █
```

Step 9: To open VS code editor in the same Demo2Project folder

```
PS D:\Demo2Project> code .
PS D:\Demo2Project> █
```

Step 10: To add file to local Git local repository for tracking

```
PS D:\Demo2Project> ls

Directory: D:\Demo2Project

Mode                LastWriteTime         Length Name
----                -
-a-----          05-05-2023    06.46 AM             7428 Home.html

PS D:\Demo2Project> git add .\Home.html
PS D:\Demo2Project> git status
On branch main

No commits yet

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

PS D:\Demo2Project> █
```

Step 11: Set email and user name for git identification and apply for commit.

```

PS D:\Demo2Project> git config --global user.email "sakthivel.d@kgcas.com"
PS D:\Demo2Project> git config --local user.name "SakthivelKGCAS"
PS D:\Demo2Project> git config --list
diff.astextplain.textconv=astextplain
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
http.sslbackend=openssl
http.sslcainfo=C:/Program Files/Git/mingw64/etc/ssl/certs/ca-bundle.crt
core.autocrlf=true
core.fscache=true
core.symlinks=false
pull.rebase=false
credential.helper=manager
credential.https://dev.azure.com.usehttppath=true
init.defaultbranch=master
user.email=sakthivel.d@kgcas.com
core.repositoryformatversion=0
core.filemode=false
core.bare=false
core.logallrefupdates=true
core.symlinks=false
core.ignorecase=true
remote.origin.url=https://github.com/SakthivelKGCAS/Demo2Project.git
remote.origin.fetch=+refs/heads/*:refs/remotes/origin/*
branch.main.remote=origin
branch.main.merge=refs/heads/main
user.name=SakthivelKGCAS
PS D:\Demo2Project> git commit -m "First Commit"
[main (root-commit) 6c2214a] First Commit
 1 file changed, 211 insertions(+)
 create mode 100644 Home.html
PS D:\Demo2Project>

```

Step 12: git push to global repository

```

PS D:\Demo2Project> git push
info: please complete authentication in your browser...
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 1.60 KiB | 182.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/SakthivelKGCAS/Demo2Project.git
 * [new branch]      main -> main
PS D:\Demo2Project>

```

Step 13: git pull command to bring your file from global repository to local repository

```

PS D:\Demo2Project> git pull
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 743 bytes | 4.00 KiB/s, done.
From https://github.com/SakthivelKGCAS/Demo2Project
 70e7e7f..8217b0e  main      -> origin/main
Updating 70e7e7f..8217b0e
Fast-forward
 Prog1.html | 3 ++-
 1 file changed, 2 insertions(+), 1 deletion(-)
PS D:\Demo2Project>

```

Step 14: After updating all your necessary code to commit and push to global repository

```
PS D:\Demo2Project> git commit -am "added h2 tag"
[main 4f064a1] added h2 tag
 1 file changed, 1 insertion(+)
PS D:\Demo2Project> git push
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 341 bytes | 113.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/SakthivelKGCAS/Demo2Project.git
 8217b0e..4f064a1  main -> main
PS D:\Demo2Project>
```

You can see all your commits in the GitHub

Step 15: Working with branch * indicates you are in the current branch

```
PS D:\Demo2Project> git branch
* main
PS D:\Demo2Project>
```

Step 16: To create a new branch without affecting the main branch

```
PS D:\Demo2Project> git checkout -b "newb"
Switched to a new branch 'newb'
PS D:\Demo2Project> git branch
  main
* newb
PS D:\Demo2Project>
```

Step 17: Apply any code and commit in new branch

```
PS D:\Demo2Project> git commit -am "added h3 tag"
[newb 7b1c607] added h3 tag
1 file changed, 1 insertion(+)
```

Step 18: Come to main branch

```
PS D:\Demo2Project> git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
```

Step 19: Do some changes in code if required and apply commit

```
PS D:\Demo2Project> git commit -am "removed extra h2 tag"
[main e019f49] removed extra h2 tag
1 file changed, 1 insertion(+), 1 deletion(-)
```

Step 20: To get into newb (new branch)

```
PS D:\Demo2Project> git checkout newb
Switched to branch 'newb'
PS D:\Demo2Project>
```

Step 21: To switch to main branch then merge the newb (new branch) with it.

```
PS D:\Demo2Project> git merge newb
Auto-merging Prog1.html
CONFLICT (content): Merge conflict in Prog1.html
Automatic merge failed; fix conflicts and then commit the result.
PS D:\Demo2Project>
```

It shows merge conflict, remove whichever the code not necessary within <<<< global and >> local commands

```
<> Prog1.html > ...
1  !DOCTYPE html>
2  <html lang="en">
3
4  <head>
5      <title>RESUME</title>
6
7  </head>
8
9  <body>
10     <h1> welcome to HTML </h1>
11     <h1> Simple Web Page </h1>
12     <h2> Github </h2>
13     <<<<<< HEAD (Current Change)
14
15     =====
16     <h2> Github </h2>
17     <h3> New branch </h3>
18     >>>>>> newb (Incoming Change)
19 </body>
20 </html>
21
```

```

PS D:\Demo2Project> git merge newb
error: Merging is not possible because you have unmerged files.
hint: Fix them up in the work tree, and then use 'git add/rm <file>'
hint: as appropriate to mark resolution and make a commit.
fatal: Exiting because of an unresolved conflict.
PS D:\Demo2Project> git commit -am "new h3 tag updated"
[main c4d71a9] new h3 tag updated
PS D:\Demo2Project> git push
Enumerating objects: 11, done.
Counting objects: 100% (11/11), done.
Delta compression using up to 4 threads
Compressing objects: 100% (9/9), done.
Writing objects: 100% (9/9), 886 bytes | 886.00 KiB/s, done.
Total 9 (delta 4), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (4/4), completed with 1 local object.
To https://github.com/SakthivelKGCAS/Demo2Project.git
   f776f49..c4d71a9  main -> main
PS D:\Demo2Project>

```

Finally, open GitHub see all your commits.

SakthivelKGCAS / Demo2Project Public

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main

Commits on May 5, 2023

| | |
|--|-------------------|
| new h3 tag updated SakthivelKGCAS committed 1 minute ago | c4d71a9 |
| removed extra h2 tag SakthivelKGCAS committed 7 minutes ago | e019f49 |
| added h3 tag SakthivelKGCAS committed 9 minutes ago | 7b1c607 |
| added two h2 tag SakthivelKGCAS committed 19 minutes ago | Verified f776f49 |
| added h2 tag SakthivelKGCAS committed 22 minutes ago | 4f064a1 |