



Git via command line

We will discuss how to use Git without the support of VS Code and its extensions.



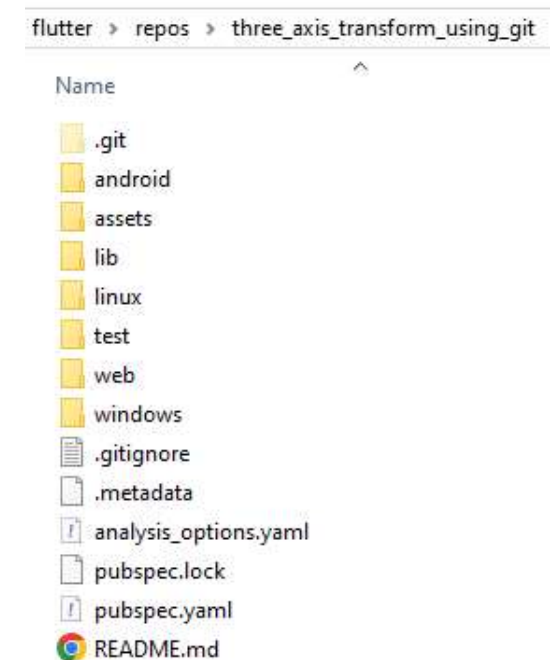
Clone a repository from GitHub

Open a command prompt in the directory, where you want to store a local copy of the repository.

Enter “git clone URL-of-repo”:

```
C:\WINDOWS\system32\cmd.exe

C:\flutter\repos>git clone https://github.com/GuentherSchmitt/three_axis_transform_using_git.git
Cloning into 'three_axis_transform_using_git'...
remote: Enumerating objects: 150, done.
remote: Counting objects: 100% (150/150), done.
remote: Compressing objects: 100% (91/91), done.
remote: Total 150 (delta 31), reused 148 (delta 29), pack-reused 0 (from 0)
Receiving objects: 100% (150/150), 120.00 KiB | 7.06 MiB/s, done.
Resolving deltas: 100% (31/31), done.
```





Checkout a branch via command line

“**git status**” shows you the current branch:

```
C:\Flutter\repos\three_axis_transform_using_git>git status
On branch extract_method
nothing to commit, working tree clean
```

“**git checkout *branchname***” does what its name says:

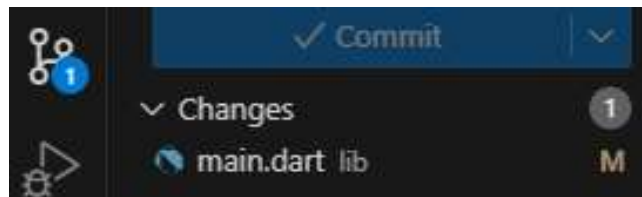
```
C:\Flutter\repos\three_axis_transform_using_git>git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

C:\Flutter\repos\three_axis_transform_using_git>git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
```



Stage changes

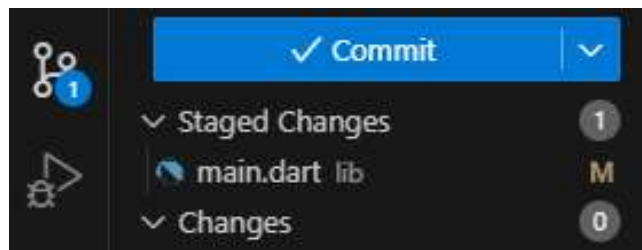


```
C:\flutter\repos\three_axis_transform_using_git>git status
On branch main
Your branch is up to date with 'origin/main'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   lib/main.dart

no changes added to commit (use "git add" and/or "git commit -a")
```

```
C:\flutter\repos\three_axis_transform_using_git>git add lib/main.dart
```



```
C:\flutter\repos\three_axis_transform_using_git>git status
On branch main
Your branch is up to date with 'origin/main'.

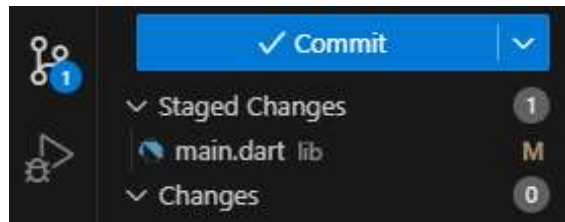
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   lib/main.dart
```

BTW:

the command "**git add .**" would stage all changed files in the current directory and its sub-directories.



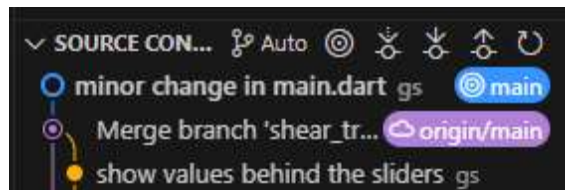
Commit staged files and push them



```
C:\flutter\repos\three_axis_transform_using_git>git status
On branch main
Your branch is up to date with 'origin/main'.

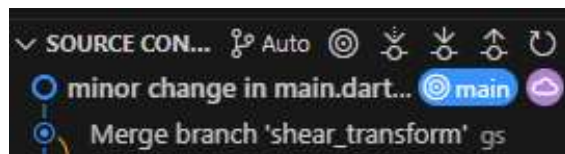
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   lib/main.dart
```

```
C:\flutter\repos\three_axis_transform_using_git>git commit -m "minor change in main.dart"
[main bbb296b] minor change in main.dart
1 file changed, 21 insertions(+), 3 deletions(-)
```



```
C:\flutter\repos\three_axis_transform_using_git>git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
```

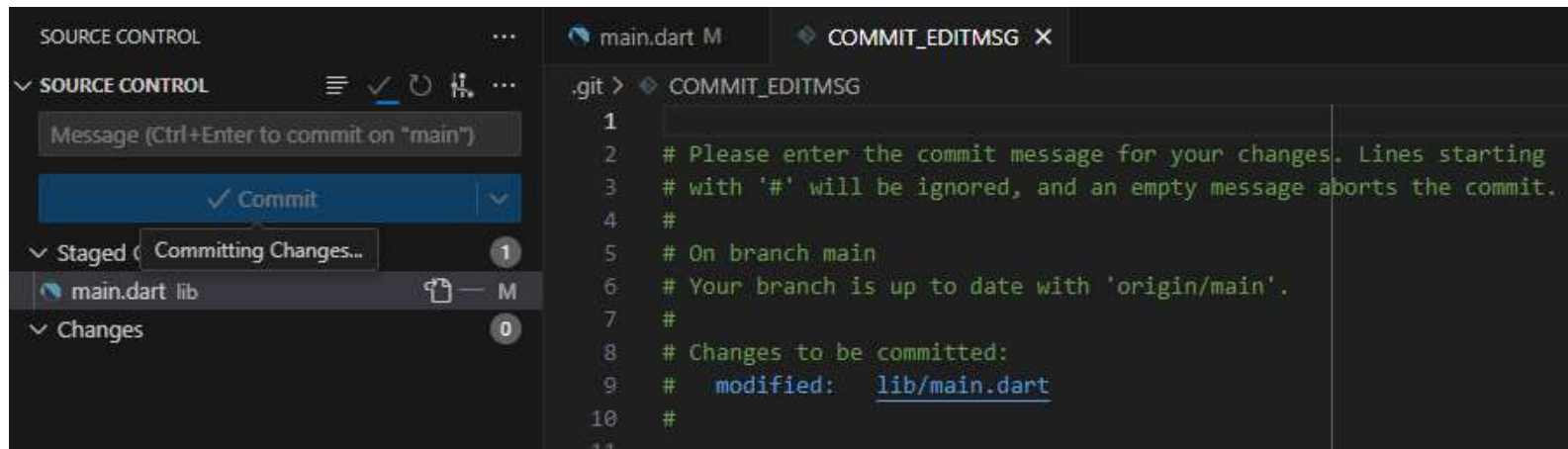


```
C:\flutter\repos\three_axis_transform_using_git>git push
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 6 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 604 bytes | 604.00 KiB/s, done.
Total 4 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
```



Don't be surprised: Commit without a message

When you do not use the “-m” option in “git commit” or when you press on Commit button in VS Code without entering a commit message, an editor will be opened in VS Code:



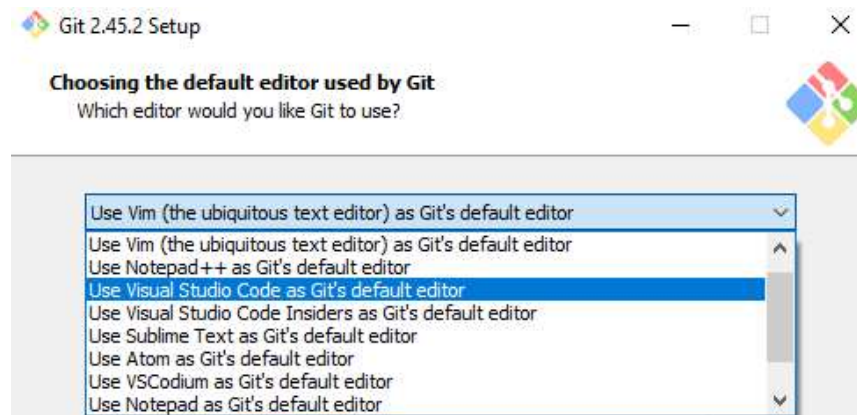
Enter the commit message in line 1, save the temporary file “COMMIT_EDITMSG” and close it, then the commit is performed.

When you close the editor without modifying line 1, the commit is cancelled.



Git's default editor

During installation of Git you have decided what editor will be opened in this case:

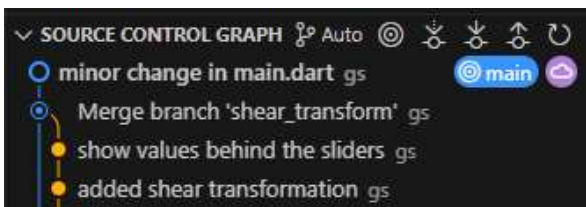
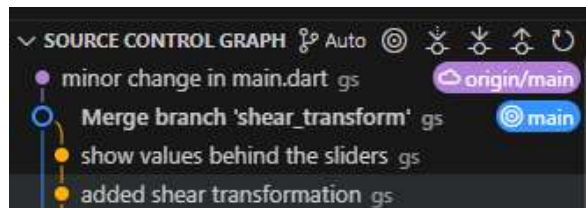
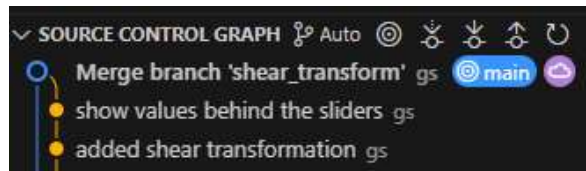


This info is stored in file C:\Users\YOUR_USER_NAME\.gitconfig

```
.gitconfig
[core]
    autocrlf = true
    editor = \"C:\\Users\\GS\\AppData\\Local\\Programs\\Microsoft VS Code\\bin\\code\" --wait
[[difftool \"sourcetree\"]
    cmd = \"\"
[mergetool \"sourcetree\"]
    cmd = \"\"
    trustExitCode = true
[user]
    name = gs
    email = gs@xyz.de
```




Fetch and pull



```
D:\_tmp\three_axis_transform_using_git>git fetch
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 4 (delta 2), reused 4 (delta 2), pack-reused 0 (from 0)
Unpacking objects: 100% (4/4), 584 bytes | 58.00 KiB/s, done.
```

```
D:\_tmp\three_axis_transform_using_git>git pull
Updating 524c877..bbb296b
Fast-forward
 lib/main.dart | 24 ++++++++
 1 file changed, 21 insertions(+), 3 deletions(-)
```


Log all commits with “git log”



Graph		Description	Date	Aut...	
	main origin origin/HEAD	minor change in main.dart	26 Feb 202...	gs	bbb296bc
		Merge branch 'shear_transform'	25 Feb 202...	gs	524c877d
		new axis picture showing y axis down	25 Feb 202...	gs	df1708ba
	shear_transform	show values behind the sliders	21 Feb 202...	gs	7c8ba224
	origin/shear_transform	added shear transformation	21 Feb 202...	gs	86953b71
		added translation for y	21 Feb 202...	gs	4a666dde
		added translation for x	21 Feb 202...	gs	a581e3e2

```
C:\flutter\repos\for_powerpoints\three_axis_transform_using_git>git log
commit bbb296bc49c8df087a309264a9eaaa7e7bfe09fa <HEAD -> main, origin/main, origin/HEAD>
Author: gs <gs@xyz.de>
Date: Wed Feb 26 22:32:56 2025 +0100

    minor change in main.dart

commit 524c877d672db90066187ff4bb1f3182658c90ee
Merge: df1708b 7c8ba22
Author: gs <gs@xyz.de>
Date: Tue Feb 25 22:06:04 2025 +0100

    Merge branch 'shear_transform'

commit df1708baf9fea49c081bfc07c54dd581d18c23e
Author: gs <gs@xyz.de>
Date: Tue Feb 25 22:03:50 2025 +0100

    new axis picture showing y axis down

commit 7c8ba224fec995aa09dc604c4f2c19f378621417 <shear_transform>
Author: gs <gs@xyz.de>
Date: Fri Feb 21 23:23:02 2025 +0100

    show values behind the sliders

commit 86953b719f45e740e10589443360fea210ff8875 <origin/shear_transform>
Author: gs <gs@xyz.de>
Date: Fri Feb 21 23:17:23 2025 +0100

    added shear transformation

commit 4a666dde6691b8881df483f68c1a92d500a2bbe8
Author: gs <gs@xyz.de>
Date: Fri Feb 21 21:36:03 2025 +0100

    added translation for y

commit a581e3e2d62cefeb2216b143ac213d42e71506e8
Author: gs <gs@xyz.de>
Date: Fri Feb 21 21:33:57 2025 +0100

    added translation for x
```



The first commits in the repository for git

Git itself is managed with Git. The URL of its repository is <https://github.com/git/git>

```
C:\flutter\repos\git>git log --reverse
commit e83c5163316f897b7a7ab23ca2e25604af290
Author: Linus Torvalds <torvalds@linux-foundation.org>
Date: Thu Apr 7 15:13:13 2005 -0700

    Initial revision of "git", the information manager from hell

commit 8bc9a0c769ac1df7820f2dbf8f7b7d64835e3c68
Author: Linus Torvalds <torvalds@linux-foundation.org>
Date: Thu Apr 7 15:16:10 2005 -0700

    Add copyright notices.

    The tool interface sucks (especially "committing" information, which is just
    me doing everything by hand from the command line), but I think this is in
    theory actually a viable way of describing the world. So copyright it.

commit e497ea2a9b6c378f01d092c210af20cbee762475
Author: Linus Torvalds <torvalds@linux-foundation.org>
Date: Thu Apr 7 21:03:28 2005 -0700

    Make read-tree actually unpack the whole tree.

    I needed this to make a "sparse" archive conversion from my old
    BitKeeper tree data. The scripts to do the conversion are just
    incredibly ugly, but they seem to validate the notion that you
    can actually use this silly 'git' thing to save your history in.

commit bf0c6e839c692142784caf07b523cd69442e57a5
Author: Linus Torvalds <torvalds@linux-foundation.org>
Date: Fri Apr 8 09:16:38 2005 -0700

    Make "cat-file" output the file contents to stdout.

    New syntax: "cat-file -t <sha1>" shows the tag, while "cat-file <tag> <sha1>"
    outputs the file contents after checking that the supplied tag matches.
```



Other git command parameters

```
C:\flutter\repos>git
usage: git [--version] [--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>]
        <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
    sparse-checkout    Initialize and modify the sparse-checkout

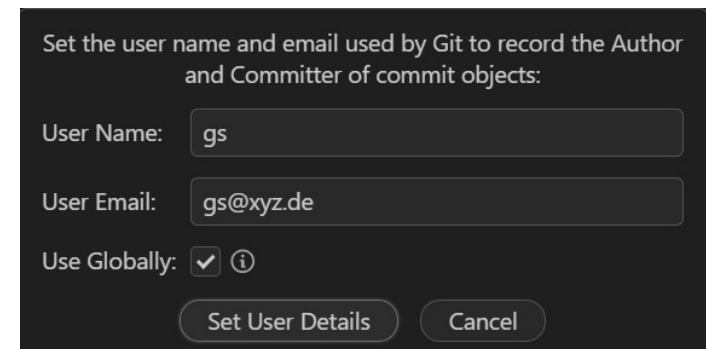
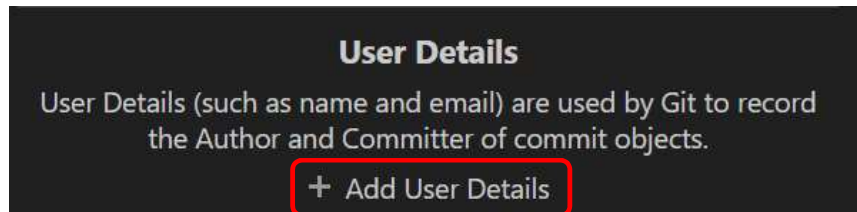
grow, mark and tweak your common history
    branch             List, create, or delete branches
    commit             Record changes to the repository
    merge              Join two or more development histories together
    rebase              Reapply commits on top of another base tip
    reset              Reset current HEAD to the specified state
    switch              Switch branches
    tag                Create, list, delete or verify a tag object signed with GPG

collaborate (see also: git help workflows)
    fetch              Download objects and refs from another repository
    pull               Fetch from and integrate with another repository or a local branch
    push              Update remote refs along with associated objects
```



Reminder: setting user name and email

In slide 8 of powerpoint “13c Git repository creation.pptx” we saw how to do this inside extension Git Graph:



git set user name and email



Bash

```
git config --global user.name "Your Name"
git config --global user.email "your_email@example.com"
```

Replace "Your Name" with your desired username and "your_email@example.com" with your email address. The `--global` option sets these configurations for all your Git repositories.



Reminder: setting user name and email (part II)

To set the username and email for a specific repository only, navigate to the repository's directory in your terminal and run the commands without the `--global` option:

Bash



```
git config user.name "Your Name"  
git config user.email "your_email@example.com"
```

To verify your settings, you can use the following commands:

Bash



```
git config user.name  
git config user.email
```

These will output the currently configured username and email.