

Git

Git HOL-1

- Setup your machine with Git Configuration
- Integrate notepad++.exe to Git and make it a default editor
- Add a file to source code repository

→ solution:

Setting global configuration

```
$ git config --global --list
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
user.name=Shom
user.email=abc@gmail.com
core.editor=Notepad
```

Committing a file

```
$ echo "welcome to version control" >> welcome.text
```

```
$ ls -al
total 5
drwxr-xr-x 1 schow 197609  0 Aug  7 09:02 ./
drwxr-xr-x 1 schow 197609  0 Aug  7 08:48 ../
drwxr-xr-x 1 schow 197609  0 Aug  7 08:49 .git/
-rw-r--r-- 1 schow 197609 27 Aug  7 09:02 welcome.text
```

```
MINGW64 ~/Desktop/git and github/GitDemo (master)
$ git add welcome.text
warning: in the working copy of 'welcome.text', LF will be replaced by CRLF the next time Git touches it

MINGW64 ~/Desktop/git and github/GitDemo (master)
$ git commit -m "text file"
[master (root-commit) 81dd21d] text file
1 file changed, 1 insertion(+)
create mode 100644 welcome.text
```

```
schow@LAPTOP-Q7LUT3G6 MINGW64 ~/Desktop/git and github/GitDemo (master)
$ git remote add origin https://github.com/shomexe/GitDemo.git







schow@LAPTOP-Q7LUT3G6 MINGW64 ~/Desktop/git and github/GitDemo (master)
$ git push origin master
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% (5/5), 437 bytes | 109.00 KiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'master' on GitHub by visiting:
remote:   https://github.com/shomexe/GitDemo/pull/new/master
remote:
To https://github.com/shomexe/GitDemo.git
* [new branch]      master -> master
```

Git HOL-2

- Implement git ignore command to ignore unwanted files and folders

→ solution:

created **log** folder and a text file inside it then created a file with **.log** extension

	.git	10-08-2025 09:57	File folder	
	log	10-08-2025 09:49	File folder	
	.gitignore	10-08-2025 09:57	Git Ignore Source ...	1 KB
	abc.log	10-08-2025 09:50	Text Document	1 KB
	welcome.text	07-08-2025 09:02	TEXT File	1 KB
	welcome2.txt	07-08-2025 09:09	Text Document	1 KB






added .log file and log folder inside **.gitignore** to be ignored by git when new commit is done

```
notes1.txt  .gitignore  X  [play] [grid] [dots]
C: > Users > schow > Desktop > git and github > GitDemo > .gitignore
1  *.log
2  log/
```

\$ git add .

\$ git commit -m ".gitignore file added"

```
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 292 bytes | 97.00 KiB/s, done
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
```

	nagasurya .gitignore file added	f280e5d · 26 minutes ago	 3 Commits
	.gitignore	.gitignore file added	26 minutes ago
	welcome.text	text file	3 days ago
	welcome2.txt	commit done	3 days ago

Git HOL-3

- Construct a branch, do some changes in the branch, and merge it with master (or trunk)

→ solution:

```
$ git checkout -b NewBranch
```

```
$ git branch -a
```

```
* NewBranch
  main
  master
remotes/origin/master
```

```
$ echo "...file content" >> file.txt
```

```
$ git add .
```

```
$ git commit -m "file added to new branch"
```

```
[NewBranch 88a6f6f] file added to new branch
1 file changed, 1 insertion(+)
create mode 100644 file.txt
```

```
$ git switch master
```

```
$ git diff master..NewBranch
```

```
diff --git a/file.txt b/file.txt
new file mode 100644
index 0000000..ac62a20
--- /dev/null
+++ b/file.txt
@@ -0,0 +1 @@
+...file content
```

```
$ git merge NewBranch
```

```
Updating f280e5d..88a6f6f
Fast-forward
 file.txt | 1 +
1 file changed, 1 insertion(+)
create mode 100644 file.txt
```

```
$ git log --oneline --graph --decorate
```

```
* 88a6f6f (HEAD -> master, NewBranch) file added to new branch
* f280e5d (origin/master, main) .gitignore file added
* d640d24 commit done
* 81dd21d text file
```

```
$ git branch -d NewBranch
```

Git HOL-4

- Implement conflict resolution when multiple users are updating the trunk (or master) in such a way that it results into a conflict with the branch's modification.

→ solution:

```
$ git checkout -b GitWork
$ echo "hello world" > hello.xml
$ git add hello.xml
$ git commit -m "in branch GitWork"
$ git switch master
$ echo "hello world 2" > hello.xml
$ git add .
$ git commit -m "in branch master"
$ git log --oneline --graph --decorate --all
```

```
* 037c9c8 (HEAD -> master) in branch master
| * a4a6e93 (Gitwork) in branch Gitwork
|/
* 88a6f6f (origin/master) file added to new branch
* f280e5d (main) .gitignore file added
* d640d24 commit done
* 81dd21d text file
```

```
$ git diff master GitWork
```

```
diff --git a/hello.xml b/hello.xml
index d0e1e95..3b18e51 100644
--- a/hello.xml
+++ b/hello.xml
@@ -1,1 @@
- hello world
+ hello world 2
```

\$ git merge GitWork

```
Auto-merging hello.xml
CONFLICT (add/add): Merge conflict in hello.xml
Automatic merge failed; fix conflicts and then commit the result.
```

\$ cat hello.xml

```
<<<<<<< HEAD
hello world 2
=====
hello world
>>>>>>> GitWork
```

\$ git mergetool (used to resolve conflict by editing file and saving it)

\$ git status

```
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)

All conflicts fixed but you are still merging.
  (use "git commit" to conclude merge)

Changes to be committed:
  modified:   hello.xml

Untracked files:
  (use "git add <file>..." to include in what will be committed)
  hello.xml.orig
```

\$ git add hello.xml

\$ git commit -m "merge conflict resolved"

\$ echo "*.orig" >> .gitignore

\$ git add .gitignore

\$ git commit -m ".gitignore updated"

\$ git log --oneline --graph --decorate

```
* 328607e (HEAD -> master) .gitignore updated
* 230e99a merge conflict resolved
| \
| * a4a6e93 (GitWork) in branch GitWork
* | 037c9c8 in branch master
| /
* 88a6f6f (origin/master) file added to new branch
* f280e5d (main) .gitignore file added
* d640d24 commit done
* 81dd21d text file
```

\$ git branch -d GitWork

Git HOL-5

- Execute steps involving clean up and push back to remote Git.

→ solution:

\$ git status

```
On branch master
Your branch is ahead of 'origin/master' by 4 commits.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
```






\$ git branch -a

```
main
* master
remotes/origin/master
```

\$ git push

```
Enumerating objects: 14, done.
Counting objects: 100% (14/14), done.
Delta compression using up to 4 threads
Compressing objects: 100% (8/8), done.
Writing objects: 100% (12/12), 1.03 KiB | 1.03 MiB/s, done.
Total 12 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), done.
To https://github.com/shomexe/GitDemo.git
  88a6f6f..328607e  master -> master
```

Changes reflected on remote repository

 .gitignore	.gitignore updated	24 minutes ago
 file.txt	file added to new branch	1 hour ago
 hello.xml	merge conflict resolved	26 minutes ago
 welcome.text	text file	3 days ago
 welcome2.txt	commit done	3 days ago

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