

## 1. Git-HOL

### After installing git:

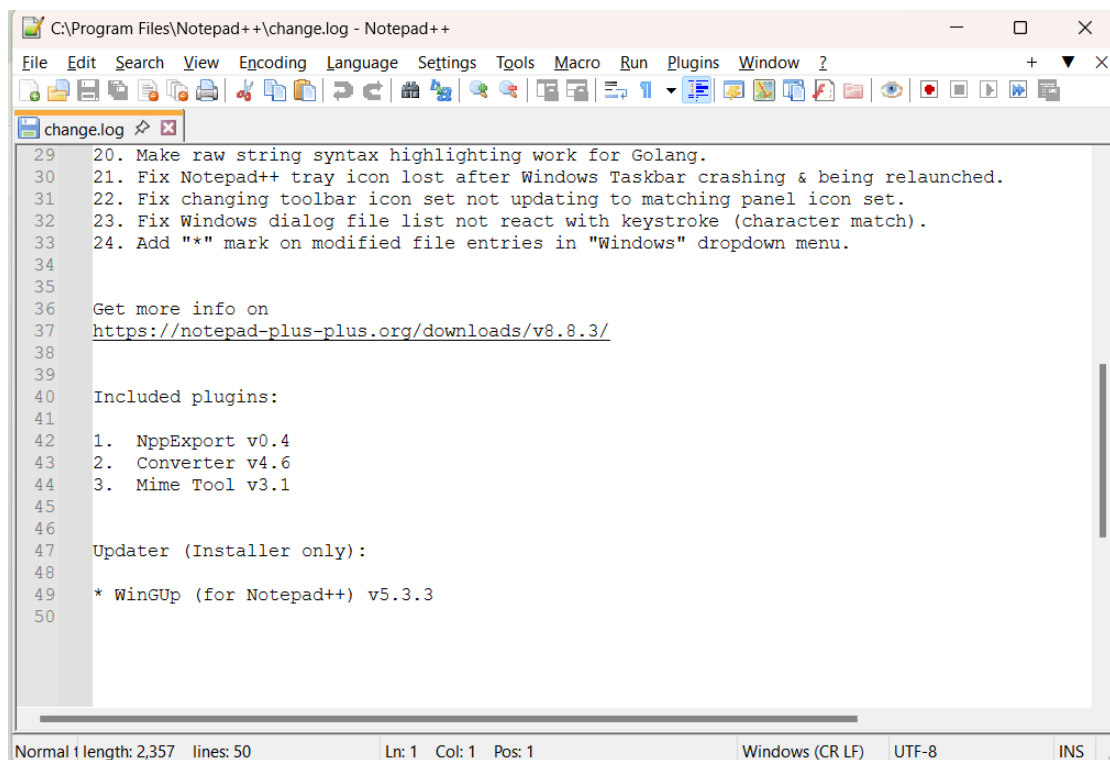
```
PS C:\Users\B PREM SAI SIDDHIK> git --version
git version 2.49.0.windows.1
```

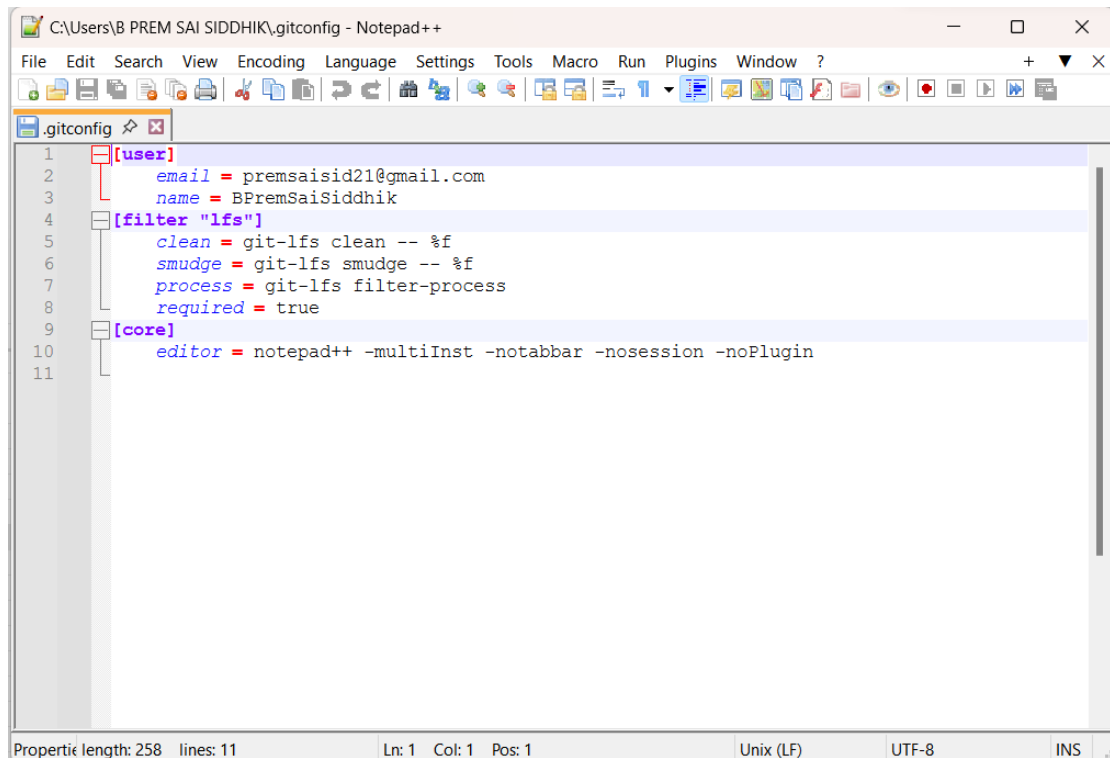
### Git configuration:

```
PS C:\Users\B PREM SAI SIDDHIK> git config --global --list
user.email=premsaisid21@gmail.com
user.name=BPremSaiSiddhik
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
```

### Integrating notepad++.exe to Git and make it a default editor:

```
PS C:\Users\B PREM SAI SIDDHIK> notepad++
PS C:\Users\B PREM SAI SIDDHIK> git config --global core.editor "notepad++ -multiInst -notabbar -nosession -noPlugin"
PS C:\Users\B PREM SAI SIDDHIK> git config --global -e
hint: Waiting for your editor to close the file...
```





```
C:\Users\B PREM SAI SIDDHIK\.gitconfig - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
[user]
email = premsaisid21@gmail.com
name = BPremSaiSiddhik
[filter "lfs"]
clean = git-lfs clean -- %f
smudge = git-lfs smudge -- %f
process = git-lfs filter-process
required = true
[core]
editor = notepad++ -multiInst -notabbar -nosession -noPlugin
```

Properties length: 258 lines: 11 Ln: 1 Col: 1 Pos: 1 Unix (LF) UTF-8 INS

### Adding a file to source code repository:

```
PS C:\Users\B PREM SAI SIDDHIK> mkdir GitDemo6
```

```
Directory: C:\Users\B PREM SAI SIDDHIK
```

Mode	LastWriteTime	Length	Name
d-----	05-08-2025 13:47		GitDemo6

```
PS C:\Users\B PREM SAI SIDDHIK> cd GitDemo6
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git init
Initialized empty Git repository in C:/Users/B PREM SAI SIDDHIK/GitDemo6/.git/
```

**To verify whether the git repository is initialized or not:**

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> Get-ChildItem -Force

Directory: C:\Users\B PREM SAI SIDDHIK\GitDemo6

Mode                LastWriteTime         Length Name
----                -
d--h--            05-08-2025    13:48           .git
```

**Creating a file “welcome.txt” and verifying it:**

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> echo "Welcome to Git Training Lab!"
>welcome.txt
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> ls

Directory: C:\Users\B PREM SAI SIDDHIK\GitDemo6

Mode                LastWriteTime         Length Name
----                -
-a----            05-08-2025    13:49         62 welcome.txt
```

**Verifying the content of “welcome.txt”:**

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> cat welcome.txt
Welcome to Git Training Lab!
```

**Checking the git status:**

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git status
On branch master

No commits yet

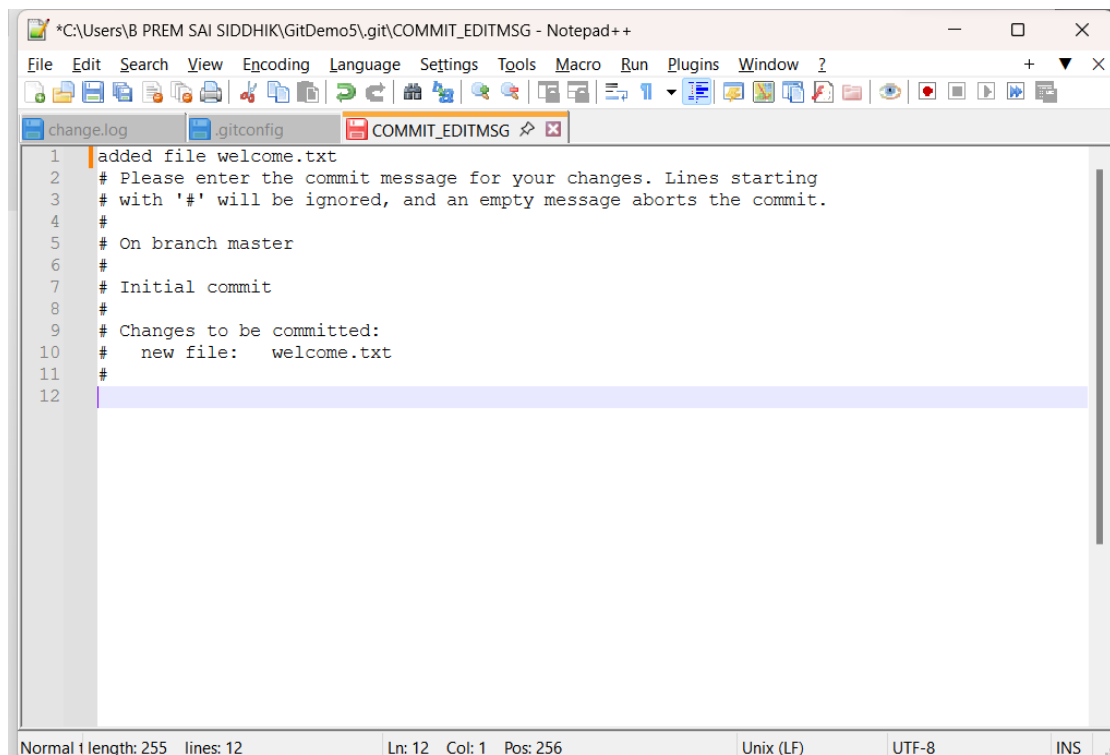
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    welcome.txt

nothing added to commit but untracked files present (use "git add" to track)
```

**Staging the file “welcome.txt” and committing changes to git:**

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git add welcome.txt
```

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git commit
[master (root-commit) 9bfe8cc] added file welcome.txt
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 welcome.txt
```

**Status after committing changes to git:**

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git status
On branch master
nothing to commit, working tree clean
```

**Verifying all existing commits:**

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git log
commit 9bfe8cca2fe7d888d362ad1831561efb8cb4d71c (HEAD -> master)
Author: BPremSaiSiddhik <premsaisid21@gmail.com>
Date:   Tue Aug 5 13:53:57 2025 +0530

    added file welcome.txt
```

### Connecting to the remote repository:

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git remote add origin https://gitlab.com/premsaisid212-group/gitdemo6.git
```



### Pulling the remote repository:

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git pull origin master
fatal: couldn't find remote ref master
```

### Push the local to remote repository:

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git push -u origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 281 bytes | 140.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://gitlab.com/premsaisid212-group/gitdemo6.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
```

### Remote repository after pushing from local repository:

 **GitDemo6**  Free

master ▾


gitdemo6


+ ▾


Find file

Code ▾

⋮

 added file welcome.txt  
BPremSaiSiddhik authored 6 minutes ago

9bfe8cca  History

Name	Last commit	Last update
 welcome.txt	added file welcome.txt	6 minutes ago

## 2. Git-HOL

### Creating a log file "debug.log"

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> echo "This is a log file." > debug.log
```

### Creating a directory "log" in working directory

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> mkdir log

Directory: C:\Users\B PREM SAI SIDDHIK\GitDemo6

Mode                LastWriteTime         Length Name
----                -
d-----            05-08-2025         14:03         log
```

### Creating a file "logfile.txt" in log directory

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> echo "Log folder content" > log/logfile.txt
```

### Verifying existing files in working directory

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> ls

Directory: C:\Users\B PREM SAI SIDDHIK\GitDemo6

Mode                LastWriteTime         Length Name
----                -
d-----            05-08-2025         14:03         log
-a-----            05-08-2025          44 debug.log
-a-----            05-08-2025          62 welcome.txt
```

### Creating a file ".gitignore"

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo> notepad .gitignore
```

### Status after creating ".gitignore" file

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git status
On branch master
Your branch is up to date with 'origin/master'.

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

nothing added to commit but untracked files present (use "git add" to track)
```

### Staging the ".gitignore" file

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git add .gitignore
```

### Committing the change done

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git commit -m "Added .gitignore to
ignore .log files and log folder"
[master 5aa0009] Added .gitignore to ignore .log files and log folder
1 file changed, 2 insertions(+)
create mode 100644 .gitignore
```

### Status after committing

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
```

### Trying to stage debug.log

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git add debug.log
The following paths are ignored by one of your .gitignore files:
debug.log
hint: Use -f if you really want to add them.
hint: Disable this message with "git config set advice.addIgnoredFile false"
```

### Pushing commits to the remote repository

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git push origin master
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 321 bytes | 160.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://gitlab.com/premsaisid212-group/gitdemo6.git
9bfe8cc..5aa0009 master -> master
```

G


GitDemo6

Free

master

gitdemo6

+Find fileCode





Added .gitignore to ignore .log files and log folder

5aa00096

History

BPremSaiSiddhik authored 3 minutes ago

Name	Last commit	Last update
 .gitignore	Added .gitignore to ignore .log files an...	3 minutes ago
 welcome.txt	added file welcome.txt	18 minutes ago



### 3. Git-HOL

#### Creating a new branch 'GitNewBranch'

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git branch GitNewBranch
```

#### Listing all local and remote branches

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git branch -a
GitNewBranch
* master
remotes/origin/master
```

#### Switching to the new branch

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git checkout GitNewBranch
Switched to branch 'GitNewBranch'
```

#### Add a new file in this branch

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> echo "This file is added in GitNewBranch." > branchfile.txt
```

#### Staging the file

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git add branchfile.txt
```

#### Committing the file

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git commit -m "Added branchfile.txt in GitNewBranch"
[GitNewBranch 8294e8a] Added branchfile.txt in GitNewBranch
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 branchfile.txt
```

#### Checking the status

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git status
On branch GitNewBranch
nothing to commit, working tree clean
```

#### Switching back to the master branch

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
```

### Showing differences between master and GitnewBranch

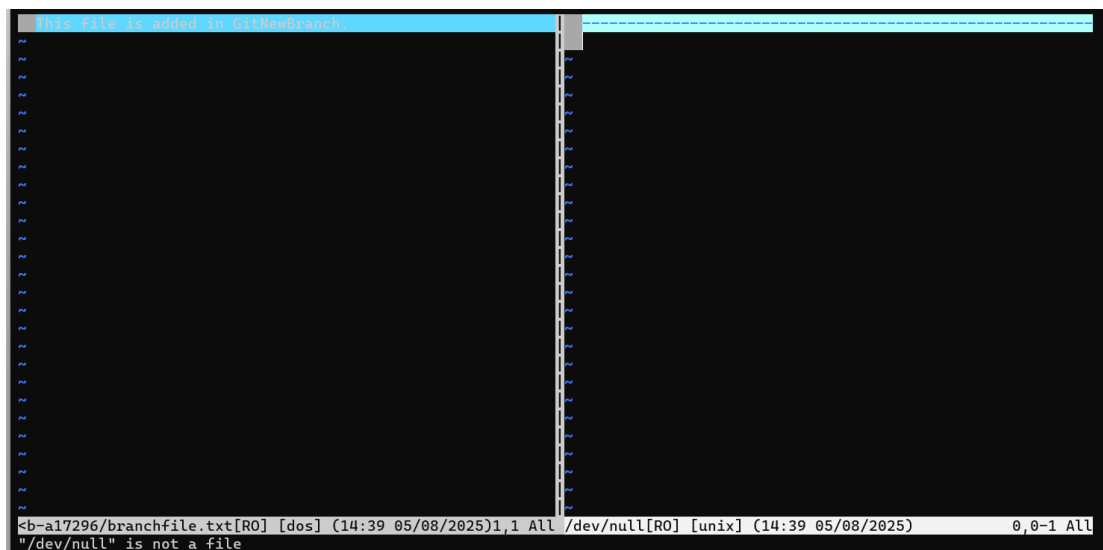
```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git diff GitNewBranch
diff --git a/branchfile.txt b/branchfile.txt
deleted file mode 100644
index b05c692..0000000
Binary files a/branchfile.txt and /dev/null differ
```

### Setting P4Merge as Git's diff and merge tool

```
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git config --global diff.tool p4merge
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git config --global difftool.p4merge.cmd "\"C:/Program Files/Perforce/p4merge.exe\" \"\$LOCAL\" \"\$REMOTE\""
error: no action specified
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git config --global merge.tool p4merge
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git config --global mergetool.p4merge.cmd "\"C:/Program Files/Perforce/p4merge.cmd\" \"C:/Program Files/Perforce/p4merge.cmd\" \"\$LOCAL\" \"\$REMOTE\""
error: no action specified
PS C:\Users\B PREM SAI SIDDHIK\GitDemo6> git config --global difftool.prompt false
```

### Showing visual differences using P4Merge

```
PS C:\Users\B PREM SAI SIDDHIK> git difftool GitNewBranch
```



### Merge GitNewBranch into master

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git merge GitNewBranch
Updating 5aa0009..8294e8a
Fast-forward
 branchfile.txt | Bin 0 -> 76 bytes
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 branchfile.txt
```

### log after merging

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git log --oneline --graph --decorat
e
* 8294e8a (HEAD -> master, GitNewBranch) Added branchfile.txt in GitNewBranc
h
* 5aa0009 (origin/master) Added .gitignore to ignore .log files and log fold
er
* 9bfe8cc added file welcome.txt
```

### Deleting the branch after merging

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git branch -d GitNewBranch
Deleted branch GitNewBranch (was 8294e8a).
```

### Checking status again

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
```

### Pushing final merged changes to GitLab

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git push origin master
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), 400 bytes | 133.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://gitlab.com/premsaisid212-group/gitdemo6.git
 5aa0009..8294e8a master -> master
```

G

GitDemo6

Free

Star 0

Fork 0

master

gitdemo6

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Find file

Code

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Added branchfile.txt in GitNewBranch

BPremSaiSiddhik authored 36 minutes ago

8294e8a6

History

Name	Last commit	Last update
.gitignore	Added .gitignore to ignore .log files an...	45 minutes ago
branchfile.txt	Added branchfile.txt in GitNewBranch	36 minutes ago
welcome.txt	added file welcome.txt	1 hour ago

Project information

3 Commits

1 Branch

0 Tags

1 KiB Project Storage

[+ Add README](#)

[+ Add LICENSE](#)

[+ Add CHANGELOG](#)

#### 4. Git-HOL

##### Switching to master branch

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
```

##### Verifying whether the master branch is in clean state

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git status
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean
```

##### Creating a branch "GitWork"

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git checkout -b GitWork
Switched to a new branch 'GitWork'
```

##### Creating a file "hello.xml"

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> echo "<message>Hello from GitWork b
ranch</message>" > hello.xml
```

##### Updating contents of "hello.xml"

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> echo "<extra>Branch-specific conten
t</extra>" >> hello.xml
```

##### status after updating "hello.xml"

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git status
On branch GitWork
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    hello.xml

nothing added to commit but untracked files present (use "git add" to track)
```

##### Staging the file "hello.xml"

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git add hello.xml
```

### committing the changes done

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git commit -m "Added hello.xml with
branch-specific content in GitWork"
[GitWork c887209] Added hello.xml with branch-specific content in GitWork
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 hello.xml
```

### Switching to master branch

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
```

### Creating “hello.xml” with different content

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> echo "<message>Hello from master br
anch</message>" > hello.xml
```

### staging file “hello.xml”

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git add hello.xml
```

### Comminting the changes

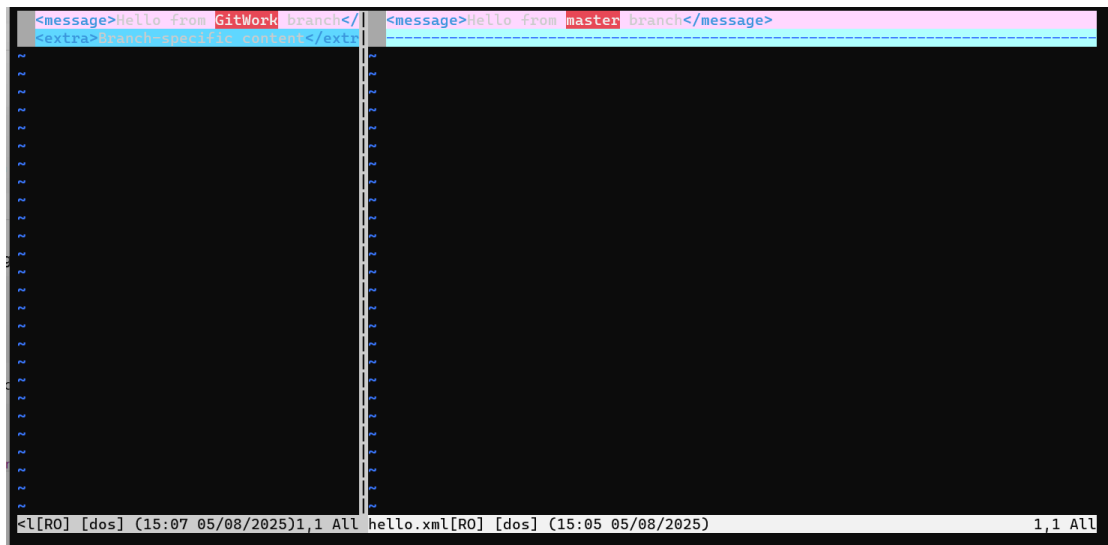
```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git commit -m "Added hello.xml with
master-specific content"
[master 14f533d] Added hello.xml with master-specific content
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 hello.xml
```

### Visual representation of log

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git log --oneline --graph --decorat
e --all
* 14f533d (HEAD -> master) Added hello.xml with master-specific content
| * c887209 (GitWork) Added hello.xml with branch-specific content in GitWor
k
|/
* 8294e8a (origin/master, GitNewBranch) Added branchfile.txt in GitNewBranch
* 5aa0009 Added .gitignore to ignore .log files and log folder
* 9bfe8cc added file welcome.txt
```

### Checking differences using Git diff tool

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git difftool GitWork
```



## Merging “Gitwork” branch to “master” branch

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git merge GitWork
warning: Cannot merge binary files: hello.xml (HEAD vs. GitWork)
Auto-merging hello.xml
CONFLICT (add/add): Merge conflict in hello.xml
Automatic merge failed; fix conflicts and then commit the result.
```

## Using 3-way merge tool

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git mergetool
Merging:
hello.xml

Normal merge conflict for 'hello.xml':
    {local}: created file
    {remote}: created file
/mingw64/libexec/git-core/git-mergetool--lib: line 176: C:/Program: No such
file or directory
hello.xml seems unchanged.
Was the merge successful [y/n]? y
```

## Staging “hello.xml”

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git add hello.xml
```

## Committing the changes

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git commit -m "Resolved merge conflict in hello.xml"
[master 2a69f8f] Resolved merge conflict in hello.xml
```

### Creating a ".gitignore" file

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> echo "*.orig" >> .gitignore
```

### Staging the ".gitignore" file

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git add .gitignore
```

### Committing the changes

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git commit -m "Ignored backup files"
[master 1fcb695] Ignored backup files
1 file changed, 0 insertions(+), 0 deletions(-)
```

### Listing all branches

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git branch
  GitNewBranch
  GitWork
* master
```

### Deleting the merged branch

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git branch -d GitWork
Deleted branch GitWork (was c887209).
```

### Final log check

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git log --oneline --graph --decorate
* 1fcb695 (HEAD -> master) Ignored backup files
* 2a69f8f Resolved merge conflict in hello.xml
| \
| * c887209 Added hello.xml with branch-specific content in GitWork
* | 14f533d Added hello.xml with master-specific content
| /
* 8294e8a (origin/master, GitNewBranch) Added branchfile.txt in GitNewBranch
* 5aa0009 Added .gitignore to ignore .log files and log folder
* 9bfe8cc added file welcome.txt
```



## 5. Git-HOL

### Verifying if master is in a clean state

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> 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
```

### List out all the available branches(local)

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git branch
GitNewBranch
* master
```

### List out all the available branches(local & remote)

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git branch -a
GitNewBranch
* master
remotes/origin/master
```

### Switching to master branch

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git checkout master
Already on 'master'
Your branch is ahead of 'origin/master' by 4 commits.
  (use "git push" to publish your local commits)
```

### Pulling the remote Git repository to the master

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git pull origin master
From https://gitlab.com/premsaisid212-group/gitdemo6
 * branch                master      -> FETCH_HEAD
Already up to date.
```

### Pushing changes to remote repository

```
PS C:\Users\B PREM SAI SIDDHIK\gitDemo6> git push origin master
Enumerating objects: 12, done.
Counting objects: 100% (12/12), done.
Delta compression using up to 8 threads
Compressing objects: 100% (9/9), done.
Writing objects: 100% (10/10), 1.19 KiB | 244.00 KiB/s, done.
Total 10 (delta 3), reused 0 (delta 0), pack-reused 0 (from 0)
To https://gitlab.com/premsaisid212-group/gitdemo6.git
 8294e8a..1fcb695 master -> master
```

G

GitDemo6

Free

▼

Star 0

Fork 0

master ▼

gitdemo6

+

▼

Find file

Code ▼

Ignored backup files

BPremSaiSiddhik authored 5 hours ago

1fcb6954 History

Name	Last commit	Last update
.gitignore	Ignored backup files	5 hours ago
branchfile.txt	Added branchfile.txt in GitNewBranch	6 hours ago
hello.xml	Added hello.xml with master-specific c...	5 hours ago
welcome.txt	added file welcome.txt	6 hours ago

Project information

7 Commits

1 Branch

0 Tags

3 KiB Project Storage

+ Add README

+ Add LICENSE

+ Add CHANGELOG

+ Add CONTRIBUTING

+ Enable Auto DevOps