

3. Git-HOL

Installing Git

```
KIIT@BT-22051573 MINGW64 ~
$ git --version
git version 2.50.1.windows.1
```

Configuring the username and user-email

```
KIIT@BT-22051573 MINGW64 ~
$ 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=true
pull.rebase=false
credential.helper=manager
credential.https://dev.azure.com.usehttppath=true
init.defaultbranch=master
gui.recentrepo=C:/Users/KIIT/https://github.com/the4orage/forage-jpmc-swe-task-1
user.name=AmritaKumari17
user.email=amritakumari170105@gmail.com
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
core.editor=notepad++
```

Initializing git and creating file

```
KIIT@BT-22051573 MINGW64 ~
$ mkdir GitBranchDemo
cd GitBranchDemo
git init
Initialized empty Git repository in C:/Users/KIIT/GitBranchDemo/.git/

KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (master)
$ echo "This is the master branch." > masterfile.txt
git add masterfile.txt
git commit -m "Initial commit on master with masterfile.txt"
warning: in the working copy of 'masterfile.txt', LF will be replaced by CRLF the next time Git touches it
[master (root-commit) 7e7f2d9] Initial commit on master with masterfile.txt
1 file changed, 1 insertion(+)
create mode 100644 masterfile.txt
```

Branching:

1. Create a new branch "GitNewBranch".

```
KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (master)
$ git branch GitNewBranch
```

2. List all the local and remote branches available in the current trunk. Observe the "*" mark which denote the current pointing branch.

```
KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (master)
$ git branch
  GitNewBranch
* master
```

3. Switch to the newly created branch. Add some files to it with some contents.

```
KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (master)
$ git checkout GitNewBranch
Switched to branch 'GitNewBranch'
```

4. Commit the changes to the branch.

```
KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (GitNewBranch)
$ echo "This file is in the GitNewBranch." > branchfile.txt
git add branchfile.txt
git commit -m "Added branchfile.txt in GitNewBranch"
warning: in the working copy of 'branchfile.txt', LF will be replaced by CRLF the next time Git touches it
[GitNewBranch 946ed5b] Added branchfile.txt in GitNewBranch
1 file changed, 1 insertion(+)
create mode 100644 branchfile.txt
```

5. Check the status with "git status" command.

```
KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (GitNewBranch)
$ git status
On branch GitNewBranch
nothing to commit, working tree clean
```

Merging:

1. Switch to the master

```
KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (GitNewBranch)
$ git checkout master
Switched to branch 'master'
```

2. List out all the differences between trunk and branch. These provide the differences in command line interface.

```
KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (master)
$ git diff master GitNewBranch
diff --git a/branchfile.txt b/branchfile.txt
new file mode 100644
index 0000000..1e859f8
--- /dev/null
+++ b/branchfile.txt
@@ -0,0 +1 @@
+This file is in the GitNewBranch.
```

3. List out all the visual differences between master and branch using P4Merge tool.

```
KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (master)
$ git config --global merge.tool p4merge
git config --global diff.tool p4merge
git difftool master GitNewBranch
```

4. Merge the source branch to the trunk.

```
KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (master)
$ git merge GitNewBranch
Updating 7e7f2d9..946ed5b
Fast-forward
 branchfile.txt | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 branchfile.txt
```

5. Observe the logging after merging using “git log --oneline --graph --decorate”

```
KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (master)
$ git log --oneline --graph --decorate
* 946ed5b (HEAD -> master, GitNewBranch) Added branchfile.txt in GitNewBranch
* 7e7f2d9 Initial commit on master with masterfile.txt
```

6. Delete the branch after merging with the trunk and observe the git status.

```
KIIT@BT-22051573 MINGW64 ~/GitBranchDemo (master)
$ git branch -d GitNewBranch
Deleted branch GitNewBranch (was 946ed5b).
```