In this hands-on lab, I have learned how to:

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

Branching:

1. Create a new branch **“GitNewBranch”.**

```
ujwalhiranwar@zenetsu15:~/Documents/code$ git branch GitNewBranch
ujwalhiranwar@zenetsu15:~/Documents/code$ git branch
  GitNewBranch
* master
ujwalhiranwar@zenetsu15:~/Documents/code$
```

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

```
ujwalhiranwar@zenetsu15:~/Documents/code$ git branch -a
  GitNewBranch
* master
```

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

```
ujwalhiranwar@zenetsu15:~/Documents/code$ git switch GitNewBranch
Switched to branch 'GitNewBranch'
ujwalhiranwar@zenetsu15:~/Documents/code$ git branch
* GitNewBranch
  master
ujwalhiranwar@zenetsu15:~/Documents/code$
```

4. Commit the changes to the branch.

```
ujwalhiranwar@zenetsu15:~/Documents/code$ echo "This is a sample file" > sample.txt
                                          echo "Another file for testing" > another.txt
ujwalhiranwar@zenetsu15:~/Documents/code$ git add .
ujwalhiranwar@zenetsu15:~/Documents/code$ git commit -m "made changes to the branch"
[GitNewBranch 67cfaa2] made changes to the branch
 2 files changed, 2 insertions(+)
 create mode 100644 another.txt
 create mode 100644 sample.txt
ujwalhiranwar@zenetsu15:~/Documents/code$
```

5. Check the status with **“git status”** command.

```
ujwalhiranwar@zenetsu15:~/Documents/code$ git status
On branch GitNewBranch
nothing to commit, working tree clean
ujwalhiranwar@zenetsu15:~/Documents/code$
```

Merging:

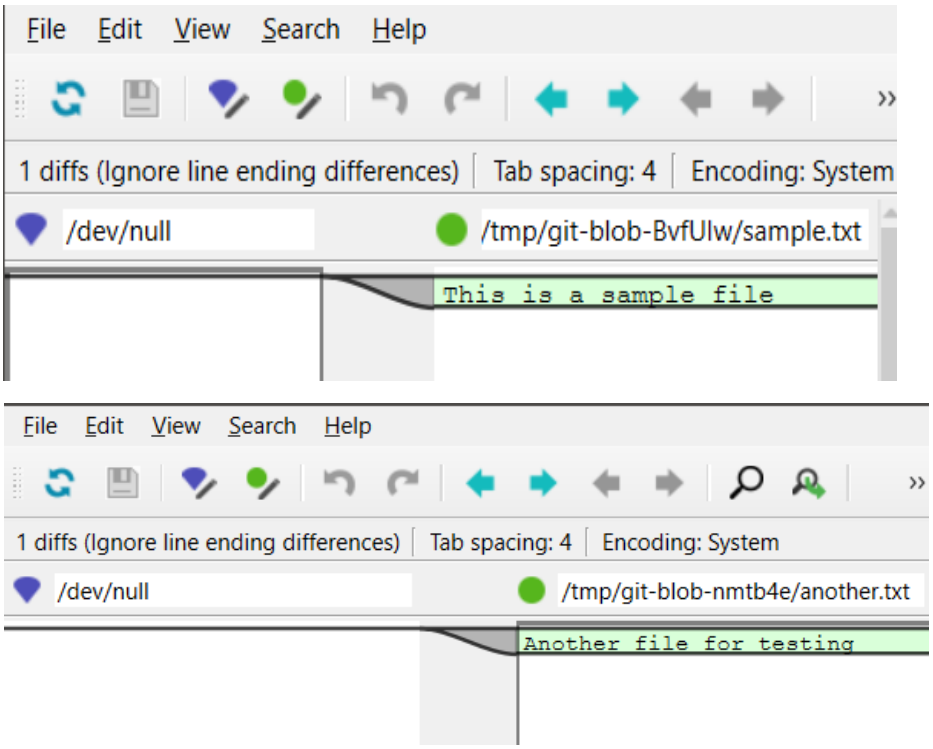
1. Switch to the master

```
ujwalhiranwar@zenetsu15:~/Documents/code$ git switch master
Switched to branch 'master'
```

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

```
ujwalhiranwar@zenetsu15:~/Documents/code$ git diff master GitNewBranch
diff --git a/another.txt b/another.txt
new file mode 100644
index 0000000..c3d7ac9
--- /dev/null
+++ b/another.txt
@@ -0,0 +1 @@
+Another file for testing
diff --git a/sample.txt b/sample.txt
new file mode 100644
index 0000000..891dde7
--- /dev/null
+++ b/sample.txt
@@ -0,0 +1 @@
+This is a sample file
```

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



4. Merge the source branch to the trunk.

```
ujwalhiranwar@zenetsu15:~/Documents/code$ git merge GitNewBranch
Updating 84dd99b..67cfaa2
Fast-forward
 another.txt | 1 +
 sample.txt  | 1 +
 2 files changed, 2 insertions(+)
 create mode 100644 another.txt
 create mode 100644 sample.txt
```

5. Observe the logging after merging using **"git log –oneline –graph –decorate"**

```
ujwalhiranwar@zenetsu15:~/Documents/code$ git log --oneline --graph --decorate
*   74aa7f5 (HEAD -> master) Merge branch 'GitNewBranch'
|\
| * 0d688f8 (GitNewBranch) file added
* | 97c0c87 file added to master
|/
* d88f4b1 file commited
* 67cfaa2 made changes to the branch
* 84dd99b Initial commit
```

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

```
ujwalhiranwar@zenetsu15:~/Documents/code$ git branch -d GitNewBranch
Deleted branch GitNewBranch (was 0d688f8).
ujwalhiranwar@zenetsu15:~/Documents/code$ git status
On branch master
nothing to commit, working tree clean
```