Week:8

**Objectives**

* Explain branching and merging
* Explain about creating a branch request in GitLab
* Explain about creating a merge request in GitLab

In this hands-on lab, you will learn how to:

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

**Prerequisites**

The following are the pre-requisites to complete this hands-on lab:

* Setting up Git environment with P4Merge tool for Windows

Notes\*:

|  |
| --- |
| Please follow the below steps for creating a free account in GitHub.  Do not use cognizant credentials to login to GitHub. |

Estimated time to complete this lab: **30 minutes.**

Please follow the instruction to complete the hands-on. Each instruction expects a command for the Git Bash.

**Branching:**

1. Create a new branch **“GitNewBranch”.**
2. List all the local and remote branches available in the current trunk. Observe the “\*” mark which denote the current pointing branch.
3. Switch to the newly created branch. Add some files to it with some contents.
4. Commit the changes to the branch.
5. Check the status with **“git status”** command.

**Merging:**

1. Switch to the master
2. List out all the differences between trunk and branch. These provide the differences in command line interface.
3. List out all the visual differences between master and branch using **P4Merge tool**.
4. Merge the source branch to the trunk.
5. Observe the logging after merging using **“git log –oneline –graph –decorate”**
6. Delete the branch after merging with the trunk and observe the git status.

Output:

Microsoft Windows [Version 10.0.26100.4652]

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C:\Users\harsh>cd git-ignore-lab

C:\Users\harsh\git-ignore-lab>git checkout -b GitNewBranch

Switched to a new branch 'GitNewBranch'

C:\Users\harsh\git-ignore-lab>git branch -a

\* GitNewBranch

master

C:\Users\harsh\git-ignore-lab>echo "This is a new branch file." > feature.txt

C:\Users\harsh\git-ignore-lab>git add feature.txt

C:\Users\harsh\git-ignore-lab>git commit -m "Added feature.txt in GitNewBranch"

[GitNewBranch fa8399f] Added feature.txt in GitNewBranch

1 file changed, 1 insertion(+)

create mode 100644 feature.txt

C:\Users\harsh\git-ignore-lab>git status

On branch GitNewBranch

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)

C:\Users\harsh\git-ignore-lab>git checkout master

Switched to branch 'master'

C:\Users\harsh\git-ignore-lab>git diff master..GitNewBranch

diff --git a/feature.txt b/feature.txt

new file mode 100644

index 0000000..65758d1

--- /dev/null

+++ b/feature.txt

@@ -0,0 +1 @@

+"This is a new branch file."

C:\Users\harsh\git-ignore-lab>git config --global diff.tool p4merge

C:\Users\harsh\git-ignore-lab>git config --global merge.tool p4merge

C:\Users\harsh\git-ignore-lab>git config --global mergetool.p4merge.cmd '"C:/Program Files/Perforce/p4merge.exe" "$LOCAL" "$REMOTE"'

error: no action specified

C:\Users\harsh\git-ignore-lab>git config --global mergetool.p4merge.trustExitCode false

C:\Users\harsh\git-ignore-lab>git difftool master..GitNewBranch

Viewing (1/1): 'feature.txt'

Launch 'p4merge' [Y/n]?