**Assignment Report: Git Branching and Merging**

**Branching Section**

**Step 1: Create a New Branch**

To create a new branch named GitNewBranch, I used the following command:

git branch GitNewBranch

**Step 2: List All Branches**

I listed both local and remote branches using:

git branch -a

This showed all available branches. The asterisk \* helped me identify the branch I was currently on.

**Step 3: Switch to the New Branch**

I switched to GitNewBranch with:

git checkout GitNewBranch

Git confirmed the switch with a message like:  
Switched to branch 'GitNewBranch'

**Step 4: Add Files and Content**

Next, I added a new file and included some sample content:

echo "Learning branching in Git." > branchfile.txt

git add branchfile.txt

git commit -m "Added a file in GitNewBranch"

**Step 5: Check Git Status**

To verify my changes, I ran:

git status

The output confirmed that there were no uncommitted changes and everything was clean.

**Merging Section**

**Step 1: Switch Back to Master**

To return to the main branch:

git checkout master

Git responded with:  
Switched to branch 'master'

**Step 2: List CLI Differences**

I compared the master branch with GitNewBranch to see what's different:

git diff GitNewBranch

This showed the content differences directly in the terminal.

**Step 3: Visual Differences Using P4Merge**

I ran the following command to open a side-by-side GUI comparison:

git difftool GitNewBranch

Since I had configured P4Merge earlier, it opened and visually displayed the differences.

**Step 4: Merge Branch into Master**

To merge the feature branch into master:

git merge GitNewBranch

Git completed the merge and reported either a fast-forward or a proper merge, depending on changes.

**Step 5: View Commit Graph**

To observe the commit history in a visual graph form:

git log --oneline --graph --decorate

This gave me a tree-like structure showing the branches, merges, and commit messages.

**Step 6: Delete the Merged Branch**

Once I confirmed the merge was successful, I deleted the branch:

git branch -d GitNewBranch

Git confirmed deletion with:  
Deleted branch GitNewBranch (was <commit\_hash>)

Finally, I verified the status:

git status

The output confirmed that I was on the master branch and everything was up-to-date.

**OUTPUT:**

