

## Step 1 — Branching

### 1.1. Create a new branch

```
salma@salмали_laptop MINGW64 ~/GitDemo (master)
$ git branch GitNewBranch
```

### 1.2. List all branches

```
salma@salмали_laptop MINGW64 ~/GitDemo (master)
$ git branch -a
  GitNewBranch
* master
remotes/origin/master
```

### 1.3. Switch to the new branch

```
salma@salмали_laptop MINGW64 ~/GitDemo (master)
$ git switch GitNewBranch
Switched to branch 'GitNewBranch'
```

### 1.4. Add files to the branch

```
salma@salмали_laptop MINGW64 ~/GitDemo (GitNewBranch)
$ echo "This is a test file for GitNewBranch" > branchfile.txt
```

### 1.5. Stage and commit changes

```
salma@salмали_laptop MINGW64 ~/GitDemo (GitNewBranch)
$ git add branchfile.txt
warning: in the working copy of 'branchfile.txt', LF will be replaced by CRLF the next time Git touches it

salma@salмали_laptop MINGW64 ~/GitDemo (GitNewBranch)
$ git commit -m "Add branchfile.txt in GitNewBranch"
[GitNewBranch 4fa74cf] Add branchfile.txt in GitNewBranch
1 file changed, 1 insertion(+)
create mode 100644 branchfile.txt
```

### 1.6. Check branch status

```
salma@salмали_laptop MINGW64 ~/GitDemo (GitNewBranch)
$ git status
On branch GitNewBranch
nothing to commit, working tree clean
```

## Step 2 — Merging

### 2.1. Switch to master

```
salma@salмали_laptop MINGW64 ~/GitDemo (GitNewBranch)
$ git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
```

### 2.2. See differences between master and GitNewBranch

```
salma@salмали_laptop MINGW64 ~/GitDemo (master)
$ git diff master..GitNewBranch
diff --git a/branchfile.txt b/branchfile.txt
new file mode 100644
index 0000000..f74261e
--- /dev/null
+++ b/branchfile.txt
@@ -0,0 +1 @@
+This is a test file for GitNewBranch
```

### 2.3. View differences visually with P4Merge

```
salma@salмали_laptop MINGW64 ~/GitDemo (master)
$ git mergetool
No files need merging
```

### 2.4. Merge branch into master

```
salma@salмали_laptop MINGW64 ~/GitDemo (master)
$ git merge GitNewBranch
Updating 92f20d5..4fa74cf
Fast-forward
 branchfile.txt | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 branchfile.txt
```

### 2.5. View merge log

```
salma@salмали_laptop MINGW64 ~/GitDemo (master)
$ git log --oneline --graph --decorate
* 4fa74cf (HEAD -> master, GitNewBranch) Add branchfile.txt in GitNewBranch
* 92f20d5 (origin/master) Add .gitignore to ignore .log files and log folder
* e445875 Add welcome.txt
* eda8263 Added welcome.txt file with welcome message
```

### 2.6. Delete the branch after merge

```
salma@salмали_laptop MINGW64 ~/GitDemo (master)
$ git branch -d GitNewBranch
Deleted branch GitNewBranch (was 4fa74cf).
```

## 2.7. Check final status

```
salma@salмали_laptop MINGW64 ~/GitDemo (master)
$ 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
```