Lab-1 Solutions

Practice with all the local repository commands from the slides:

1. git init

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git init
Initialized empty Git repository in C:/Users/meles/OneDrive/Desktop/Lab-1/.git/

C:\Users\meles\OneDrive\Desktop\Lab-1>
```

2. git status

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git status
On branch main

No commits yet

nothing to commit (create/copy files and use "git add" to track)

C:\Users\meles\OneDrive\Desktop\Lab-1>
```

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git status
On branch main

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   index.js
```

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git status
On branch main

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   index.js

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .gitignore
```
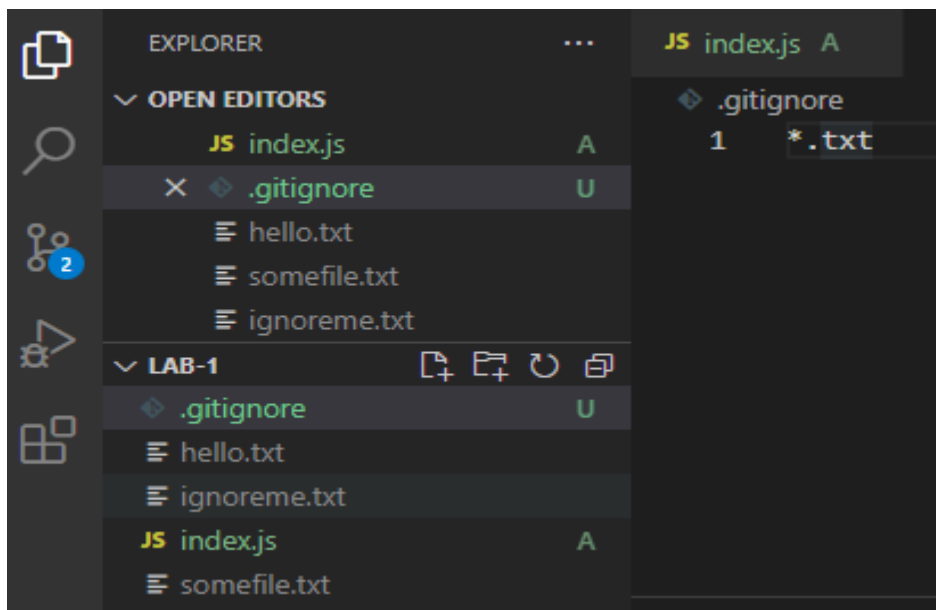
3. git diff

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git diff .gitignore
diff --git a/.gitignore b/.gitignore
index 314f02b..8deab45 100644
--- a/.gitignore
+++ b/.gitignore
@@ -1 +1,2 @@
-*.txt
\ No newline at end of file
+*.txt
+javascript
```

4. Create .gitignore file, and notice how it works


```
C:\Users\meles\OneDrive\Desktop\Lab-1>git status
On branch main

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   index.js

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .gitignore
```

5. git add

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git add .gitignore

C:\Users\meles\OneDrive\Desktop\Lab-1>git status
On branch main

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   .gitignore
        new file:   index.js
```

6. git commit

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git commit -m "ignoreme file was added"
[main (root-commit) ec1d2ef] ignoreme file was added
 2 files changed, 2 insertions(+)
 create mode 100644 .gitignore
 create mode 100644 index.js
```

7. git commit –amend (updating the last commit)

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git commit --amend -m "amended gitignore init commit"
[main 9e0e9b4] amended gitignore init commit
 Date: Mon Apr 25 18:55:08 2022 -0500
 2 files changed, 2 insertions(+)
 create mode 100644 .gitignore
 create mode 100644 index.js
```

8. git log

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git log
commit 9e0e9b42ed24cb02b0e5e031c04f334f94db0f27 (HEAD -> main)
Author: Abdulhamid Ibrahim <hamidibrahim2003@gmail.com>
Date:   Mon Apr 25 18:55:08 2022 -0500

    amended gitignore init commit
```

9. git tag

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git tag -a firstcommit -m "first" c2eb81e
fatal: tag 'firstcommit' already exists

C:\Users\meles\OneDrive\Desktop\Lab-1>git checkout firstcommit
HEAD is now at c2eb81e hello.js is moved to Lab1
D       java/hello.js

C:\Users\meles\OneDrive\Desktop\Lab-1>git log --oneline
c2eb81e (HEAD, tag: firstcommit, main) hello.js is moved to Lab1
a87bd9d removed java folder from gitignore
dac496d ignore java folder
b7f67db ignore javascript folder
9e0e9b4 amended gitignore init commit
```

10. git branch

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git branch
  LibrarySystem
  main
* shoppingCart
  user-Management
```

11. git checkout

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git checkout shoppingCart
Switched to branch 'shoppingCart'

C:\Users\meles\OneDrive\Desktop\Lab-1>git log --oneline
c6796b2 (HEAD -> shoppingCart) shopping cart commit
27c00b4 all file deleted from shoppingCart
c2eb81e (tag: firstcommit, user-Management, main, LibrarySystem) hello.js is moved to Lab1
a87bd9d removed java folder from gitignore
dac496d ignore java folder
b7f67db ignore javascript folder
9e0e9b4 amended gitignore init commit

C:\Users\meles\OneDrive\Desktop\Lab-1>git checkout main
Switched to branch 'main'
```

12. git merge

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git merge shoppingCart
Updating c2eb81e..c6796b2
Fast-forward
 hello.js        | 4 +---
 java/hello.js   | 8 --------
 shoppingCart.js | 1 +
 3 files changed, 2 insertions(+), 11 deletions(-)
 delete mode 100644 java/hello.js
 create mode 100644 shoppingCart.js
```

12.1 Create a conflict and solve the conflict

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git merge shoppingCart
Auto-merging shoppingCart.js
CONFLICT (content): Merge conflict in shoppingCart.js
Automatic merge failed; fix conflicts and then commit the result.

C:\Users\meles\OneDrive\Desktop\Lab-1>git add .

C:\Users\meles\OneDrive\Desktop\Lab-1>git commit -m "merge changes from shoppingCart"
[main d2e19f1] merge changes from shoppingCart

C:\Users\meles\OneDrive\Desktop\Lab-1>git merge shopingCart
merge: shopingCart - not something we can merge

C:\Users\meles\OneDrive\Desktop\Lab-1>git merge shoppingCart
Already up to date.
```

13. Undo changes from a certain commit git revert

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git commit -m "git revert test changed"
[main 891070f] git revert test changed
 1 file changed, 1 insertion(+), 1 deletion(-)

C:\Users\meles\OneDrive\Desktop\Lab-1>git log --oneline
891070f (HEAD -> main) git revert test changed
9e38a66 git revert test
3d34ba6 Revert "    Revert "test for revert change made""
2b80976     Revert "test for revert change made"
a16df28 test for revert
9e3bb24 hchanges made with hello.js
d2e19f1 merge changes from shoppingCart
6002bdd (shoppingCart) new line added in shopingCart line2
```

14. Erase Commits with git reset

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git log --oneline
891070f (HEAD -> main) git revert test changed
9e38a66 git revert test
3d34ba6 Revert "    Revert "test for revert change made""
2b80976     Revert "test for revert change made"
a16df28 test for revert
```

```
C:\Users\meles\OneDrive\Desktop\Lab-1>git log --oneline
a16df28 (HEAD -> main) test for revert
9e3bb24 hchanges made with hello.js
d2e19f1 merge changes from shoppingCart
6992bdd (shoppingCart) new line added in shopingCart-line2
4fe7c9e changes made on main or master
```

Practice with all the remote repository commands from the slides:

1. Create a remote repository

2. `git clone`

```
C:\Users\meles\OneDrive\Desktop>git clone https://github.com/Hamid8542/cs445-lab-solutions.git
Cloning into 'cs445-lab-solutions'...
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), 4.51 KiB | 17.00 KiB/s, done.
```

3. git remote

```
C:\Users\meles\OneDrive\Desktop\cs445-lab-solutions>git remote
origin
```

4. git push

```
C:\Users\meles\OneDrive\Desktop\cs445-lab-solutions>git push origin main
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (4/4), 370 bytes | 92.00 KiB/s, done.
Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/Hamid8542/cs445-lab-solutions.git
   c7fa2f8..72dd7dd  main -> main
```

5. git fetch

```
C:\Users\meles\OneDrive\Desktop\cs445-lab-solutions>git fetch

C:\Users\meles\OneDrive\Desktop\cs445-lab-solutions>git fetch
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 669 bytes | 3.00 KiB/s, done.
From https://github.com/Hamid8542/cs445-lab-solutions
   72dd7dd..247a1db  main          -> origin/main
```

Git merge

```
C:\Users\meles\OneDrive\Desktop\cs445-lab-solutions>git merge
Updating 72dd7dd..247a1db
Fast-forward
 README.md | 3 ++-
 1 file changed, 2 insertions(+), 1 deletion(-)
```
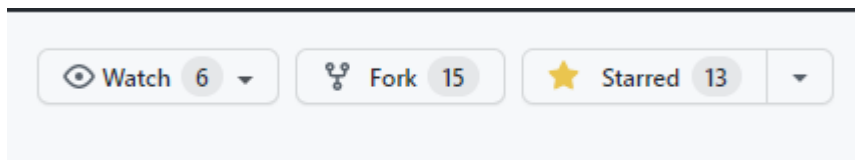
6. git pull

```
C:\Users\meles\OneDrive\Desktop\cs445-lab-solutions>git pull origin main
From https://github.com/Hamid8542/cs445-lab-solutions
 * branch            main        -> FETCH_HEAD
Updating 247a1db..2b08c5a
Fast-forward
 README.md | 2 ++
 1 file changed, 2 insertions(+)
```

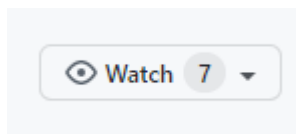# Practice with all the third-party repositories commands from the slides:

Assume we are working with the following upstream:
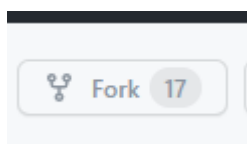https://github.com/bellaxing/cs445-labs

7. Star the repository

8. Watch the repository for any changes

9. Fork the repository

10. Clone your forked repository into your local machine

```
PS C:\Users\meles\OneDrive\Desktop> git clone https://github.com/Hamid8542/cs445-labs.git
Cloning into 'cs445-labs'...
remote: Enumerating objects: 231, done.
remote: Counting objects: 100% (73/73), done.
remote: Compressing objects: 100% (40/40), done.
remote: Total 231 (delta 40), reused 26 (delta 25), pack-reused 158
Receiving objects: 100% (231/231), 108.18 KiB | 1.64 MiB/s, done.
Resolving deltas: 100% (84/84), done.
PS C:\Users\meles\OneDrive\Desktop>
```

11. Create a new topic branch using `studentId-studentName` format, For example: 610001-JohnSmith

```
C:\Users\meles\OneDrive\Desktop\cs445-labs>git branch 112178-AbdulhamidIbrahim
```

12. Checkout your new branch

```
C:\Users\meles\OneDrive\Desktop\cs445-labs>git branch
  112178-AbdulhamidIbrahim
* main
```

13.   Add a new file with your name, example: `hello.js`

```
C:\Users\meles\OneDrive\Desktop\cs445-labs>git add .
```

14. Commit the changes

```
C:\Users\meles\OneDrive\Desktop\cs445-labs>git commit -m "abdulhamid.js is added in 112178-abdulhamidIbrahim branch"
[112178-AbdulhamidIbrahim e64a59c] abdulhamid.js is added in 112178-abdulhamidIbrahim branch
 1 file changed, 1 insertion(+)
 create mode 100644 abdulhamid.js
```

15. Merge your `studentId-studentName` branch with the main branch

```
C:\Users\meles\OneDrive\Desktop\cs445-labs>git merge 112178-AbdulhamidIbrahim
Merge made by the 'recursive' strategy.
```

16. Push your changes to the remote repo

```
C:\Users\meles\OneDrive\Desktop\cs445-labs>git push
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 4 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 562 bytes | 281.00 KiB/s, done.
Total 5 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), completed with 1 local object.
To https://github.com/Hamid8542/cs445-labs.git
   1c32ce1..caf8716  main -> main
```

17. Create a new Pull Request to the upstream repo

review the changes #16

⚃ Closed   Hamid8542 wants to merge 3 commits into `bellaxing:main` from `Hamid8542:main` ⧉

💬 Conversation   0   ⊷ Commits   3   ☑ Checks   0   ⊞ Files changed   1