

Lab 1.

1. git init

```
C:\Desktop\Lab1>git init
Initialized empty Git repository in C:/Desktop/Lab1/.git/
```

2. git status

```
C:\Desktop\Lab1>git status
On branch master

No commits yet

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

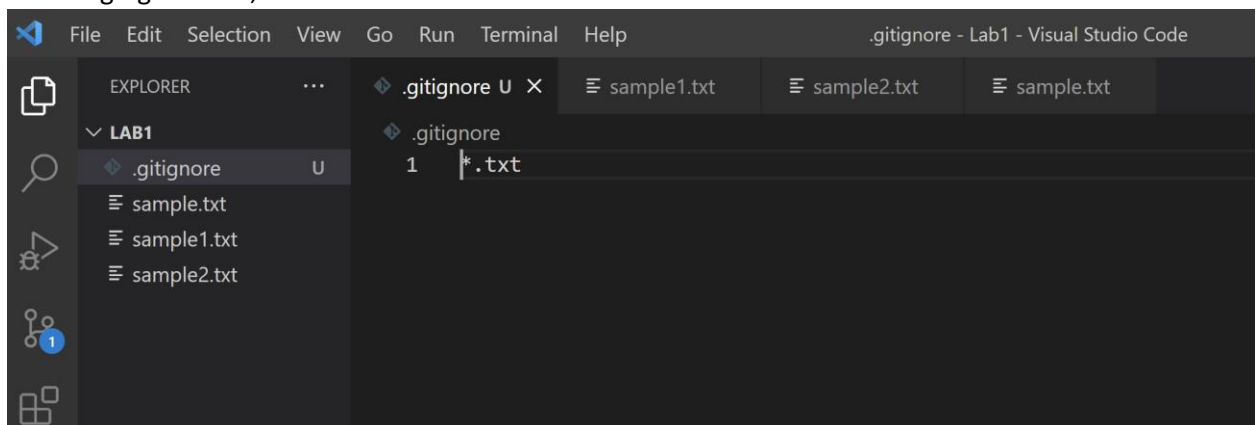
nothing added to commit but untracked files present (use "git add" to track)

C:\Desktop\Lab1>
```

3. git diff

```
C:\Desktop\Lab1>git diff
diff --git a/.gitignore b/.gitignore
index 314f02b..7dfcbb0 100644
--- a/.gitignore
+++ b/.gitignore
@@ -1,2 @@
-*.txt
\ No newline at end of file
+*.txt
+html
\ No newline at end of file
```

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



5. Git add

```
C:\Desktop\Lab1>git add .gitignore

C:\Desktop\Lab1>git status
On branch master

No commits yet

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

C:\Desktop\Lab1>
```

6. git commit

```
C:\Desktop\Lab1>git commit -m "added gitignore file"
[master (root-commit) 1aa2bfff] added gitignore file
 1 file changed, 1 insertion(+)
 create mode 100644 .gitignore
```

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

```
C:\Desktop\Lab1>git commit --amend -m "amended gitignore init commit"
[master ec24557] amended gitignore init commit
 Date: Mon Apr 25 16:08:43 2022 -0500
 1 file changed, 1 insertion(+)
 create mode 100644 .gitignore
```

8. git log

```
C:\Desktop\Lab1>git log
commit ec24557afe5a485eb479c6a4c653128eeef4fd18 (HEAD -> master)
Author: Taye Lemma <lemmataye@yahoo.com>
Date:   Mon Apr 25 16:08:43 2022 -0500

    amended gitignore init commit

C:\Desktop\Lab1>git log --oneline
ec24557 (HEAD -> master) amended gitignore init commit

C:\Desktop\Lab1>
```

9. git tag

```
PS C:\Desktop\Lab1> git tag -a firstcommit -m "first" b15de75
PS C:\Desktop\Lab1> git log --oneline
b15de75 (HEAD, tag: firstcommit) newFile.js
d3a4f17 new file
ec24557 (shoppingcart) amended gitignore init commit
PS C:\Desktop\Lab1>

PS C:\Desktop\Lab1> git tag -a lastcommit -m "last" ec24557
PS C:\Desktop\Lab1> git log --oneline
b15de75 (HEAD, tag: firstcommit) newFile.js
d3a4f17 new file
ec24557 (tag: lastcommit, shoppingcart) amended gitignore init commit
PS C:\Desktop\Lab1>
```

```
PS C:\Desktop\Lab1> git checkout firstcommit
HEAD is now at b15de75 newFile.js
PS C:\Desktop\Lab1> █
```

10. git branch

```
PS C:\Desktop\Lab1> git branch
* master
  shoppingcart
  user-management
PS C:\Desktop\Lab1> git branch new-branch
█
```

11. git checkout

```
PS C:\Desktop\Lab1> git checkout master
Switched to branch 'master'
M       .gitignore
PS C:\Desktop\Lab1> █
```

12. git merge

```
PS C:\Desktop\Lab1> git merge apple
Updating 7d833f0..1ebefd1
Fast-forward
 apple.js | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 apple.js
```

a. Create a conflict and solve the conflict

```
PS C:\Desktop\Lab1> git status
On branch master
nothing to commit, working tree clean
PS C:\Desktop\Lab1> git merge apple
Auto-merging apple.js
CONFLICT (content): Merge conflict in apple.js
Automatic merge failed; fix conflicts and then commit the result.
PS C:\Desktop\Lab1> git add .
PS C:\Desktop\Lab1> git commit -m "conflict fixed"
[master 615309a] conflict fixed
PS C:\Desktop\Lab1> git status
On branch master
nothing to commit, working tree clean
PS C:\Desktop\Lab1> git merge apple
Already up to date.
█
```

13. Undo changes from a certain commit git revert

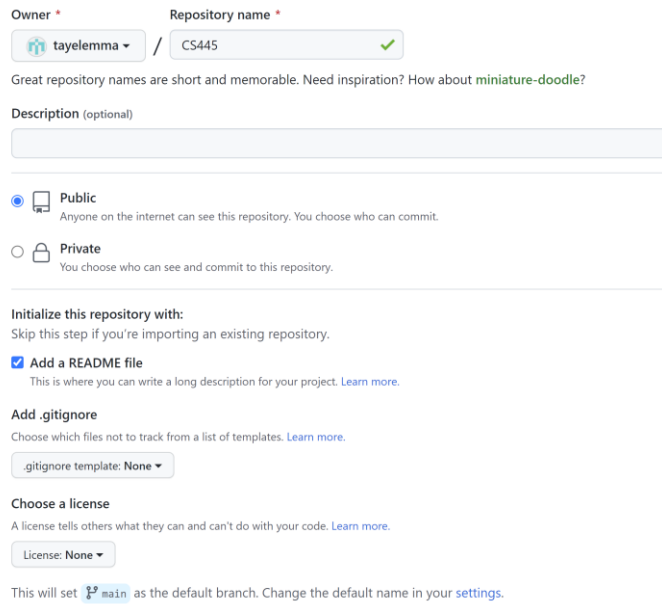
```
PS C:\Desktop\GITDEMO> git revert 70ec008
[master 2530962] Revert "modified"
 1 file changed, 2 insertions(+), 1 deletion(-)
PS C:\Desktop\GITDEMO> git log --oneline
2530962 (HEAD -> master) Revert "modified"
70ec008 modified
dce250c third commit
9f48620 second commit
0469fc1 newFile.js
```

14. Erase commits with git reset

```
PS C:\Desktop\Lab1> git log --oneline
3c8bdfb (HEAD -> master) apple.js
1ebefd1 apple.js
7d833f0 delete newFile.js
088a13f shopping cart commit
3b8b354 (user-management) fourth new file
9fe16fc third new file
b15de75 (tag: firstcommit) newFile.js
d3a4f17 new file
ec24557 (tag: lastcommit) amended gitignore init commit
PS C:\Desktop\Lab1> git reset 088a13f
Unstaged changes after reset:
M      masterFile/master.js
D      newFile.js
D      shoppingcart.js
PS C:\Desktop\Lab1> git log --oneline
088a13f (HEAD -> master) shopping cart commit
3b8b354 (user-management) fourth new file
9fe16fc third new file
b15de75 (tag: firstcommit) newFile.js
d3a4f17 new file
ec24557 (tag: lastcommit) amended gitignore init commit
PS C:\Desktop\Lab1> █
```

Practice with all the remote repository commands from the slides:

1. Create a remote repository.



The screenshot shows the GitHub repository creation interface. At the top, the 'Owner' is 'tayelemma' and the 'Repository name' is 'CS445'. Below this is a 'Description (optional)' text box. The 'Public' option is selected, with a note that 'Anyone on the internet can see this repository. You choose who can commit.' The 'Private' option is also visible. Under 'Initialize this repository with:', the 'Add a README file' checkbox is checked. Below this is the 'Add .gitignore' section with a dropdown menu set to 'None'. The 'Choose a license' section also has a dropdown menu set to 'None'. At the bottom, it states 'This will set `main` as the default branch. Change the default name in your [settings](#).'

2. git clone

`https://github.com/tayelemma/CS445-labs.git`

3. git remote

```
PS C:\Desktop\Lab1\CS445-labs> git remote  
origin
```

4. git push

```
PS C:\Desktop\Lab1\CS445-labs> git push origin main  
Enumerating objects: 5, done.  
Counting objects: 100% (5/5), done.  
Delta compression using up to 8 threads  
Compressing objects: 100% (3/3), done.  
Writing objects: 100% (3/3), 298 bytes | 298.00 KiB/s, done.  
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0  
remote: Resolving deltas: 100% (1/1), completed with 1 local object.  
To https://github.com/tayelemma/CS445-labs.git  
f019c94..3262643 main -> main  
PS C:\Desktop\Lab1\CS445-labs>
```

5. git fetch

```

PS C:\Desktop\Lab1\CS445-labs> 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 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 738 bytes | 105.00 KiB/s, done.
From https://github.com:tayelelemma/CS445-labs
   84af090..7d4610a  main       -> origin/main
PS C:\Desktop\Lab1\CS445-labs> git status
On branch main
Your branch is behind 'origin/main' by 1 commit, and can be fast-forwarded.
(use "git pull" to update your local branch)

nothing to commit, working tree clean
PS C:\Desktop\Lab1\CS445-labs> git merge
Updating 84af090..7d4610a
Fast-forward
 README.md | 7 +++++--
 1 file changed, 5 insertions(+), 2 deletions(-)
PS C:\Desktop\Lab1\CS445-labs> 

```

6. git pull

```

PS C:\Desktop\Lab1\CS445-labs> git pull origin main
From https://github.com:tayelelemma/CS445-labs
 * branch          main       -> FETCH_HEAD
Updating 7d4610a..5c399e0
Fast-forward
 README.md | 6 +++++--
 1 file changed, 4 insertions(+), 2 deletions(-)
PS C:\Desktop\Lab1\CS445-labs> 

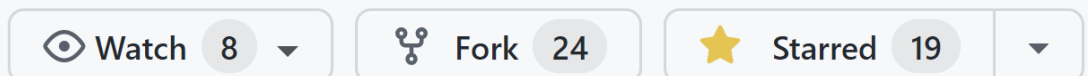
```

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

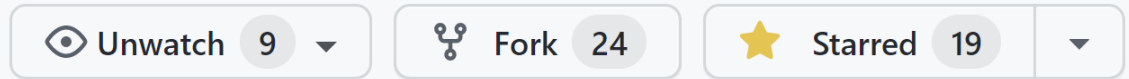
Assume we are working with the following upstream:

<https://github.com/bellaxing/cs445-labs>

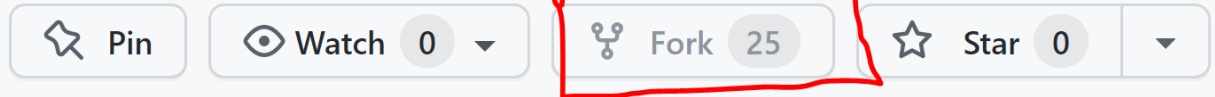
1. Star the repository



2. Watch the repository for any changes



3. Fork the repository



4. Clone your forked repository into your local machine

```
PS C:\Desktop\CS445bellaxing> git clone https://github.com/tayelelemma/cs445-labs-1.git
Cloning into 'cs445-labs-1'...
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 158R
Receiving objects: 100% (231/231), 108.18 KiB | 1.32 MiB/s, done.
Resolving deltas: 100% (84/84), done.
PS C:\Desktop\CS445bellaxing>
```

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

```
PS C:\Desktop\CS445bellaxing\cs445-labs-1> git branch 610001-JohnSmith
PS C:\Desktop\CS445bellaxing\cs445-labs-1> git branch
610001-JohnSmith
* main
PS C:\Desktop\CS445bellaxing\cs445-labs-1>
```

6. Checkout your new branch

```
PS C:\Desktop\CS445bellaxing\cs445-labs-1> git checkout 610001-JohnSmith
Switched to branch '610001-JohnSmith'
PS C:\Desktop\CS445bellaxing\cs445-labs-1>
```

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

```
PS C:\Desktop\CS445bellaxing\cs445-labs-1> git add .
PS C:\Desktop\CS445bellaxing\cs445-labs-1> git commit -m "changes in 610001-JohnSmith"
[610001-JohnSmith 0049f15] changes in 610001-JohnSmith
1 file changed, 2 insertions(+), 1 deletion(-)
PS C:\Desktop\CS445bellaxing\cs445-labs-1>
```

8. Commit the changes

```
PS C:\Desktop\CS445bellaxing\cs445-labs-1> git add .
PS C:\Desktop\CS445bellaxing\cs445-labs-1> git commit -m "changes in 610001-JohnSmith"
[610001-JohnSmith 0049f15] changes in 610001-JohnSmith
1 file changed, 2 insertions(+), 1 deletion(-)
PS C:\Desktop\CS445bellaxing\cs445-labs-1>
```


9. Merge your studentId-studentName branch with the main branch

```
PS C:\Desktop\CS445bellaxing\cs445-labs-1> git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
PS C:\Desktop\CS445bellaxing\cs445-labs-1> git merge 610001-JohnSmith
Updating 1c32ce1..0049f15
Fast-forward
 hello.js | 2 ++
 1 file changed, 2 insertions(+)
 create mode 100644 hello.js
PS C:\Desktop\CS445bellaxing\cs445-labs-1> 
```

10. Push your changes to the remote repo

```
PS C:\Desktop\CS445bellaxing\cs445-labs-1> git push
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (6/6), 540 bytes | 540.00 KiB/s, done.
Total 6 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 1 local object.
To https://github.com/tayelelemma/cs445-labs-1.git
 1c32ce1..0049f15  main -> main
```

11. Create a new Pull Request to the upstream repo

The screenshot shows the GitHub interface for the repository 'bellaxing / cs445-labs'. The 'Pull requests' tab is selected, showing 16 open pull requests. The first pull request is titled 'Changes in 610001-JohnSmith branch' and was opened 3 minutes ago by 'tayelelemma'. The interface includes navigation links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, and Insights. There are also filters for 'is:pr is:open' and buttons for 'Labels', 'Milestones', and 'New pull request'.