



MAPUA UNIVERSITY

SCHOOL OF ELECTRICAL, ELECTRONICS, AND COMPUTER ENGINEERING

Lab 1: Using Tools in Software Design

CPE106L (Software Design Laboratory)

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Group: 01

Section: E01



PreLab

Readings

Conda Cheat Sheet. (2017, August 8). Retrieved June 12, 2020 from https://docs.conda.io/projects/conda/en/4.6.0/_downloads/52a95608c49671267e40c689e0bc00ca/conda-cheatsheet.pdf?fbclid=IwAR12QNIAsjvSvyk5ZaJNWXuhkW9vjpKEer8s6O1CChI4GMF_KvxYcyLWk54

GitHub Guides. (2016, April 7). Retrieved June 12, 2020, from <https://guides.github.com/activities/hello-world/>

Insights and Reflection

GitHub is a web-based code hosting platform used for version control and collaboration where users can work together on their projects. It is a platform where users can dwell more into using git commands as a basis for creating branches, making commits, and merging pull requests. GitHub, as mentioned in this reference, has a built-on Git where users do not need to install git itself. Some insights acquired upon reading:

- **Repositories** - used to organize a project. It contains folders that can store files, images, videos, spreadsheets, data sets, and anything that is needed for a project.
- **Branch** - used for bug fixes and feature work. Has similar purpose with repositories but branches are made to work on different versions of a repository which is called branching. In simpler words, branches are multiple versions of a repository to let users work on multiple aspects of their project. By default, GitHub has a branch named master branch which is considered the "final" branch made by the user for their project. This branch is anything but special as it is the same with other branches, however, this branch is called master as it contains the last commits made by the users.
- **Make and commit changes** - committing in GitHub means to save changes. Every commit as stated in this reference has a commit message wherein users who commit may add a note or explanation in line to their made changes.
- **Open a pull request** - when a user opens a pull request, they have already made a commit and are now suggesting those commits for other people to review or pull in their contribution to those other people's branch.
- **Merging pull request** - by means, merging pull requests is bringing your commits together and putting it into the master branch. In this experiment, merging pull requests was the last step for the free training the group has enrolled in.

In reflection to this reference and the experiment itself, students were entirely introduced to GitHub and how it works. This URL was provided upon the first activity made for this experiment, which was to explore GitHub. In prior reference to this URL, the instructor directed us to enter a tutorial where users who try out the training meets the objective of familiarization to GitHub whereas enrollees are tasked to assign themselves to an issue, setting up their GitHub in reference to a specified issue, creating branches, committing files, opening a pull request, making a proper respond to a review, and merging pull requests. All of these are done through git commands made in anaconda prompt.

- **Objectives**

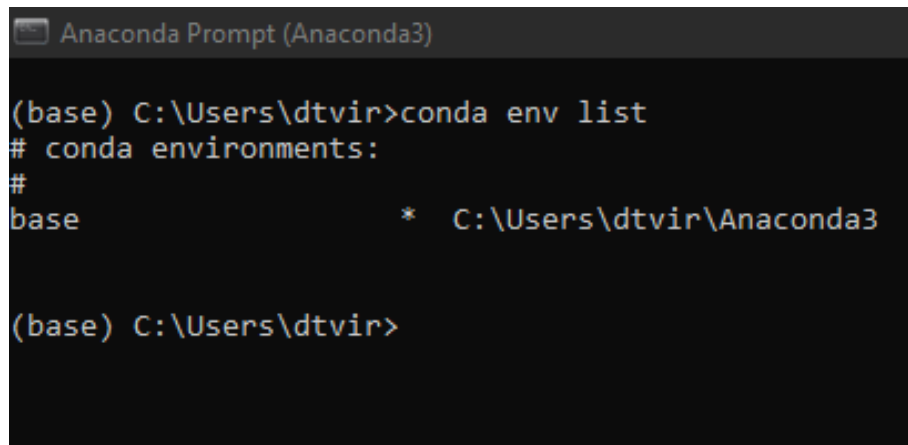
1. Demonstrate some of the few features of Github.
2. Create, activate and deactivate environments in Anaconda.
3. Use git commands to make commits, pull a request, and merge files.

- **Tools Used**

1. Anaconda
2. Git Terminal

- **Procedure**

FAMILIARIZATION WITH ANACONDA ENVIRONMENT



```
Anaconda Prompt (Anaconda3)

(base) C:\Users\dtvir>conda env list
# conda environments:
#
base                  *  C:\Users\dtvir\Anaconda3

(base) C:\Users\dtvir>
```

Figure 1.1 *Listing the current environment.*

We checked first if there is a created environment in Anaconda. There is no created environment so we will create one on the next step.

```

Anaconda Prompt (Anaconda3)

(base) C:\Users\dtvir>conda create --name py35 python=3.5
Collecting package metadata (current_repodata.json): done
Solving environment: failed with repodata from current_repodata.json, will re
Collecting package metadata (repodata.json): done
Solving environment: done

==> WARNING: A newer version of conda exists. <==
  current version: 4.7.12
  latest version: 4.8.3

Please update conda by running

  $ conda update -n base -c defaults conda

## Package Plan ##

  environment location: C:\Users\dtvir\Anaconda3\envs\py35

  added / updated specs:
    - python=3.5

The following packages will be downloaded:



| package                    | build         |         |
|----------------------------|---------------|---------|
| certifi-2018.8.24          | py35_1        | 137 KB  |
| pip-10.0.1                 | py35_0        | 1.6 MB  |
| python-3.5.6               | he025d50_0    | 14.5 MB |
| setuptools-40.2.0          | py35_0        | 497 KB  |
| vs2015_runtime-14.16.27012 | hf0eaf9b_2    | 1.2 MB  |
| wheel-0.31.1               | py35_0        | 82 KB   |
| wincertstore-0.2           | py35hfbbdb8_0 | 14 KB   |
| Total:                     |               | 17.9 MB |



The following NEW packages will be INSTALLED:



|                |                                                         |
|----------------|---------------------------------------------------------|
| certifi        | pkgs/main/win-64::certifi-2018.8.24-py35_1              |
| pip            | pkgs/main/win-64::pip-10.0.1-py35_0                     |
| python         | pkgs/main/win-64::python-3.5.6-he025d50_0               |
| setuptools     | pkgs/main/win-64::setuptools-40.2.0-py35_0              |
| vc             | pkgs/main/win-64::vc-14.1-h0510ff6_4                    |
| vs2015_runtime | pkgs/main/win-64::vs2015_runtime-14.16.27012-hf0eaf9b_2 |
| wheel          | pkgs/main/win-64::wheel-0.31.1-py35_0                   |
| wincertstore   | pkgs/main/win-64::wincertstore-0.2-py35hfbbdb8_0        |



Proceed ([y]/n)? y

Downloading and Extracting Packages
pip-10.0.1 | 1.6 MB | #####
setuptools-40.2.0 | 497 KB | #####
certifi-2018.8.24 | 137 KB | #####
vs2015_runtime-14.16 | 1.2 MB | #####
python-3.5.6 | 14.5 MB | #####
wincertstore-0.2 | 14 KB | #####
wheel-0.31.1 | 82 KB | #####

```

Figure 1.2 *Creating the new environment, py35.*

We successfully created the environment named py35 and installed a python with version 3.5 on the environment.

```
Anaconda Prompt (Anaconda3)

(base) C:\Users\dtvir>conda env list
# conda environments:
#
base                    * C:\Users\dtvir\
py35                    C:\Users\dtvir\

(base) C:\Users\dtvir>activate py35

(py35) C:\Users\dtvir>
```

Figure 1.3 *Activating the py35 environment.*

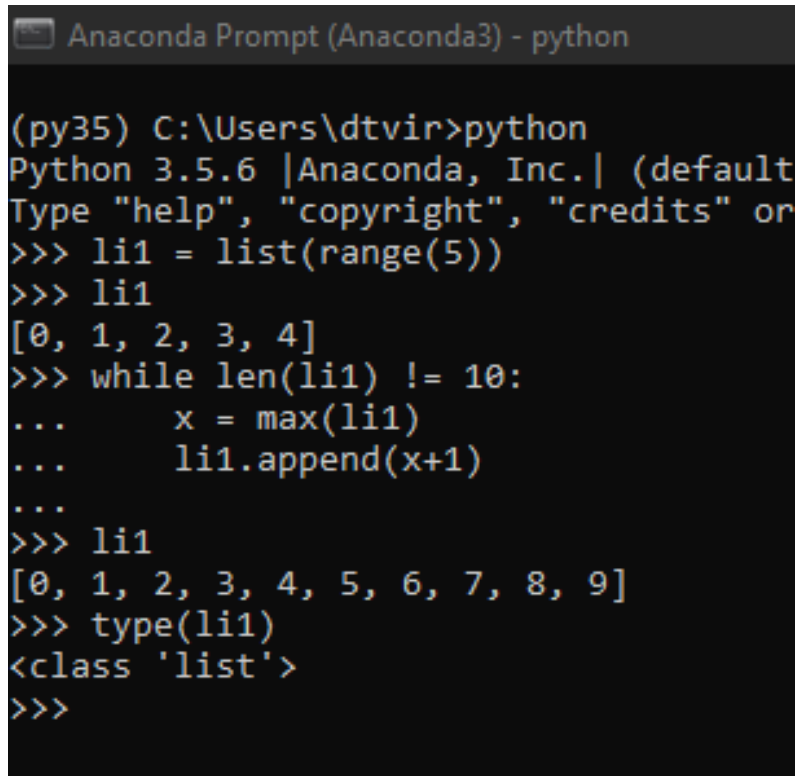
We activate py35 environment using the “activate” command.

```
Anaconda Prompt (Anaconda3) - python

(py35) C:\Users\dtvir>python
Python 3.5.6 |Anaconda, Inc.| (default, Aug 26 2018, 16:05:27) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

```
Anaconda Prompt (Anaconda3) - python

(py35) C:\Users\dtvir>python
Python 3.5.6 |Anaconda, Inc.| (default
Type "help", "copyright", "credits" or
>>> print("Hello, world!")
Hello, world!
>>> x = 2
>>> y = "Hello, world!"
>>> x*y
'Hello, world!Hello, world!'
>>>
```

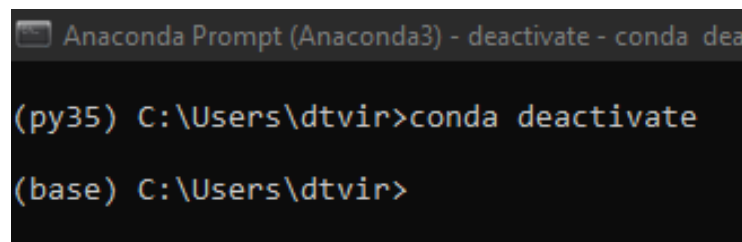
A screenshot of an Anaconda Prompt window titled "Anaconda Prompt (Anaconda3) - python". The prompt shows a Python 3.5.6 shell. The user enters 'python' at the command line. Inside the shell, they enter several commands: 'li1 = list(range(5))', 'li1', 'while len(li1) != 10:', 'x = max(li1)', 'li1.append(x+1)', 'li1', 'type(li1)', and '<class 'list'>'. The output shows the list [0, 1, 2, 3, 4] and the type <class 'list'>.

```
Anaconda Prompt (Anaconda3) - python

(py35) C:\Users\dtvir>python
Python 3.5.6 |Anaconda, Inc.| (default
Type "help", "copyright", "credits" or
>>> li1 = list(range(5))
>>> li1
[0, 1, 2, 3, 4]
>>> while len(li1) != 10:
...     x = max(li1)
...     li1.append(x+1)
...
>>> li1
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
>>> type(li1)
<class 'list'>
>>>
```

Figure 1.4 *Running python on py35 environment.*

We ran python on the environment and test it with a few codes like printing "Hello, world!", assigning a value to variables, creating a list, and using some functions like in list.

A screenshot of an Anaconda Prompt window titled "Anaconda Prompt (Anaconda3) - deactivate - conda dea". The prompt shows a Python 3.5.6 shell. The user enters 'conda deactivate' at the command line. The output shows the prompt changing from '(py35)' to '(base)'.

```
Anaconda Prompt (Anaconda3) - deactivate - conda dea

(py35) C:\Users\dtvir>conda deactivate

(base) C:\Users\dtvir>
```

Figure 1.5 *Deactivating the environment.*

We deactivated the environment after using it.

FAMILIARIZATION WITH GITHUB ENVIRONMENT

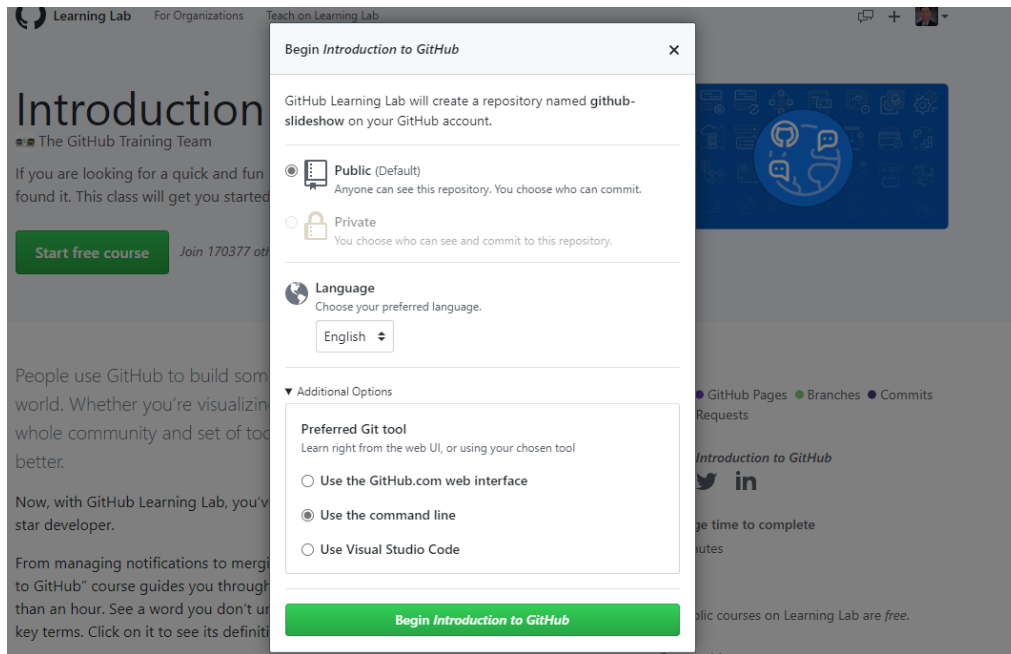


Figure 2.1 Using GitHub on the command line.

The tool that we will use on learning the GitHub is the command line. The interface shown is the GitHub learning lab.

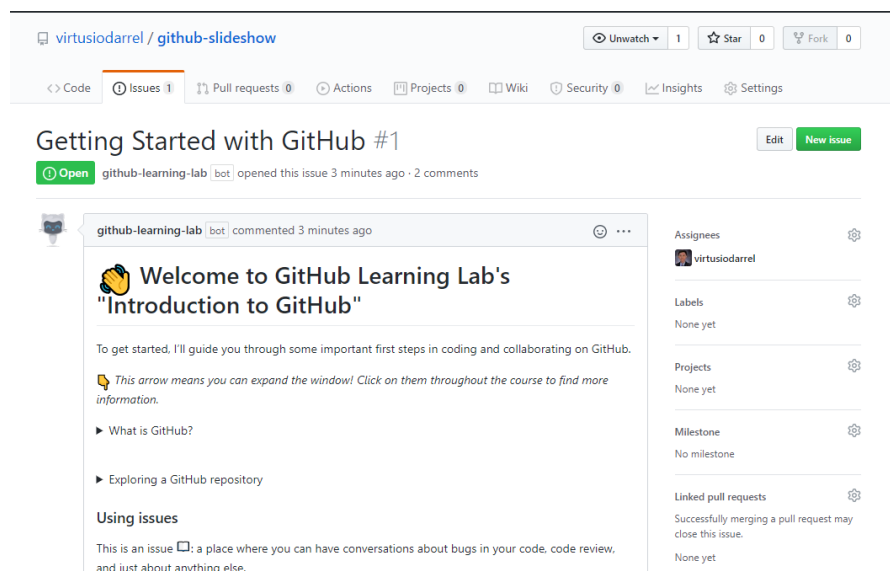


Figure 2.2 Getting started with GitHub.

The first task is to assign yourself and we have successfully done it.

GitHub Pages

GitHub Pages is designed to host your personal, organization, or project pages from a GitHub repository.

Source

GitHub Pages is currently disabled. Select a source below to enable GitHub Pages for this repository. [Learn more.](#)

None ▾

Select source

master branch

Use the master branch for GitHub Pages.

master branch /docs folder

Use only the /docs folder for GitHub Pages.

✓ None

Disable GitHub Pages.

GitHub Pages

GitHub Pages is designed to host your personal, organization, or project pages from a GitHub repository.

Your site is ready to be published at <https://virtusiodarrel.github.io/github-slideshow/>.

Source

Your GitHub Pages site is currently being built from the master branch. [Learn more.](#)

master branch ▾

Theme Chooser

Select a theme to publish your site with a Jekyll theme. [Learn more.](#)

Choose a theme

Custom domain

Custom domains allow you to serve your site from a domain other than virtusiodarrel.github.io. [Learn more.](#)

Save

☒ **Enforce HTTPS**

— Required for your site because you are using the default domain (virtusiodarrel.github.io)

HTTPS provides a layer of encryption that prevents others from snooping on or tampering with traffic to your site. When HTTPS is enforced, your site will only be served over HTTPS. [Learn more.](#)

Figure 2.3 Turning on GitHub pages.

We turned on GitHub pages and it is currently being built from the master branch.

```
Anaconda Prompt (Anaconda3) - git clone https://github.com/virtusiodarrel/github-slideshow.git

(base) D:\MEPUE\CpE\1920\4Q1920\CPE106L\LocalRepo\softDesLab>git clone https://github.com/virtusiodarrel/github-slideshow.git
Cloning into 'github-slideshow'...
remote: Enumerating objects: 372, done.
remote: Counting objects: 100% (372/372), done.
remote: Compressing objects: 100% (260/260), done.
Receiving objects: 31% (117/372), 252.00 KiB | 45.00 KiB/s
```

Figure 2.4 *Cloning github-slideshow repository.*

In this step, we clone the repository github-slideshow using the git clone command as we progress on the tutorial.

```
Anaconda Prompt (Anaconda3)

(base) D:\MEPUE\CpE\1920\4Q1920\CPE106L\LocalRepo\softDesLab>git clone https://github.com/virtusiodarrel/github-slideshow.git
Cloning into 'github-slideshow'...
remote: Enumerating objects: 372, done.
remote: Counting objects: 100% (372/372), done.
remote: Compressing objects: 100% (260/260), done.
remote: Total 372 (delta 93), reused 372 (delta 93), pack-reused 0R
Receiving objects: 96% (358/372), 3.34 MiB | 424.00 KiB/s
Receiving objects: 100% (372/372), 3.43 MiB | 231.00 KiB/s, done.
Resolving deltas: 100% (93/93), done.

(base) D:\MEPUE\CpE\1920\4Q1920\CPE106L\LocalRepo\softDesLab>cd github-slideshow

(base) D:\MEPUE\CpE\1920\4Q1920\CPE106L\LocalRepo\softDesLab\github-slideshow>git branch my-slide

(base) D:\MEPUE\CpE\1920\4Q1920\CPE106L\LocalRepo\softDesLab\github-slideshow>
```

Figure 2.5 *Creating a github branch, my-slide.*

Using the git branch command, we created a new branch called my-slide where we will make all the changes necessary on the tutorial.

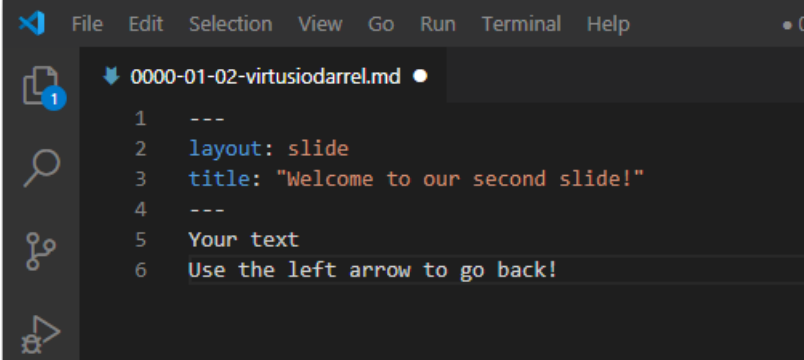
```
Anaconda Prompt (Anaconda3)

(base) D:\MEPUE\CpE\1920\4Q1920\CPE106L\LocalRepo\softDesLab\github-slideshow>git checkout my-slide
Switched to branch 'my-slide'
Your branch is up to date with 'origin/my-slide'.

(base) D:\MEPUE\CpE\1920\4Q1920\CPE106L\LocalRepo\softDesLab\github-slideshow>
```

Figure 2.6 *Switching branch from master to my-slide.*

In this part, we changed from master branch to the created my-slide branch using the command git checkout.



```
File Edit Selection View Go Run Terminal Help
0000-01-02-virtusiodarrel.md
1 ---
2 layout: slide
3 title: "Welcome to our second slide!"
4 ---
5 Your text
6 Use the left arrow to go back!
```

```
(base) D:\MEPUE\CpE\1920\4Q1920\CPE106L\LocalRepo\softDesLab\github-slideshow>git add _posts/0000-01-02-virtusiodarrel.m
d
```

Figure 2.7 *Creating and adding a file to branch my-slide.*

After switching branches, we created the new .MD file and add it to the git repository using the git add command.

```
(base) D:\MEPUE\CpE\1920\4Q1920\CPE106L\LocalRepo\softDesLab\github-slideshow>git commit -m "add 0000-01-02-virtusiodarrel.md"
[my-slide c599a9b] add 0000-01-02-virtusiodarrel.md
1 file changed, 6 insertions(+)
create mode 100644 _posts/0000-01-02-virtusiodarrel.md
(base) D:\MEPUE\CpE\1920\4Q1920\CPE106L\LocalRepo\softDesLab\github-slideshow>
```

Figure 2.8 *Committing the file.*

We commit the added file using the git commit command and add a message about what is being changed on the repository. In this case, we added the .MD file.

```
(base) D:\MEPUE\CpE\1920\4Q1920\CPE106L\LocalRepo\softDesLab\github-slideshow>git push
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 471 bytes | 471.00 KiB/s, done.
Total 4 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/virtusiodarrel/github-slideshow.git
5431165..c599a9b my-slide -> my-slide
```

Figure 2.9 *Pushing the file to GitHub.*

Pushing files to GitHub means uploading the local repository content to a remote repository. We pushed the newly committed file using the git push command.

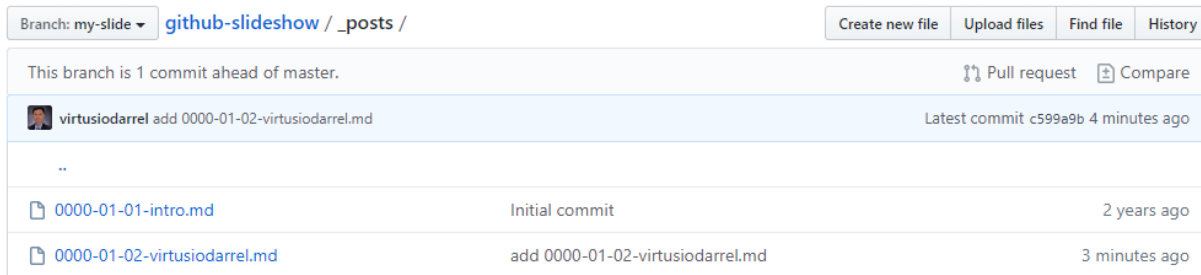


Figure 2.10 *New file added to Github.*

It shows that we have successfully pushed the .MD file because it was displayed in the my-slide branch on GitHub.

Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#).

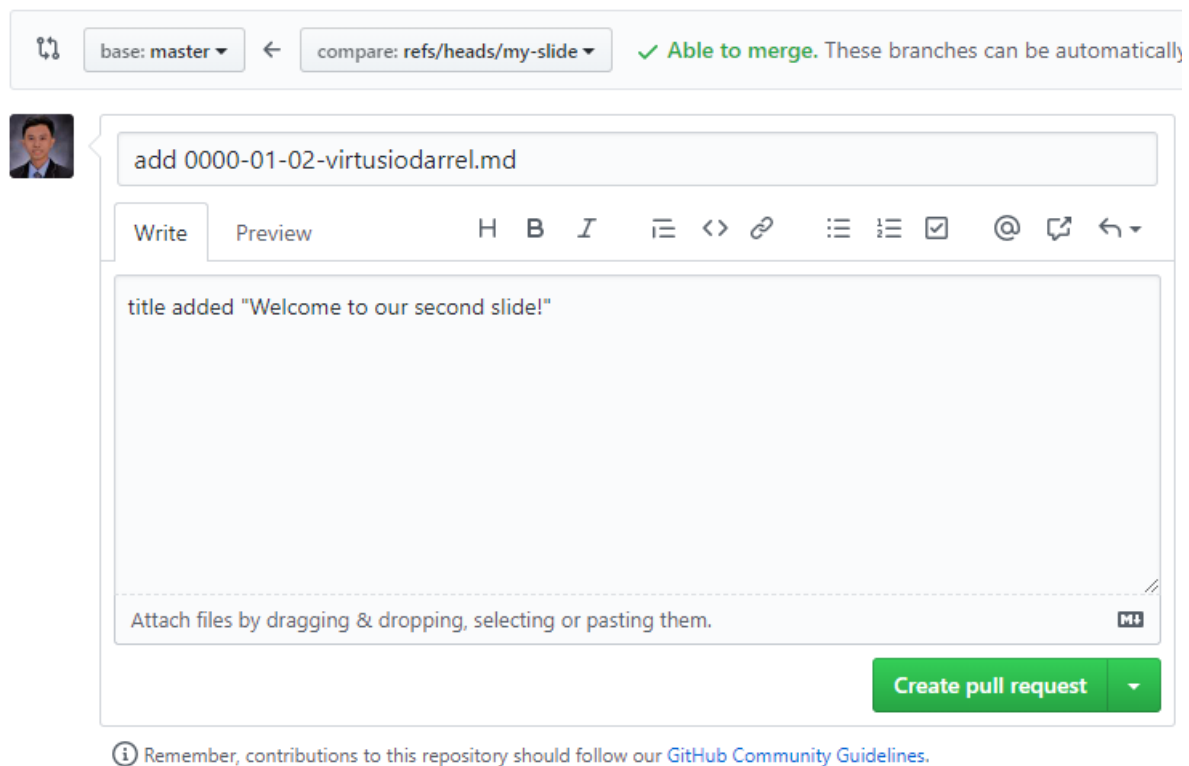


Figure 2.11 *Creating a pull request.*

A pull request means that it lets you tell other users on GitHub about the changes you have pushed to GitHub. This will open for review the set of changes, potential modifications, and possible future updates on the repository.

PostLab

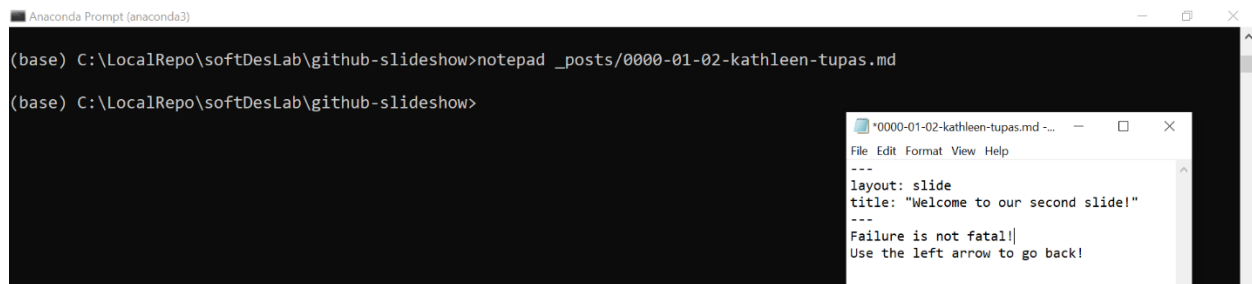
FAMILIARIZATION WITH GITHUB ENVIRONMENT

```
(base) C:\LocalRepo\softDesLab\github-slideshow>git checkout my-slide
Already on 'my-slide'
Your branch is up to date with 'origin/my-slide'.

(base) C:\LocalRepo\softDesLab\github-slideshow>
```

Figure 3.1 *Switching branch to my-slide.*

In this part, we used git checkout to switch branch to my-slide.



The screenshot shows an Anaconda Prompt window with the command `notepad _posts/0000-01-02-kathleen-tupas.md` executed. To the right, a Notepad window is open, displaying the content of the file `_posts/0000-01-02-kathleen-tupas.md`. The content is a markdown slide with the following text:

```
---
layout: slide
title: "Welcome to our second slide!"
---
Failure is not fatal!
Use the left arrow to go back!
```

Figure 3.2 *Changing the content of the file.*

In this step, we are replacing line 5 of the file with something new.

```
Anaconda Prompt (anaconda3)
(base) C:\LocalRepo\softDesLab\github-slideshow>git add _posts/0000-01-02-kathleen-tupas.md

(base) C:\LocalRepo\softDesLab\github-slideshow>git commit -m "change line 5 with a new text"
[my-slide 7404b01] change line 5 with a new text
1 file changed, 1 insertion(+), 1 deletion(-)

(base) C:\LocalRepo\softDesLab\github-slideshow>
```

Figure 3.3 *Committing the file.*

We commit the added file using the git commit command and add a message about what is being changed on the repository.

```
Anaconda Prompt (anaconda3)
[my-slide 7404b01] change line 5 with a new text
1 file changed, 1 insertion(+), 1 deletion(-)

(base) C:\LocalRepo\softDesLab\github-slideshow>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% (4/4), 428 bytes | 107.00 KiB/s, done.
Total 4 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/kathleen-tupas/github-slideshow.git
51e5c27..7404b01 my-slide -> my-slide

(base) C:\LocalRepo\softDesLab\github-slideshow>
```

Figure 3.4 Pushing the file to Github.

We pushed the newly committed file using the git push command.

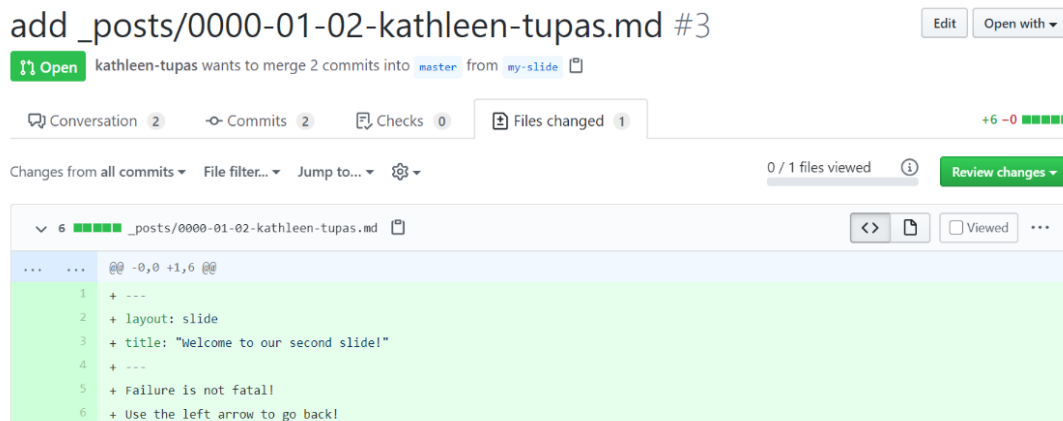


Figure 3.5 The changes made were displayed in Github.

It shows that we have successfully pushed the file because the changes made were displayed in the my-slide branch on GitHub.

```
Anaconda Prompt (anaconda3)

(base) C:\LocalRepo\softDesLab\github-slideshow>git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.

(base) C:\LocalRepo\softDesLab\github-slideshow>_
```

Figure 3.6 *Switching branch from my-slide to master.*

In this part, we switched from my-slide branch back to master branch to merge pull request.

```
Anaconda Prompt (anaconda3)

(base) C:\LocalRepo\softDesLab\github-slideshow>git merge my-slide
Updating 5431165..7404b01
Fast-forward
 _posts/0000-01-02-kathleen-tupas.md | 6 ++++++
 1 file changed, 6 insertions(+)
 create mode 100644 _posts/0000-01-02-kathleen-tupas.md

(base) C:\LocalRepo\softDesLab\github-slideshow>
```

Figure 3.7 *Merging the contents of my-slide to master branch.*

After we finish all the updates necessary on my-slide branch, we merge it on the master branch so that we can integrate the updates into a single branch.

```
(base) C:\LocalRepo\softDesLab\github-slideshow>git branch -d my-slide
Deleted branch my-slide (was 7404b01).

(base) C:\LocalRepo\softDesLab\github-slideshow>
```

Figure 3.8 *Deleting the my-slide branch.*

Since we already merged the contents of my-slide branch to master branch, we deleted it using the command `git branch -d`.

Course steps		...
✓	Assign yourself	Completed 7 days ago
✓	Turn on GitHub Pages	Completed 7 days ago
✓	Close an issue	Completed 7 days ago
✓	Create a branch	Completed 7 days ago
✓	Commit a file	Completed 7 days ago
✓	Open a pull request	Completed 7 days ago
✓	Respond to a review	Completed 7 days ago
✓	Merge your pull request	Completed 7 days ago

Congratulations @kathleen-tupas, you've completed this course!

Figure 3.9 Completed the Github Learning Lab.

We successfully finished the tutorial of git in GitHub Learning Lab. We learned about the GitHub flow, useful commands that can be used in future projects, and how important git is as a version control system for tracking changes in our source code in software development.