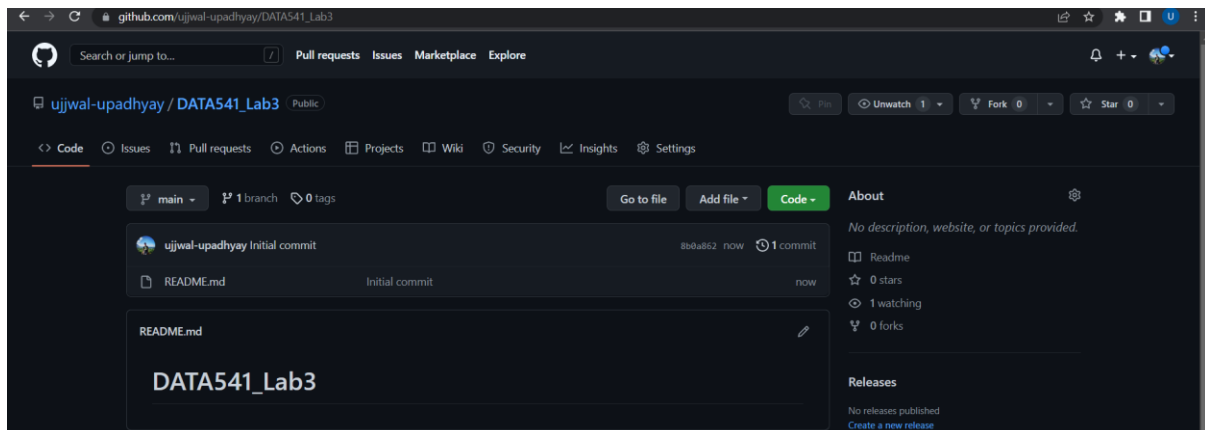


Part 2: GitHub Version Control (10 marks)

Question 1 (6 marks): Often, it makes sense to create a branch of a repository to work on that is separate from the original codebase. Write the commands into a text file or take screenshots as you perform the following actions to create a Git branch:

1. Clone your Lab 3 repository to your local machine (1 mark)



```
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541 (main)
$ git clone https://github.com/ujjwal-upadhyay/DATA541_Lab3.git
Cloning into 'DATA541_Lab3'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541 (main)
```

2. Navigate into the cloned repository folder

```
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541 (main)
$ cd DATA541_Lab3/
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (main)
```

3. Create a new Git branch called Markdown (1 mark)

```
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (main)
$ git branch Markdown
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (main)
```

4. Use checkout to move to the Markdown branch. You may use the -b flag to create and checkout a branch at the same time. (1 mark)

```
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (main)
$ git checkout Markdown
Switched to branch 'Markdown'
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (Markdown)
```

5. Check the status of the current repository and confirm you are on the Markdown branch (1 mark)

```
$ git status
On branch Markdown
nothing to commit, working tree clean
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541_Lab3 (Markdown)
```

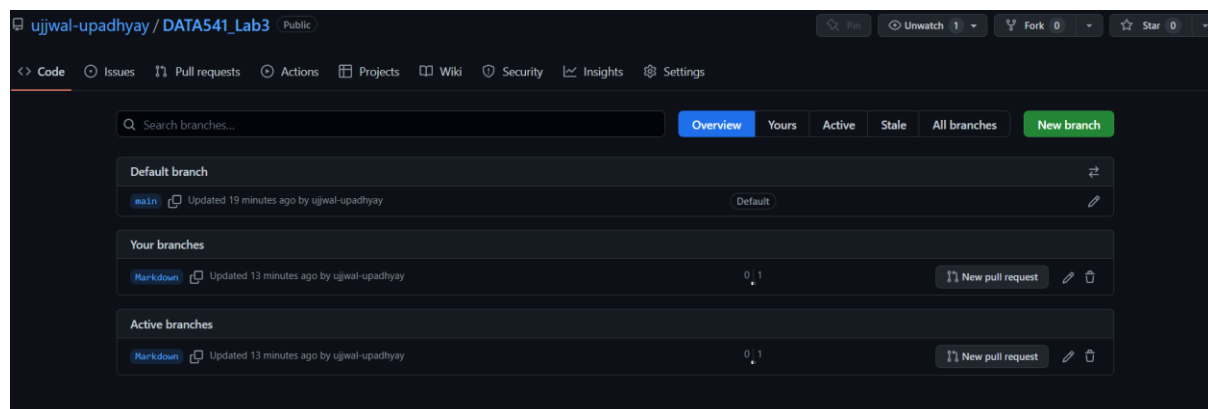
6. Add and commit your lab3_q1.md and lab3_q2.md files to the current branch. (1 mark)

```
$ git add lab3_q1.md
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (Markdown)
$ git add lab3_q2.md
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (Markdown)
$ git commit -m "Adding lab_q1.md and lab_q2.md"
[Markdown 197163b] Adding lab_q1.md and lab_q2.md
2 files changed, 61 insertions(+)
create mode 100644 lab3_q1.md
create mode 100644 lab3_q2.md
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (Markdown)
```

7. Use the push command with the following flags -u origin Markdown to push the Markdown branch to GitHub. (1 mark)

```
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (Markdown)
$ git push -u origin Markdown
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 16 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 1.65 KiB | 562.00 KiB/s, done.
Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'Markdown' on GitHub by visiting:
remote:   https://github.com/ujjwal-upadhyay/DATA541_Lab3/pull/new/Markdown
remote:
To https://github.com/ujjwal-upadhyay/DATA541_Lab3.git
 * [new branch]      Markdown -> Markdown
branch 'Markdown' set up to track 'origin/Markdown'.
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (Markdown)
```

8. On GitHub, you should see the Markdown branch in the Branch dropdown:



Question 2 (4 marks): Once the desired work has been completed on a branch, you can then merge that branch into the master branch. Write the commands into the same text file as before, or take screenshots as you perform the following Git merge:

1. Use checkout to move back to the master branch of your Git repository. (1 mark)

```
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (main)
```

2. Merge your Markdown branch into your master branch. The syntax for the merge command is git merge branchName. (1 mark)

```
$ git merge Markdown
Updating a4bc847..197163b
Fast-forward
 lab3_q1.md | 35 ++++++++++++++++++++++++++++++++++++++
 lab3_q2.md | 26 +++++++++++++++++++++++++++++++++++
 2 files changed, 61 insertions(+)
 create mode 100644 lab3_q1.md
 create mode 100644 lab3_q2.md
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (main)
```

3. Perform a push to push the merge up to GitHub.

```
$ git push
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/ujjwal-upadhyay/DATA541_Lab3.git
 a4bc847..197163b main -> main
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (main)
```

4. Delete your Markdown branch - now that it is merged, it is no longer necessary. (1 mark)

```
$ git branch -d Markdown
Deleted branch Markdown (was 197163b).
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (main)
```

5. Use the git log function to print a short log of your actions. If the -oneline flag doesn't work, try using --pretty=oneline instead. Take a screenshot of the output. (1 mark)

```
$ git log --oneline
197163b (HEAD -> main, origin/main, origin/Markdown, origin/HEAD) Adding lab_q1.md and lab_q2.md
a4bc847 Initial commit
(base) UJJWAL@LAPTOP-JSIHA4EB MINGW64 ~/DATA541/DATA541_Lab3 (main)
```

6. Add and commit your text files with your commands and/or screenshot(s) to the master branch of your lab repo and push. Your lab repo master branch should now contain your Markdown files from Part 1 of this lab, plus your text files and screenshots from Part 2. Submit the link to your repo on Canvas.