APS1070: Instructions for using GitHub and Google Colab

The courses use GitHub for personalized assignment "cloning" and submission and Google Colab for completion of assignments. We provide instructions for ECF lab machines below that will be the reference method we will support if there are any problems and the reference method by which we will grade and evaluate assignments.

If you prefer to use your own computer (running notebooks either via Anaconda or Colab), you are free to do so but you are responsible for checking that your GitHub submitted notebook runs correctly *end-to-end* on Google Colab.

You will receive a zero for your submission if

- your code does not run *end-to-end* on Google Colab,
- your code does not appear on the GitHub web interface for your personal assignment repository with a commit timestamp before the required deadline (note that you need to explicitly *git add* new files and verify they appear on the web interface),
- you have not saved your submission files with the specified filename(s), or
- you have not saved your submission files in the correct location in the GitHub repo (i.e., the same folder containing the ipynb notebooks that you "clone").

We provide some detailed instructions below, but ultimately **you are responsible for understanding the overall process of assignment submission via GitHub and how to manage GitHub**. There are many tutorials online, e.g., GitHub's own tutorial

https://guides.GitHub.com/introduction/git-handbook/

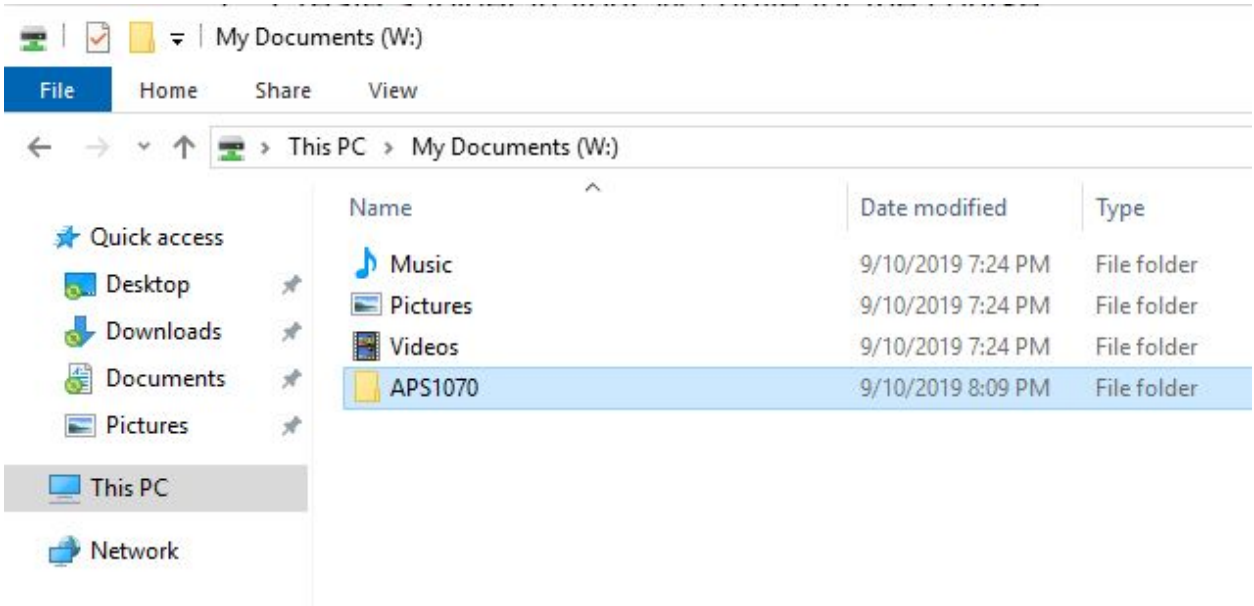
that we encourage you to read if you are unfamiliar with GitHub.

In the following pages, we first provide reference instructions for lab ECF machines that we will cover and support in lab.

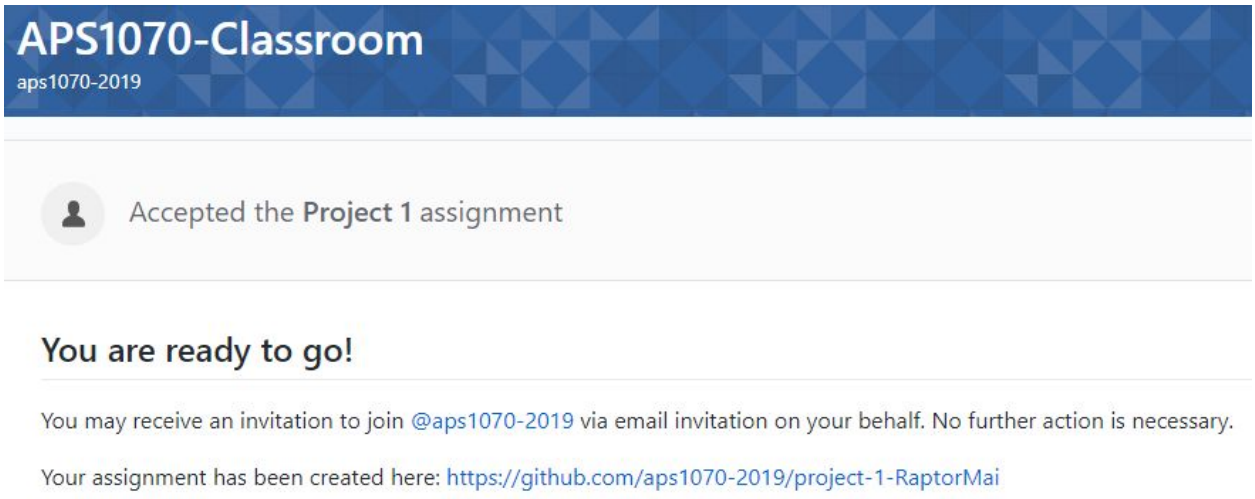
For those using their own computer, we also subsequently cover an alternate approach where we recommend that you mount your cloned GitHub repos under a Google Drive folder that Google Colab can directly access. The advantage of this method is that you do not need to repeatedly replace your local file when you save from Colab. This is important since every year, many students *make submission mistakes* or *lose their work* by downloading and saving assignments to the wrong directory or filename, or failing to replace the existing file. Those wishing to use the Google Drive mounting approach are responsible for doing this on their own -- we do not officially support this approach since it does not work from ECF and if you do not understand the rationale for the Google Drive mount, you can also make mistakes.

ECF GitHub and Google Colab Instructions (Supported)

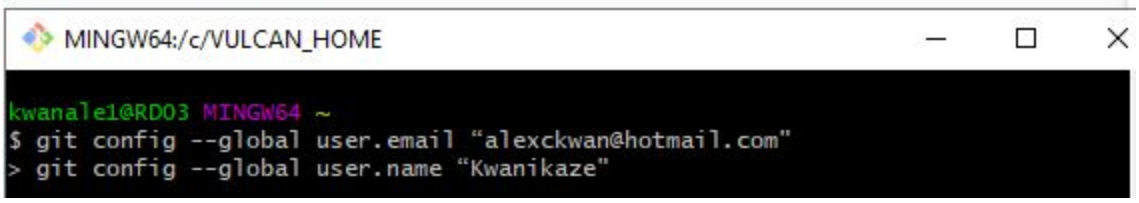
1. Create a folder in your W:/ drive for the course.



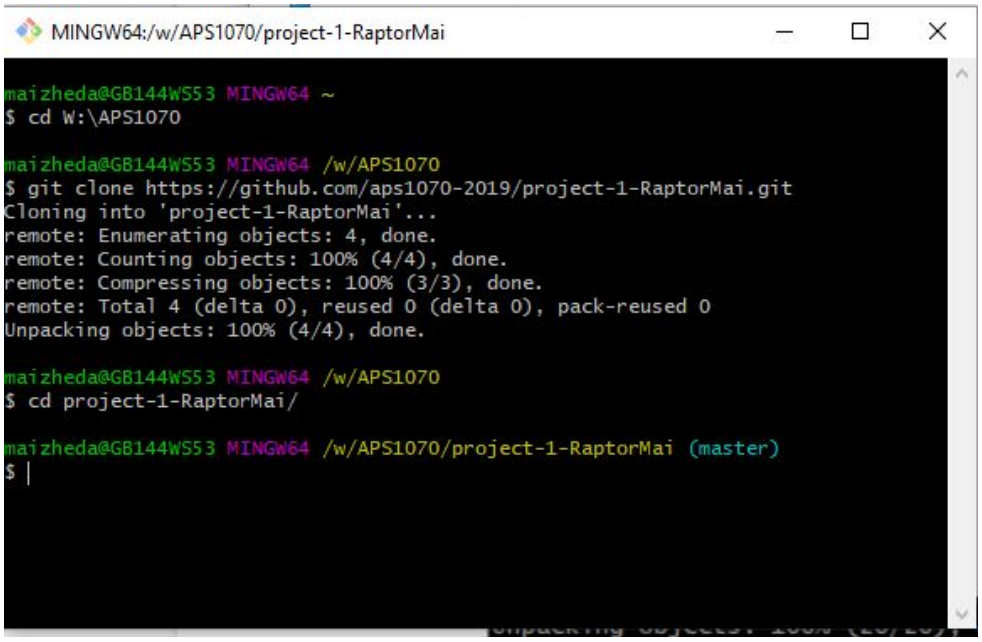
2. Navigate to the Lab/Assignment creation link provided under APS1070H F LEC on Quercus, which will take you to the GitHub classroom. After accepting the invitation, you will get



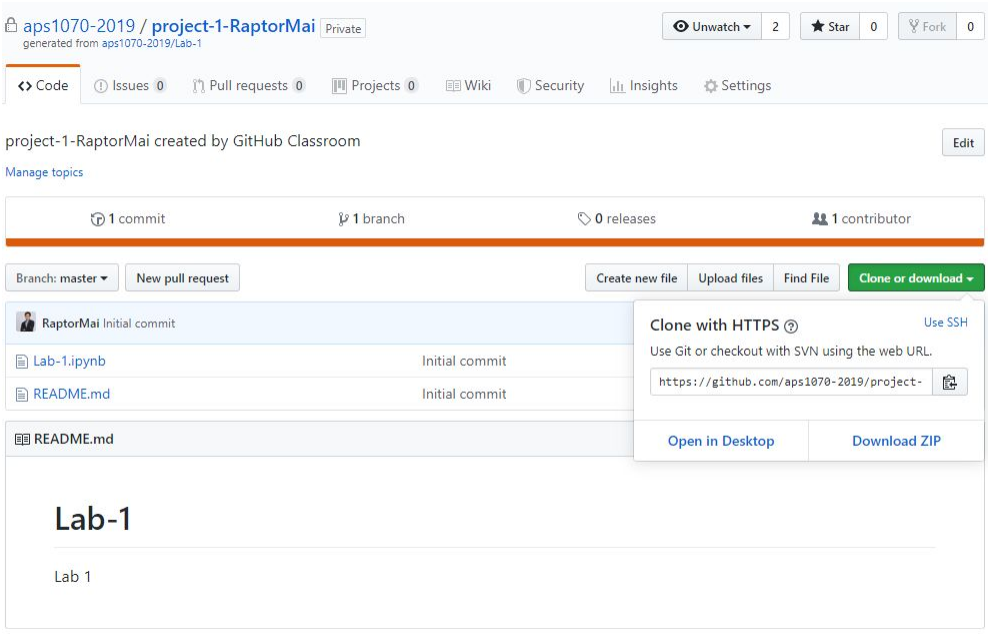
3. Open Git Bash and enter your git config as seen below with the following commands (keep the double quotes):
    a. git config --global user.email “<your-GitHub-email>”
    b. git config --global user.name “<your-GitHub-username>”



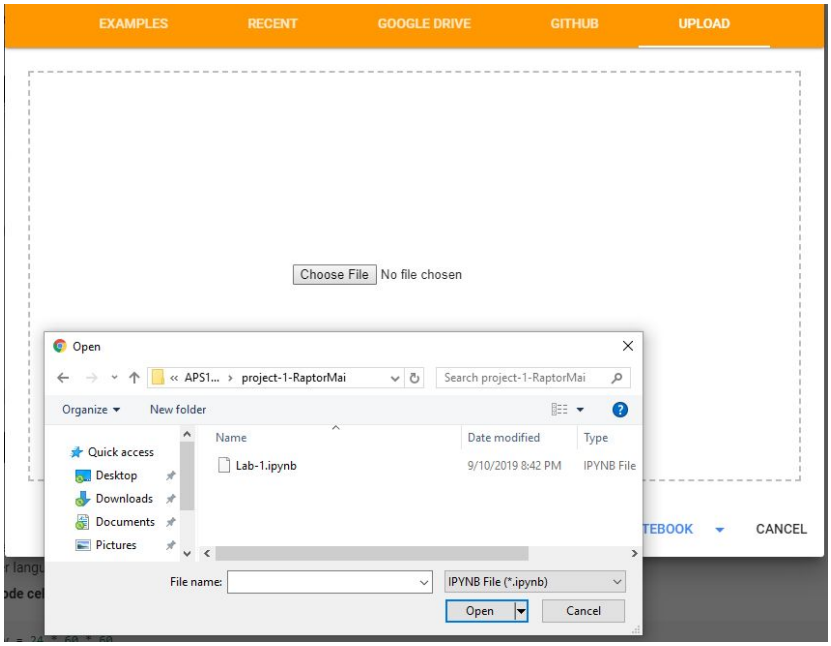
4. Navigate to the folder you created for the course and clone the GitHub classroom repository using it's URL. Then navigate to the cloned folder.
    a. cd <W:\folder name]>
    b. git clone <GitHub repo URL>
    c. cd <repository name>



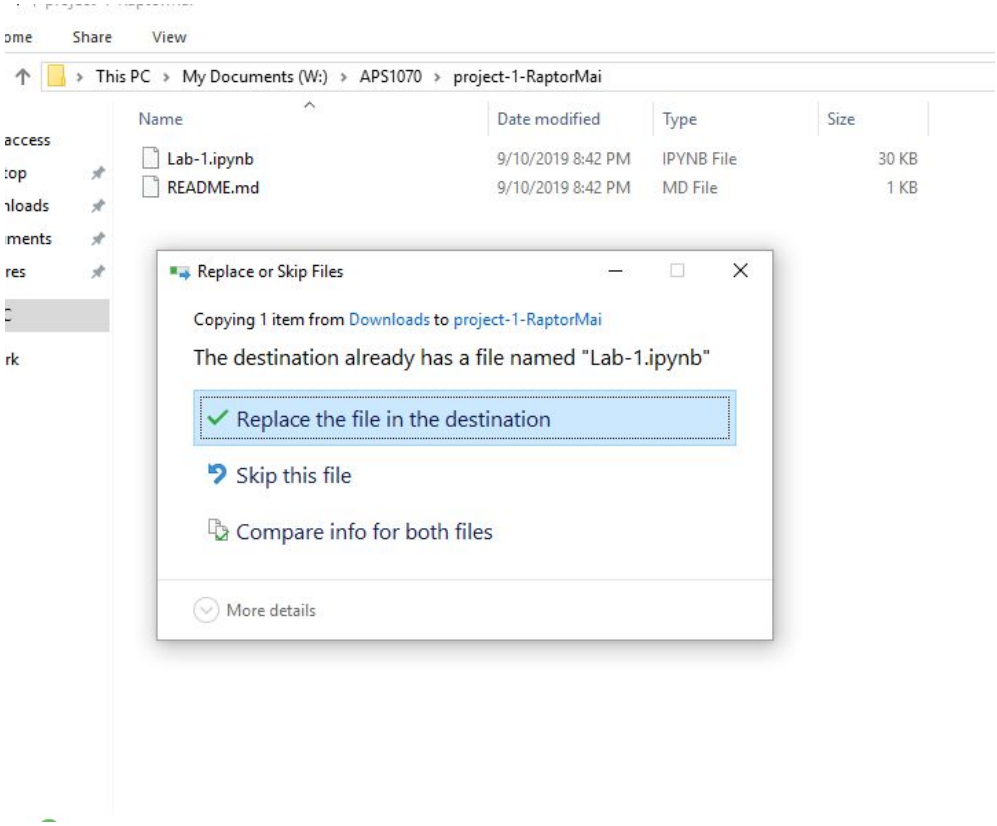
The <GitHub repo URL> can be found here:



5. Go to ‘colab.research.google.com’, and login to your Google account. Then select the UPLOAD pane, select Choose File, and choose the .ipynb from your course folder.



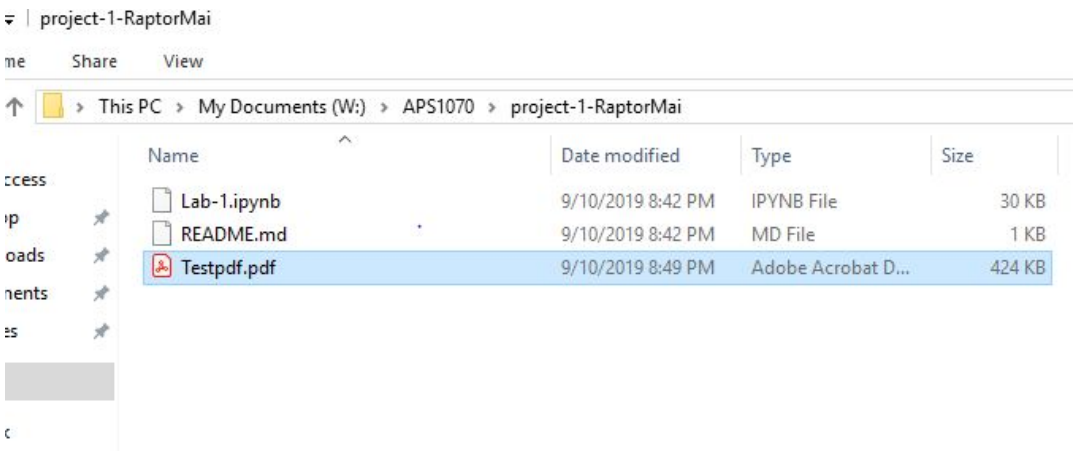
6. When you’re ready to commit your changes, save and download the .ipynb and replace the file in the course folder



At this stage, you have saved your modified .ipynb to your local ECF machine. You are responsible for verifying that you've saved it with the right name and location and that you "replaced" any existing file.

Note, however, that saving locally in your local "origin" GitHub repository on your machine does not affect the "master" GitHub repository where you need to place code for submission. **Lab TAs and the instructor can only see and grade content you "push" to the master GitHub repository viewable online.** How to do this is covered next.

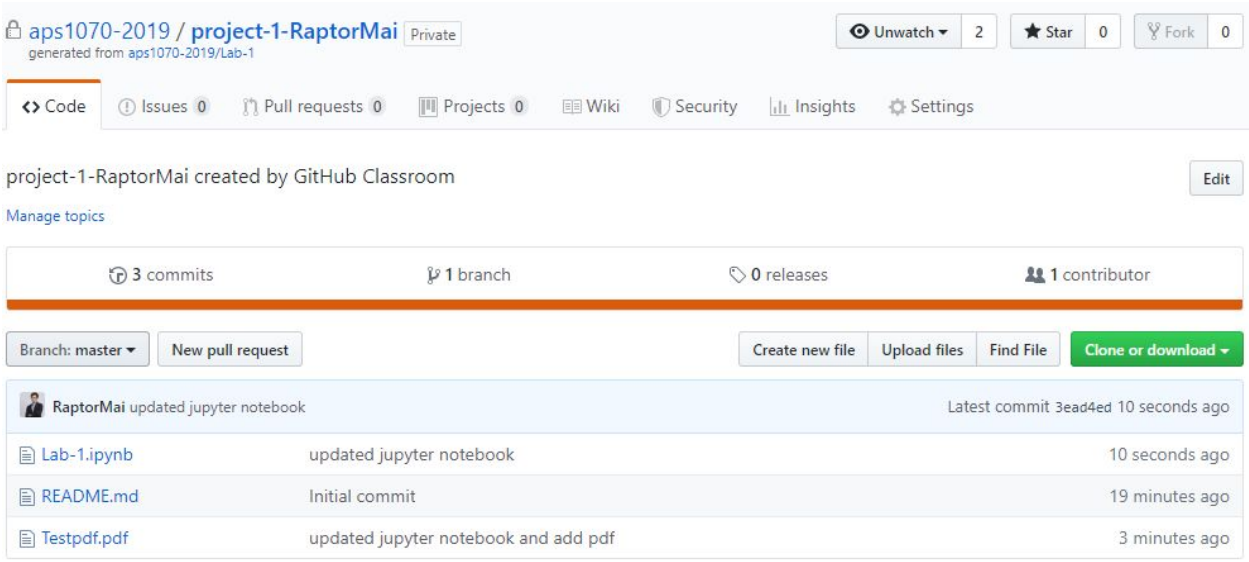
7. As some assignments will require a .pdf document, create a .pdf file in the cloned folder



8. Push both the .ipynb file and .pdf file back to GitHub using the following commands (making sure you are in the correct sub-directory containing the cloned repo files):
    a. git add <changed-files>
    b. git commit -m “<commit-message>”
    c. git push origin master

```
maizheda@GB144WS53 MINGW64 /w/APS1070
$ cd project-1-RaptorMai/

maizheda@GB144WS53 MINGW64 /w/APS1070/project-1-RaptorMai (master)
$ git add Lab-1.ipynb

maizheda@GB144WS53 MINGW64 /w/APS1070/project-1-RaptorMai (master)
$ git add Testpdf.pdf

maizheda@GB144WS53 MINGW64 /w/APS1070/project-1-RaptorMai (master)
$ git commit -m "updated jupyter notebook and add pdf"
[master f93e651] updated jupyter notebook and add pdf
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Testpdf.pdf

maizheda@GB144WS53 MINGW64 /w/APS1070/project-1-RaptorMai (master)
$ git push origin master
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 402.27 KiB | 14.90 MiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/aps1070-2019/project-1-RaptorMai.git
   d954cb6..f93e651  master -> master
```

9. In your web browser verify your GitHub has the updated ipynb file and the new .pdf file.



To verify that your files are submitted as intended, they should *all* appear above. Furthermore, you should click on your files in the above web page and verify that they have the correct content. "Mousing over" the submission time (e.g., "14 minutes ago") should show the exact date and time of submission.

You can push file as often as you want (GitHub is a "version control system" that keeps all versions and even allows you to revert to previous versions). For grading, we take the most recent submission that was timestamped before the submission deadline.

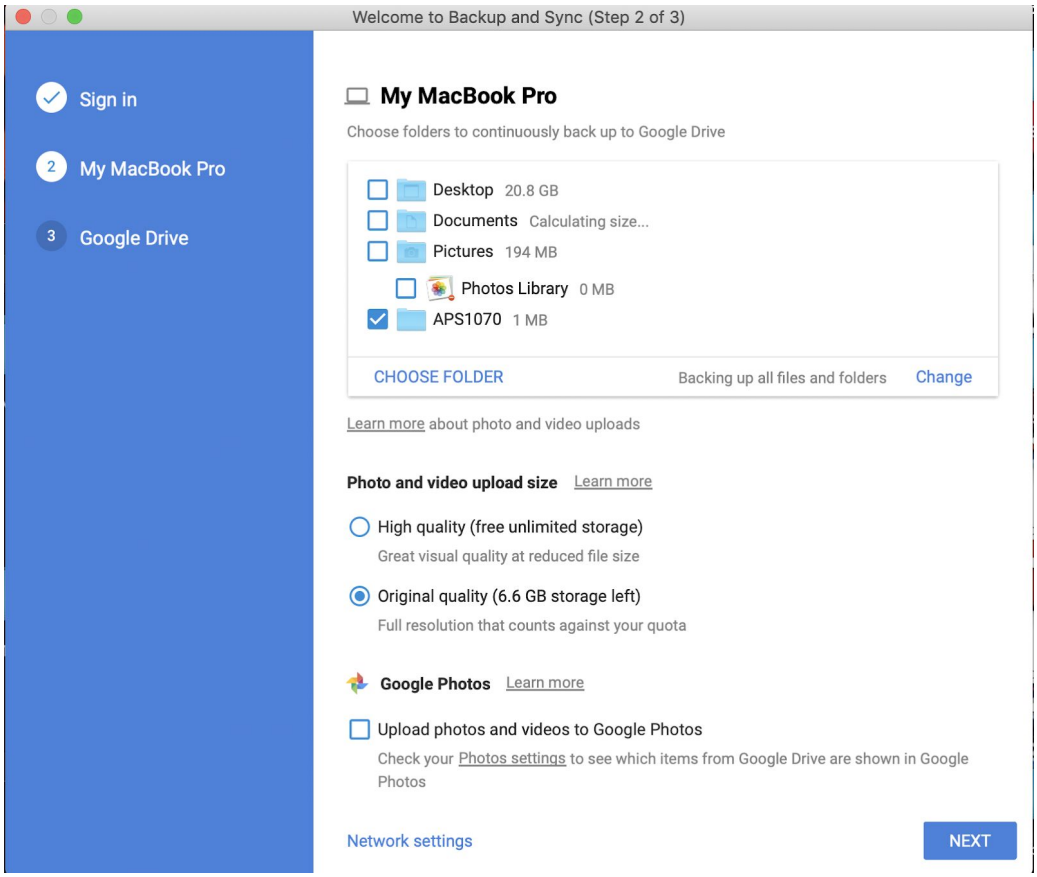
Personal computer GitHub / Google Drive / Google Colab Instructions (Not supported, only use if you understand what you are doing here)

These instructions are similar to those above, except that the cloned GitHub repo is placed in a mounted Google Drive folder so that saving from Colab saves directly to your machine in the right place without the need to navigate to the right directory and replace the file on download.

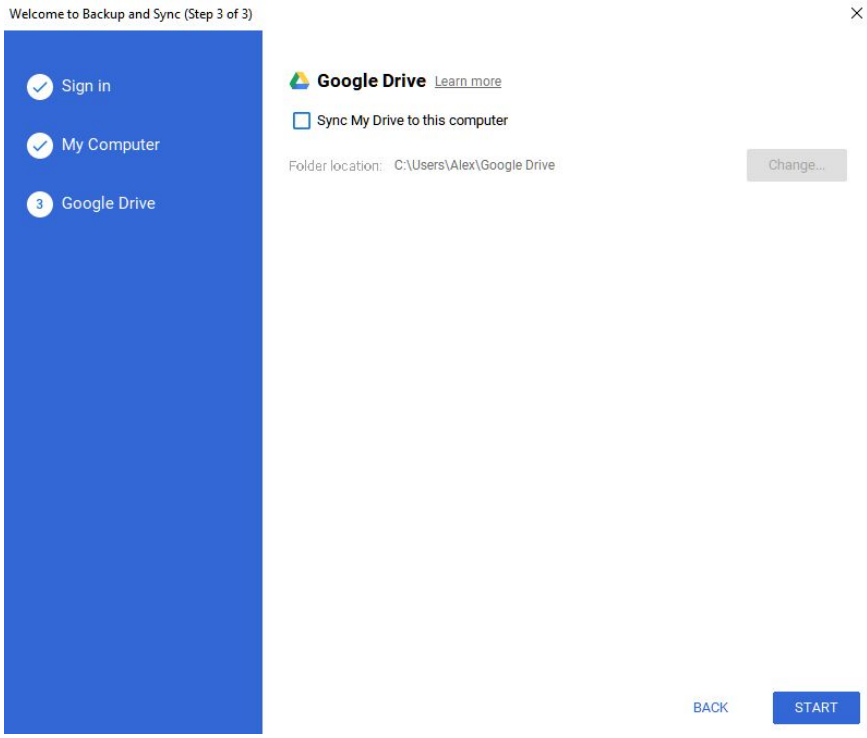
1. If git is not already installed, go to https://git-scm.com/book/en/v2/Getting-Started-Installing-Git
2. If Google Drive is not already installed, Go to https://www.google.com/drive/download/ and install the Google Drive app for 'Personal' usage. If you see a warning that Google Drive is an application downloaded from the Internet, click Open.

   Type your Google Account username and password to sign in to Google Drive. This will be the account associated with Google Drive for your PC.

3. Unclick all the default folders and create a new folder and select this folder. After this step, it should look like



4. Deselect ‘Sync My Drive to this computer’ (unless you so desire that all your online Google Drive documents be also stored on your local machine) and click Start



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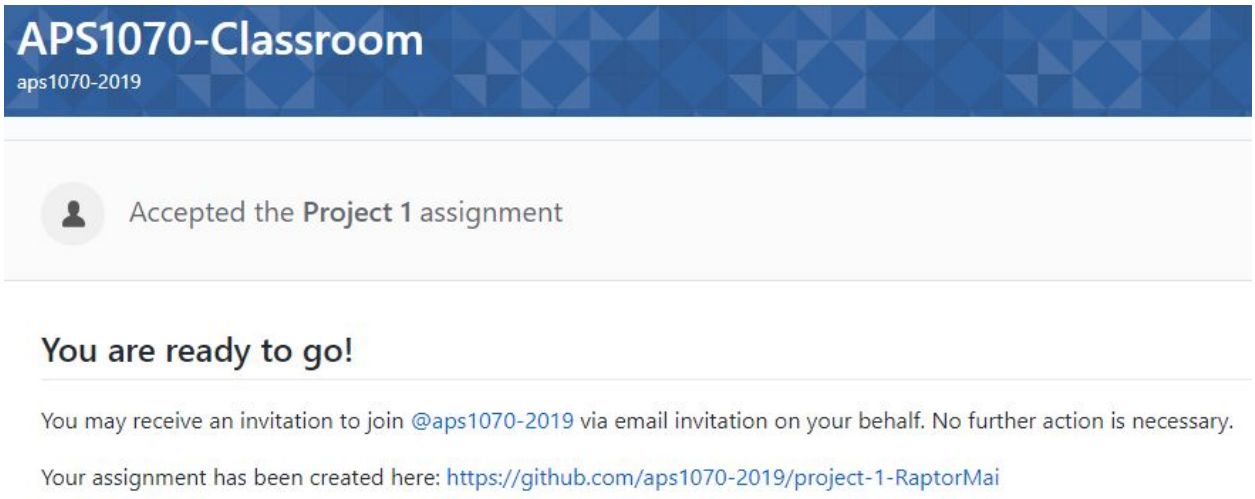

6. Open Git Bash/Command Prompt/Terminal and enter your git config as seen below with the following commands (keep the double quotes):
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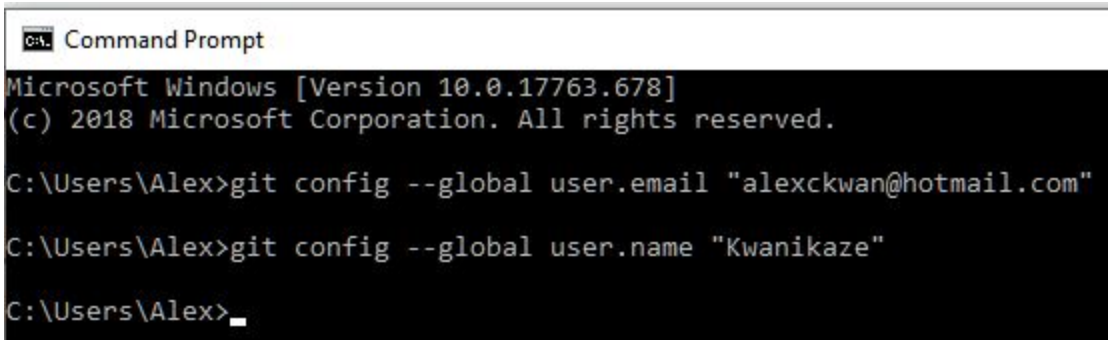
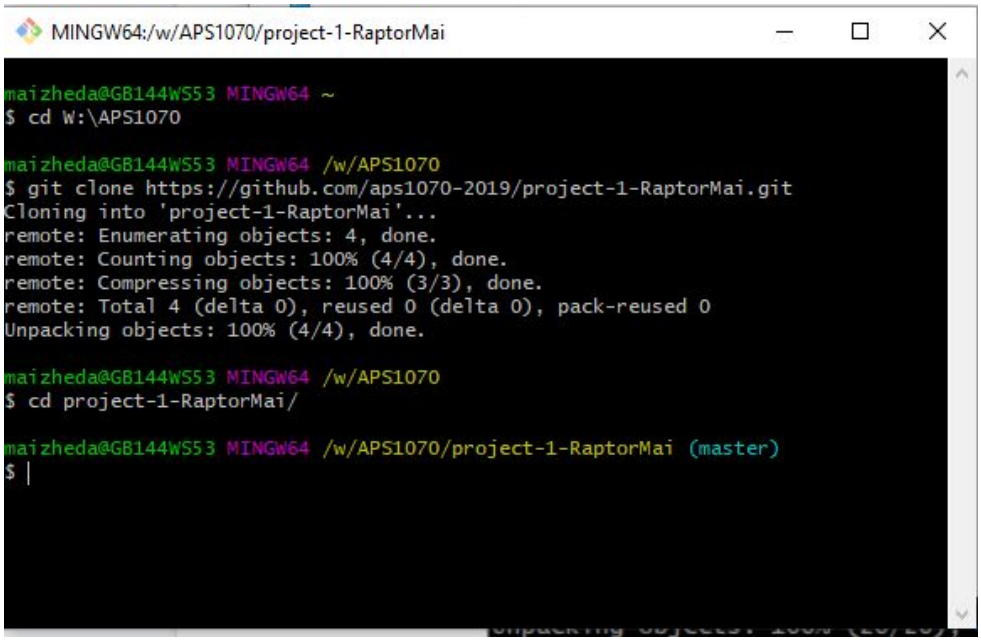


7. Navigate to the folder you created for the course and clone the GitHub classroom repository using it’s URL. Then navigate to the cloned folder.
   a. cd <folder directory>
   b. git clone <GitHub repo URL>
   c. cd <repository name>



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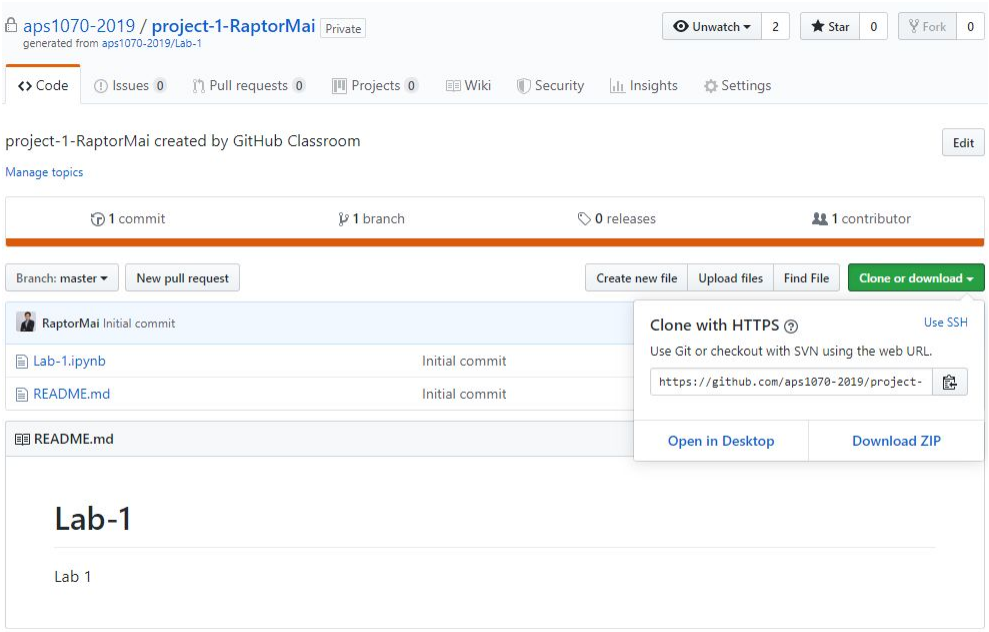
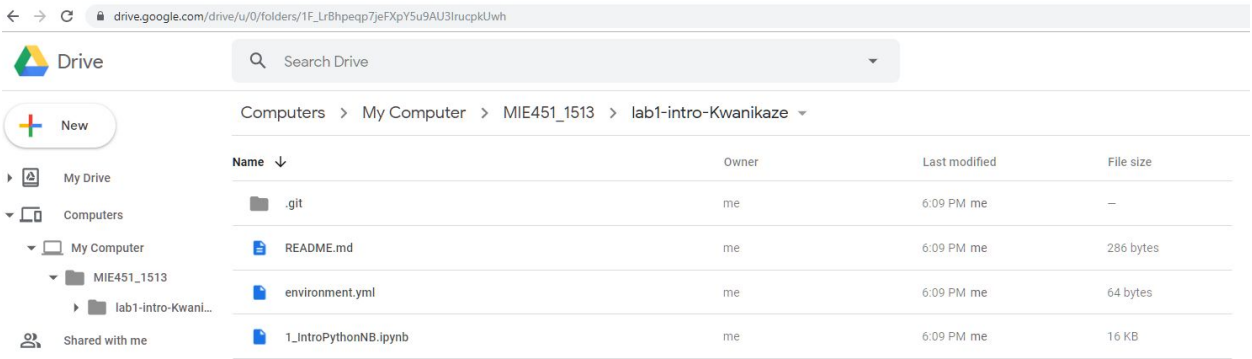
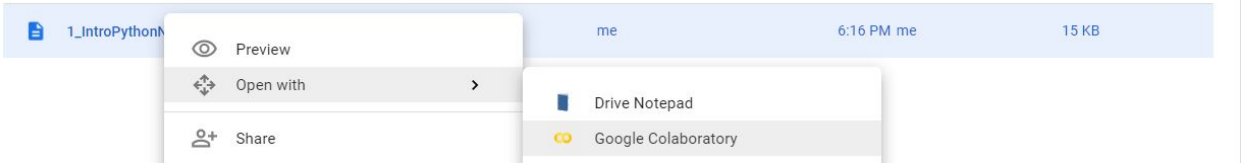


8. In your web browser, you should now find the cloned folder in your Google Drive at ‘drive.google.com’ .



9. Select the .ipynb file and press ‘Open with Google CoLaboratory’



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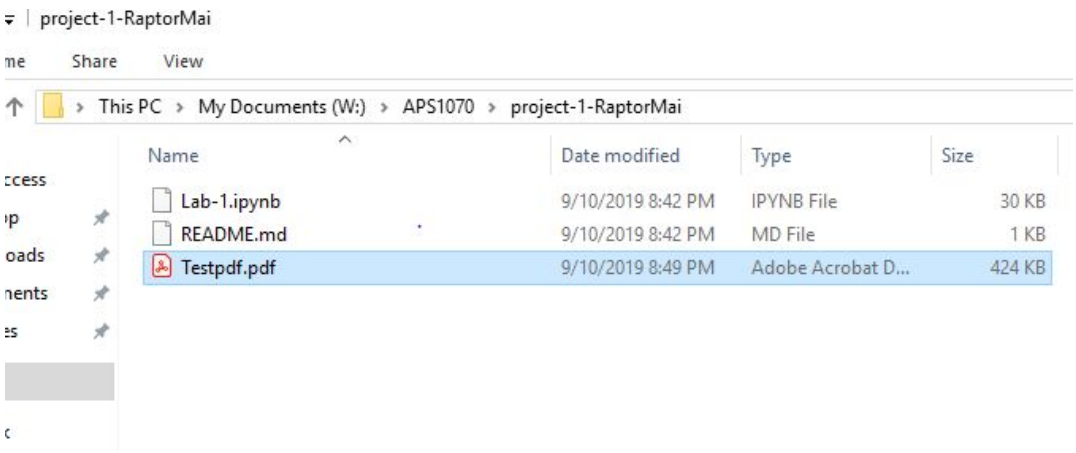

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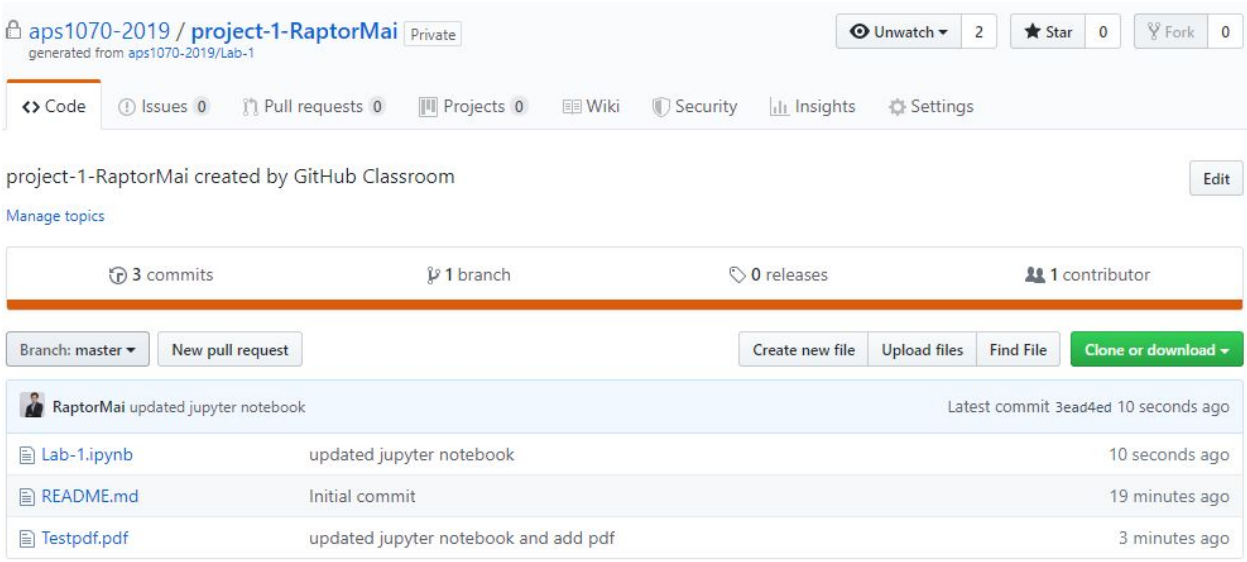
aps1070-2019 / project-1-RaptorMai Private
generated from aps1070-2019/Lab-1
Unwatch 2
Star 0
Fork 0
Code
Issues 0
Pull requests 0
Projects 0
Wiki
Security
Insights
Settings
project-1-RaptorMai created by GitHub Classroom
Edit
Manage topics
3 commits
1 branch
0 releases
1 contributor
Branch: master
New pull request
Create new file
Upload files
Find File
Clone or download
RaptorMai updated jupyter notebook
Latest commit 3ead4ed 10 seconds ago
Lab-1.ipynb
updated jupyter notebook
10 seconds ago
README.md
Initial commit
19 minutes ago
Testpdf.pdf
updated jupyter notebook and add pdf
3 minutes ago