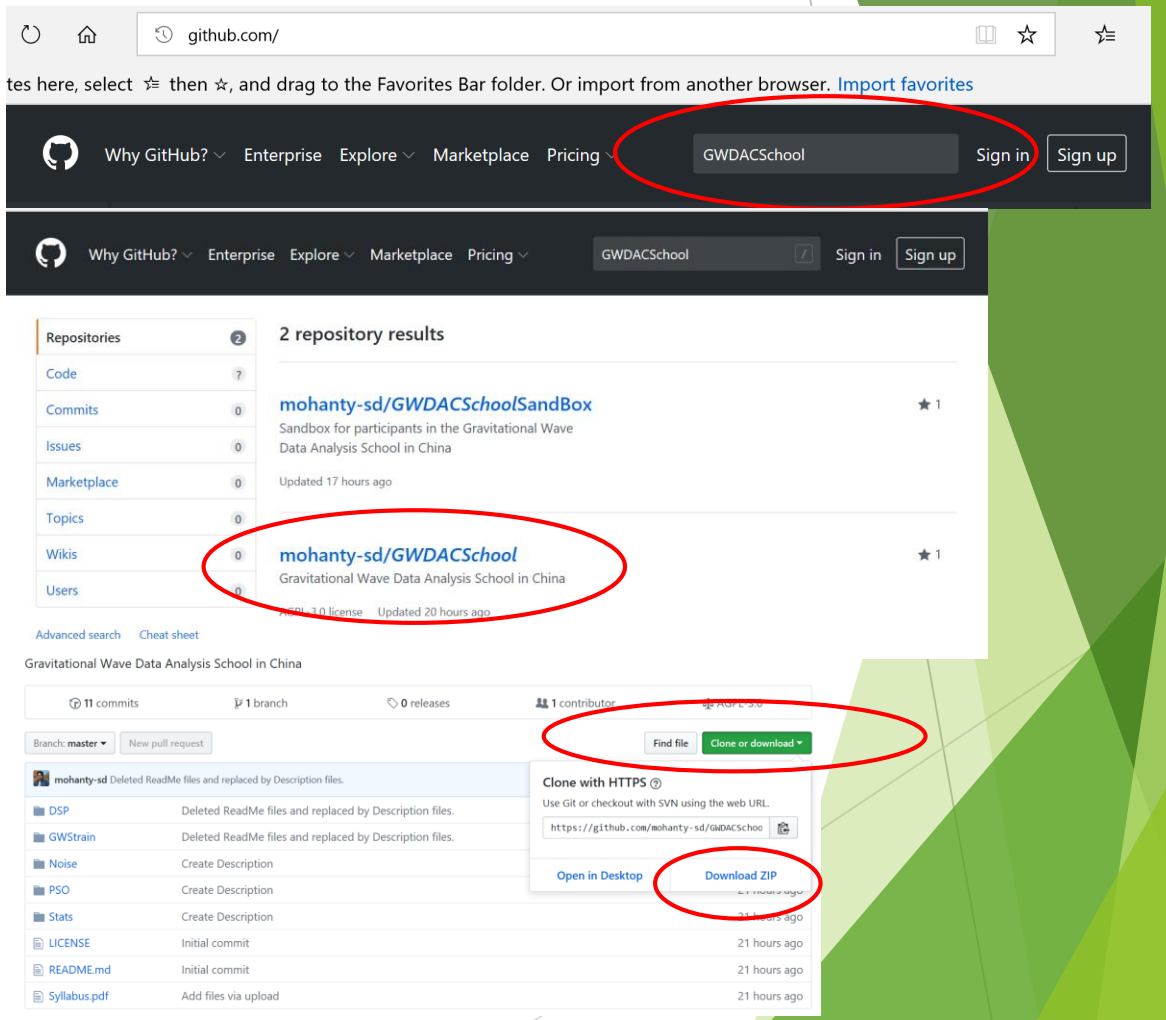
Lab slides and Example codes

- Lab slides and associated code examples will appear in the GitHub repository: **GWDACSchool**
- Go to : github.com
- Search for the above repository name
- Download the contents
  - For just one file (e.g., Syllabus.pdf), click on the file name followed by “Download”

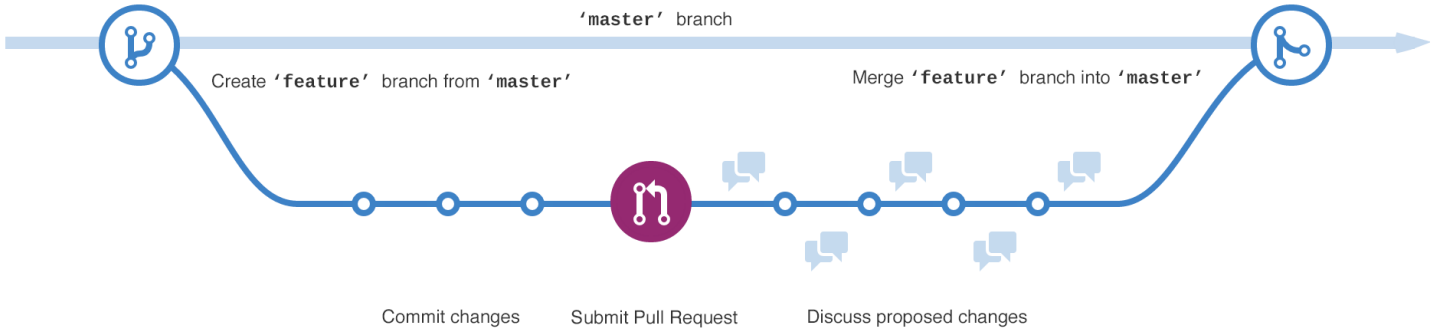


Git and GitHub

- **Version control**
  - Maintaining a record of ***all*** changes made to a file, allowing any version of the file to be reconstructed
  - Allowing multiple users to make local changes to the same file and to merge the changes safely
  - Usually used for codes but also for any other content
- Everyone involved with coding should become familiar with some version control system
  - Especially important if you are working in a team on some project
- Git is a popular version control system
- GitHub is a web-based version control system
  - Public repository: Free
  - Private repository: Paid
- Tutorial: https://guides.github.com/activities/hello-world/

Basic idea behind Git

- **Repository**: like a master copy of the files under version control
  - "A **repository** can contain folders and files, images, videos, spreadsheets, and data sets – anything your project needs" – GitHub tutorial
- **Branch**: A local copy of the repository in which you make changes
- Multiple branches can be active at a time opened by multiple developers
- Git will take care of safely merging all the changes made in different branches

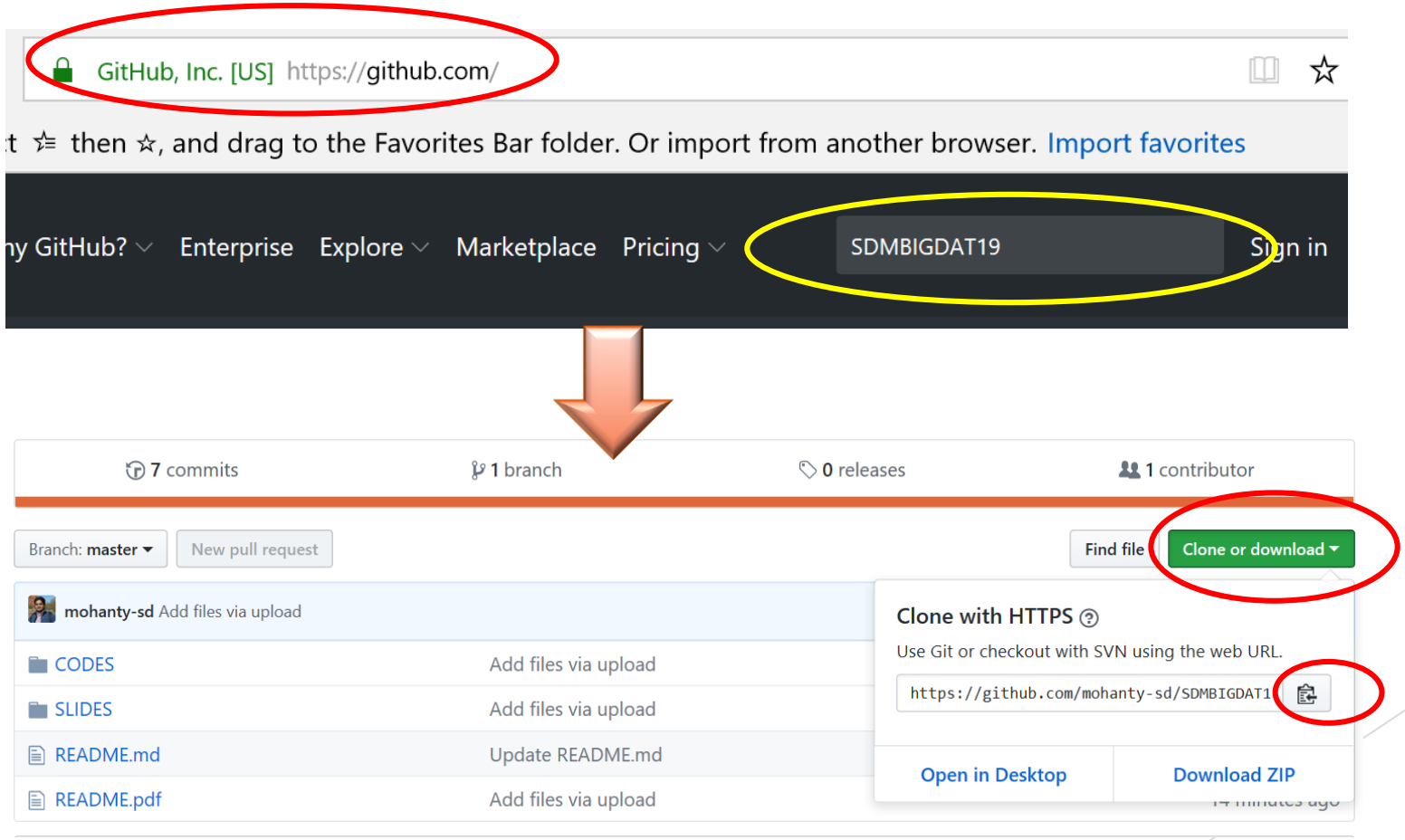


Teams

- **GWDACSchoolSandBox:** is the repository where you will add codes using Git
- Form teams of 3 to 4 people each
  - Members of a team will collaborate with each other codes
  - Different teams will work on different codes in most cases
  - Matlab is the preferred coding language since it will allow you to use codes developed by others
  - If you are not used to programming, make sure to join a team that has at least one good Matlab programmer
- Each team should create one account on Git
  - Designate a member of your team to handle Git
  - You can share the Git username and password but **remember to change the password** after the school!
- Email the account name to Xiao-bo who will add it as a “Collaborator” to the repository **GWDACSchoolSandBox**

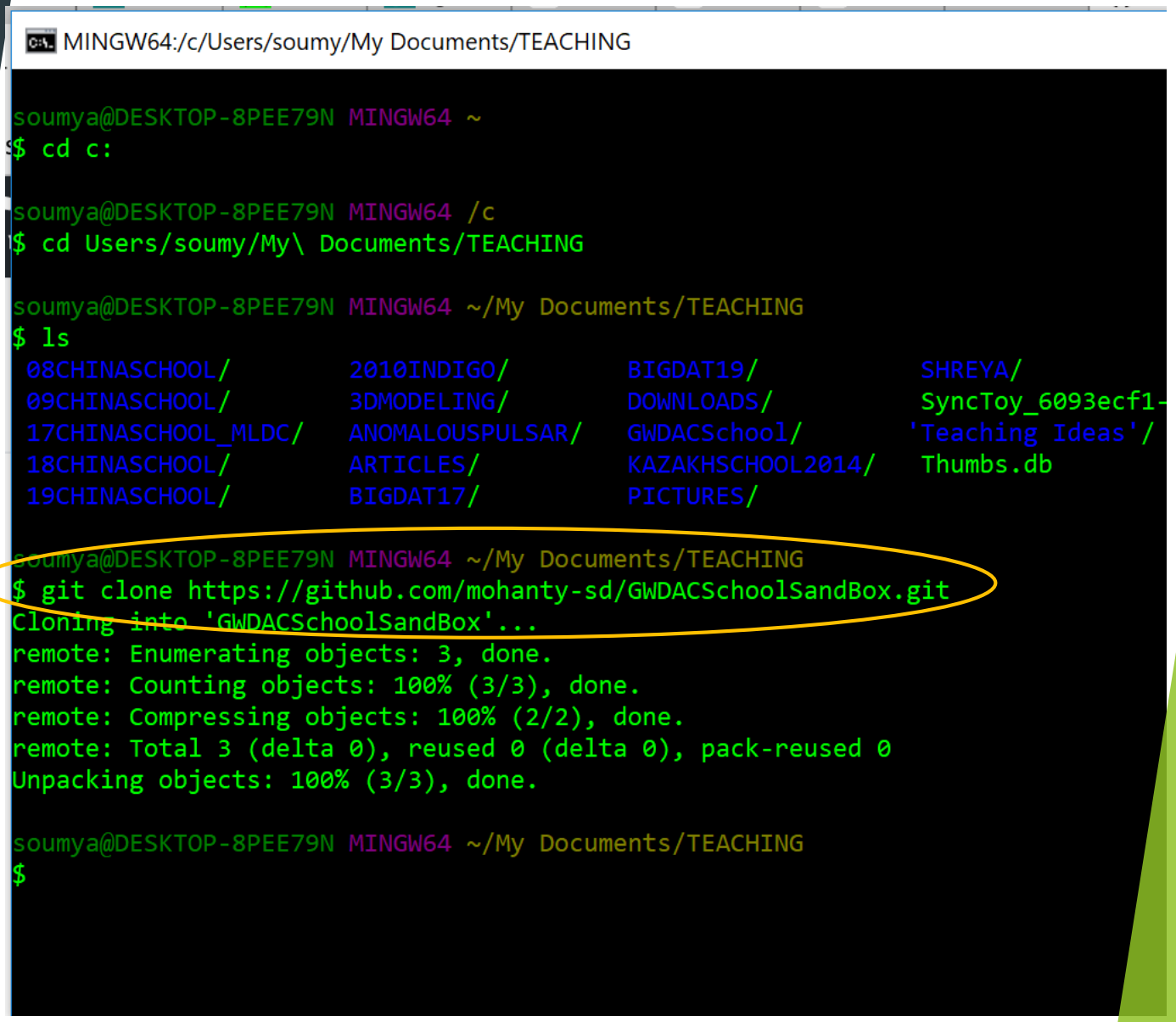
Lab exercise #1

- Clone the repository **GWDACSchoolSandBox** from GitHub
- Below is an example of cloning a different repository



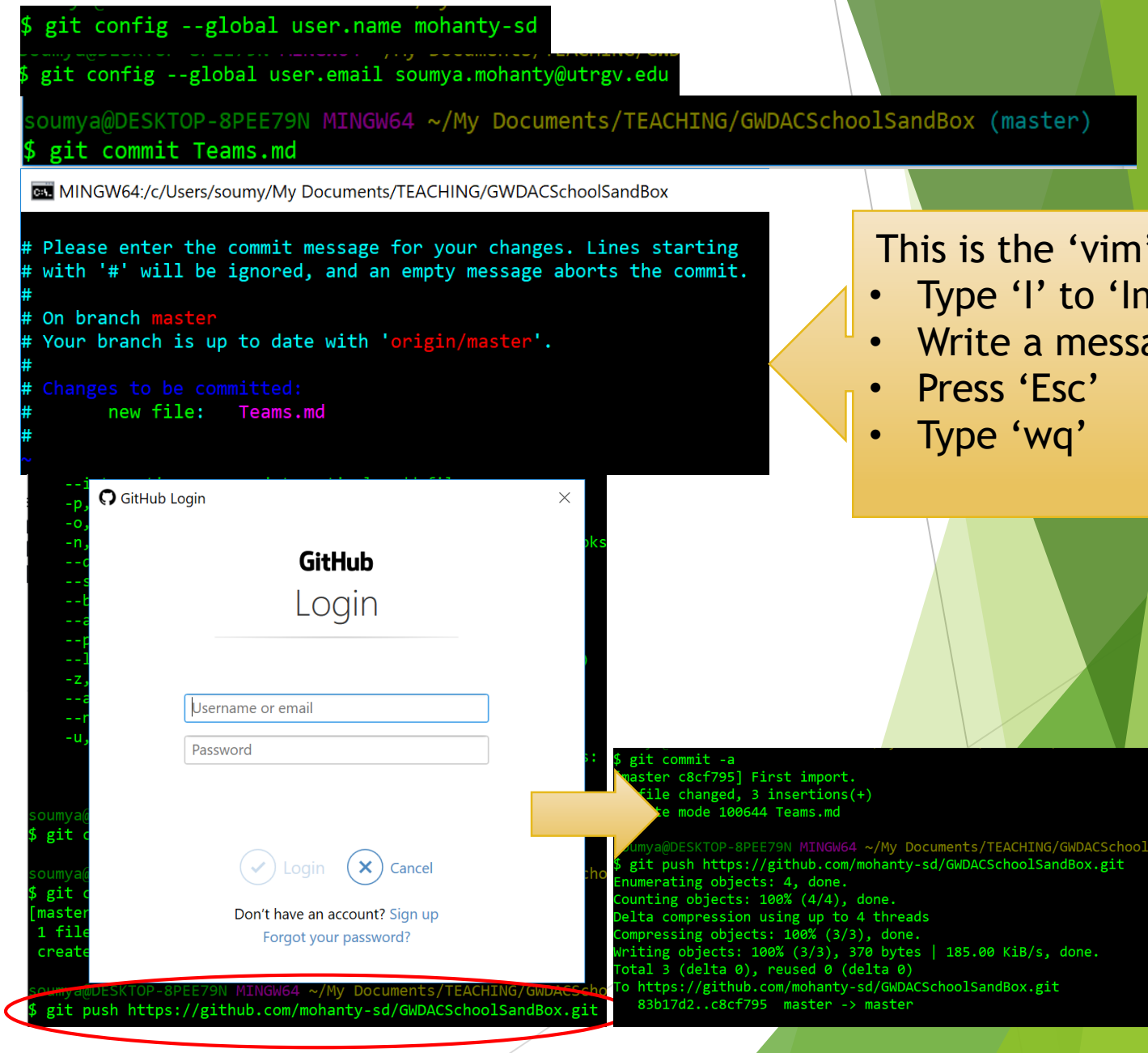
Clone repository

- Git should already be available on Mac and Linux
- Windows users:
  - Search for “git on windows10” in Bing (or your favorite search engine)
  - Or URL: https://git-scm.com/download/win
  - Note: Accept the default choices but check with instructor first
- Clone the repository in a convenient folder as shown in the example



Lab Exercise #2

- **When instructed …**
- **git pull**
- Edit the file called Teams.md in your local branch and add the name of your team followed by the name of the team members **on a separate line**
  - <Team Name>: <name1>, <name2>,…
- **Confirm with instructor …**
- Save the file and push your changes to the main repository as shown



Basic Git commands

- For any file that is edited locally …
- You must first commit the change
  - **git pull**
    - This step should always precede git commit: it merges changes made by others into your local copies
  - **git commit <filename>** (Or, “git commit –a” to commit changes to all files)
    - This tells git that you are ready to push the changes to the main repository
    - Enter a short message describing the change
  - **git push**
    - This pushes your changes to the main repository, allowing others to see your changes
- If you do not wish to keep your changes, then **before doing a commit**
  - **git checkout <filename>**
    - This will revert to the version of the file before your made your changes

Lab Exercise #3

- Verify that you have access to a working copy of Matlab
- **plot(1:10)**