Assignment 1

In this assignment, you will:

- install the main programs we will use in the course
- download a local copy of all course materials to an updatable directory on your computer Desktop
- create your own GitHub account and start a "repository" that is available for everyone to see

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First, read the following document. It will set the stage for version control and why we will be using it.

https://peerj.com/preprints/3159/

Installing the programs we will use in the course...

Install R

Use the following link to download R for your particular computer system: https://cran.cnr.berkeley.edu/

Install R-Studio

Make sure you install R before installing R-Studio https://www.rstudio.com/products/rstudio/download/#download

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Install Git

Here's the download page: https://git-scm.com/downloads

If you are on a Windows computer, click the "Windows" button and your download should start automatically. Run the .exe file to install "Git Bash"

If you are on a Mac, click the "Mac" button and the .dmg file should download automatically. This will open in your software center and install.

If you are on Linux, here are the instructions, depending on your version: https://git-scm.com/download/linux

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Copy course materials to your own computer

Once you have Git installed, open it up (in Windows this will be a shortcut called "Git Bash", in Mac or Linux, just open your terminal -that scary command prompt- and it will be working in the background) You will see a simple command line interface.

Navigate to your computer Desktop using the command-line. If you've never done this before, here's a nice introduction: https://computers.tutsplus.com/tutorials/navigating-the-terminal-a-gentle-introduction--mac-3855

Basically, you can enter commands to move into or out of directories and look at what files are present.

- the command "ls" lists the files in your current directory

- the command "pwd" shows you the PATH and name of your current directory
- the command "cd" stands for 'change directory'

Here's an example output from those first two commands:

```
ls #this lists files in my current directory
```

```
## Assignment_1.html
## Assignment_1.pdf
## Assignment_1.rmd
## Assignment_2.txt
## Assignment_3_easy_way.R
## Assignment_3.R
## Assignment_4_CO2_instructor.R
## Assignment_4_CO2.R
## Assignment_4_for_credit.R
## Assignment_4_for_credit.txt
## Assignment_4_modeling.R
## Assignment_5_plotting.R
## Assignment_6
## file.html
## file.rmd
```

```
pwd #this tells me what my current directory is
```

```
## /home/gzahn/Desktop/GIT_REPOSITORIES/Data_Course/Assignments
```

The "cd" command requires a bit more. You have to tell it what directory to change to...

Mac and Linux users can probably just type "cd ~/Desktop" and they will instantly be on their Desktop folder Windows file paths are a bit different, but it's probably something like this:

```
cd C:\Users\YOUR_NAME\Desktop
```

Once you're in your Desktop folder (you can check with "pwd") copy and paste the following into your terminal:

```
git clone https://github.com/gzahn/Data_Course.git
```

This will download a folder of files onto your computer. It will be found wherever you were when you entered the previous command....so hopefully your Desktop. I'm having you put it there because we will be accessing it a LOT during this course. This folder has all the stuff we will use in class. Code examples, data sets, assignments, readings, even exams are found in this new directory

That takes care of the software installation and course materials. Now, you need to set up your own GitHub account online.

Your GitHub account

1. Navigate online to https://github.com/ and sign up for a free account. Please choose a professional-sounding username. Don't sign up as "PukeMonster55" or anything like that. This GitHub account is a way for you to store version-controlled code and data. It's something that you can put on your CV/Resume to demonstrate coding ability. Save your password someplace safe. Don't give it to anyone, including me.

2. Create a new repository on your GitHub page called "Data_Course_YOUR-LAST-NAME" (your last name, in all-caps, no spaces)

- Look for the "+" in the very top-right of the web page
- Enter the name "Data_Course_YOUR_LAST_NAME" where prompted (last name in all-caps, no spaces)
- Leave the "Public" option checked
- Be sure to check the box "Initialize this repository with a README"

3. Back in your terminal, navigate to your Desktop with the command-line again

4. Now clone the github page you created (The one called Data_Course_YOUR-LAST-NAME)

- Hint: use the same "git clone" command as above, but modify the web address to your new GitHub repository (Copy and paste from the web browser) This will import the website repository onto your personal computer (as a git repository)
- You now have two folders on your desktop. One called "Data_Course" and one called "Data_Course_YOURLASTNAME"

8. Navigate into this new repository (The one called Data_Course_YOUR-LAST-NAME) and type the following commands in order:

   (actually, cut-paste is better than typing. Coders use CTRL-C / CTRL-V more than anything else!)

   (What?! It's not pasting text into your terminal? Ah, use CTRL-SHIFT-V to paste into your terminal!)

```
echo "This README file contains information about my uploaded assignments" >> README.md
git add README.md
git commit -m "1st commit"
git push
```

```
(Here it will ask for your GitHub userID and password....enter those when asked)
This series of commands commits your changes (Adding that text to the README.md file)
and pushes the changes back onto the website version
```

9. Check back on your GitHub page online... if you see that new text ("This README file contains information about my uploaded assignments") then you are finished!

10. To get credit, upload a link to your GitHub repository to "Assignment 1" in Canvas. I'll click on that and see whether your README.md file is correct.

You now have a copy of all the current course materials along with your own personal repository This GitHub repository is where you should keep projects you're working on, notes, examples, data sets, etc.

Warning: I will be cloning all of your repositories onto my own computer to keep track of your course work So don't write hate mail about me in files in that directory.

We will discuss what is actually going on with all of this in class, but this is to test whether you can follow precise instructions and troubleshoot.

Don't be afraid to ask others/instructor/Google for help with this!