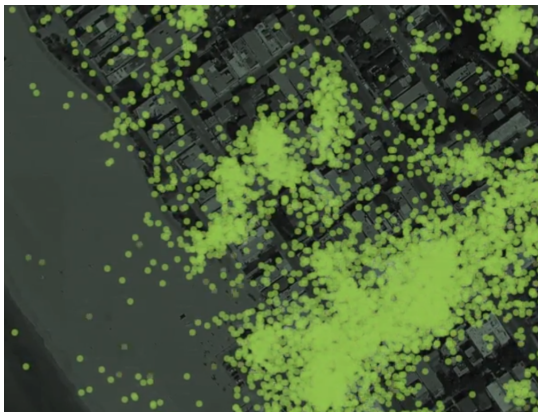
Lab 1 Assignment:
Installing Tools and Reflection
Submit deliverable(s) through your assignment GitHub repository.
Place submitted documents in the `writing/` directory

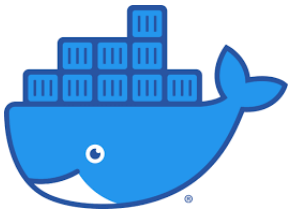


Objectives

To learn how to navigate the directories using a command line interface. To establish and configure the Docker container system and GitHub repositories that will be used in this course throughout the semester; to learn basic commands for downloading course materials from the instructor and for submitting material to the instructor using `Git`. To find two (2) articles describing what could be a potentially unethical usage of data.

Part 1: Installing the Tools

In this part, there is no deliverable to submit, however it is necessary that you have these tools installed and working for the next steps of the class.



Docker

In our course, we will be using command-line tools that may be facilitated by in Docker container environment. If you have not already installed Docker, please visit the Docker *Getting Started*

website (link: `https://www.docker.com/get-started`) to setup Docker on your machine. There is no deliverable for this installation in this lab, but it is assumed during class that you have correctly installed Docker on your machine.

For more information about installing and using Docker in our department, please watch Dr. Jumadinova's video, *Running and Testing Programs with Docker and GatorGrader* at the link; `https://www.youtube.com/watch?v=iceAgNEORCA`.

Git

Practicing software developers normally use a version control system to manage most of the artifacts produced during the phases of the software development life cycle. In this course, we will always use the `Git` distributed version control system to manage the files associated with our class, laboratory and practical sessions. In particular, we will securely communicate with the GitHub servers that will host all of our projects. In this laboratory assignment, we will perform all of the steps to configure the accounts on the departmental servers and the GitHub service. As you will be required to use `Git` in the remaining laboratory and practical assignments and during the class sessions, please be sure to keep a record of all of the steps that you complete and the challenges that you face.

Please note that as you are submitting your work, please do not upload unnecessary files in your submission directory. Submit only what is being requested.

Start by Creating your Account on GitHub

It is assumed that you already have an account on GitHub but if you do not, then please visit `github.com/` to create your account using your Allegheny email address. Follow the account generation links to create an account on GitHub using a normal name (to identify you) and be sure to add a current photo of yourself when completing your profile.

Now, Install the Git Software Client on your Machine.

Git and MacOS: If you have never used `Git` on your MacOS machine, then simply going to the terminal prompt and typing,

```
$ git
```

will likely signal you to download Apple's development suite, `xCode`, to install the necessary packages to run `Git`. Let this install continue to complete the setup of the software.

Git and Windows: On Windows, The `Git` software does not come pre-installed; it must be downloaded and installed. Please visit *Git For Windows* (at link:`https://gitforwindows.org/`) to download and install this client. In addition, there are many pieces of information on this website to help you get started. If you are having trouble with your `Git` client on your Windows machine, please first perform online searches to research answers to your concerns. If you still have trouble after completing your online research, please see the course' Technical Leader(s) or the instructor who may be able to help.

Add Your SSH Keys?

SSH keys allow you to interact with GitHub using secure means. Using these keys, you can conveniently push and pull data from GitHub without having to input your user name and password each time. When developing code, it will be desirable to make frequent pushes to GitHub with your code so that any problems or bugs, can be isolated with the development of specific parts of code.

To learn more about creating and adding your `ssh` keys to your GitHub account. Please visit `https://www.ssh.com/ssh/keygen/` to learn how to set-up your security keys. Let the instructor know if you have any questions with this task. For more information about `ssh` keys, please watch Professor Luman's video, `ssh` at the link below.

`https://www.youtube.com/watch?v=qEPjUGQFmzQ&list=PLsYZRXov75ZHSwWiCk0-jd1RcTuu_-zmD`

If all is installed, Clone Your Assignment Repository

In this section, we will be using `Git` commands. It is suggested that the reader refer to online searches for help. For example, GitHub provides good documentation at the following link; `https://git.github.io/htmldocs/git.html`.

In many cases, you will be given a new repository containing assignment materials and you will save your files in this assignment repository as you continue to work on them. Copy and paste the assignment repository cloning command into your terminal to create your assignment repositories. Be sure to place your assignment repositories in a directory such as `cs301/` to keep your class materials organized by class.

Today's assignment repository can be found at the below link to a GitHub Classroom repository. Here you will work on your assignment and then push your work to the cloud where the instructor will be able to view your work for grading. Often, there will be files in your assignment repositories which you are to edit before you submit them by using the below commands for `git`.

`https://classroom.github.com/a/GbYailil`

To use this link, please follow the steps below.

- Click on the link and accept the assignment

- Once the importing task has completed, click on the created assignment link which will take you to your newly created GitHub repository for this lab,
- Clone this repository (bearing your name) and work locally
- As you are working on your lab, you are to commit and push regularly. The commands are the following.
  - `git add -A`
  - `git commit -m ‘‘Your notes about commit here’’`
  - `git push`

Part 2: Reflection and Researching

Deliverable: Please locate the article; (*Twelve Million Phones, One Dataset, Zero Privacy*, By Stuart A. Thompson and Charlie Warzel, which is available at the below link.

`https://www.nytimes.com/interactive/2019/12/19/opinion/location-tracking-cell-phone.html`

In the article, location data, extracted from smartphones, is described as being used to track the whereabouts of seemingly any person who has a smartphone. Please read the article to learn more about this topic and to prepare yourself to respond to the reflection questions of your lab.

In your reflection, you are to address the following questions. Your writing will not be more than about a page.

1. What do you believe are benefits and challenges?
2. What are the major disadvantages?
3. What you you think is the future of the technologies being discussed in the article?

For this deliverable, you will be editing the `writing/reflection.md` file of your repository.

For your deliverable, you are asked to find two (2) articles which contain discussion of the analysis of data in an application that could be easily abused, or could converge on an unethical result. Your articles ought to be fairly current – within the last three years, and are from reputable sources of journalism. For both of your articles, you are asked to write a brief summary in your GitHub Classroom repository for this assignment.

For each article, please address the below issues.

1. Citation or reference
2. Brief summary
3. A benefit of the technology
4. A disadvantage of the technology

For this deliverable, you will be editing the `writing/twoArticles.md` file of your repository.

- Your report should give the name of the tool, the Web site(s) and/or an article that introduces it. In addition, you are to provide a brief, but detailed, description of the features that the tool provides. Why is this tool important to databases? What does it do? Who uses it?
- Please use the Markdown file to prepare your report. For this, you will have to edit the file; `writing/report.md`. Be sure to add your name and the date to your work.

Required Deliverables

1. Install Docker, make an account on `GitHub.com` and install the `git` software client for your machine.
2. Complete the `reflections.md` text file in markdown with your thoughts on the article.
3. Complete the `twoArticles.md` text file in markdown with your two researched articles.
4. Extra resources for using markdown include;
   - **Markdown Tidbits**: `https://www.youtube.com/watch?v=cdJEUAy5IyA`
   - **Markdown Cheatsheet**: `https://github.com/adam-p/markdown-here/wiki/Markdown-Cheatsheet`
5. Do not forget to use the above `git` commands to push your work to the cloud for the instructor to grade your assignment. You can go to your GitHub repository using your browser to verify that your files have been submitted. Please see the TL's or the instructor if you have any questions about assignment submission.

Checks for GatorGrader

GatorGraderis a software that we will use to determine that all parts of your lab have been addressed. These below checks will help you to know that your work is complete when you submit it using `git`.

1. Your deliverable files exist (i.e., `writing/reflection.md` and `writing/twoArticles.md`).
2. Your name has been added.
3. Each Markdown file contains at least 100 words that you are to add.
4. The `TODO` tags have been replaced with your work.
5. Your project has been pushed (committed) at least three times.

Is your work is complete, then the checks will be completed and there will be a green check-mark in the upper-middle of your GitHub repository's page. This check-mark can be found on the bar above where your files are listed on the website.