Lab 1: Taming The Tools

Introduction

In this lab, you will learn a set of tools that are essential for your assignments. This document also guides you through a part of processes for setting up your Git repository for this course, which will be helpful to manage your progress when you work on the assignments.

Part 1: Working on the remote server

Through the semester, you will gain experience working in terminal software to write/compile/run programs. We will be using one of the Tufts CS servers, named **homework**. We use only the homework server in order to make sure that everyone in the class uses the same set of software tools to work on the assignments.

1. Log into a lab computer (local machine).
2. Open the **Terminal** application.
3. Use the **ssh** command to access the homework server (remote machine) from the local machine.

   ```
   $ ssh YOUR_CS_LOGIN_NAME@homework.cs.tufts.edu
   ```

4. Use the **exit** command to leave the remote machine.

   ```
   $ exit
   ```

Part 2: Setting up your Git repository

Git is a version control system. To find why we want a version control system, take a look at Git - About Version Control.

On the local machine:

1. Open a web browser and go to https://github.cs.tufts.edu
2. Create a repository.
   a. Repository name "**comp15**"
   b. Make sure to choose "**Private**"
   c. Check "**Initialize this repository with a README**"
   d. "Add .gitignore": "**C++**"
   e. Click "Create repository"
3. Log in to the homework server.

On the remote machine:

4. (Change the current working directory if you like.)
5. Use the **git** command to **clone** the git repository, which you have just created, to under the current working directory.

```
$ git clone https://github.cs.tufts.edu/YOUR_CS_LOGIN_NAME/comp15.git
```

6. Move to the **comp15** directory and list all the files under the directory.
7. Try using the following commands to see what happens.

```
$ git branch
$ git status
$ git log
```

8. Create a directory named **lab1** under the **comp15** directory.
9. Move to the **lab1** directory.
10. Create a new plain text file named **README** and save it under the **lab1** directory and write down your name in the file. You can use any text editor for this. e,g, emacs, vim, nano, etc.
11. Use the **git** command to **add** the new (**README)** file.

```
$ git add README
```

12. Use the **git** command to **commit** the change to the local repository.

```
$ git commit -m "Add lab1/README"
```

13. Use the **git** command to **push** the change to the remote repository.

```
$ git push origin master
```

On the local machine:

14. Open a web browser and go to https://github.cs.tufts.edu
15. Make sure that the **lab1** directory and the **README** under the **lab1** directory appear in your **comp15** repository.

On the remote machine:

16. (Change the current working directory to the **lab1** directory.)
17. Create a new .cpp file named **lab1.cpp** and save it under the **lab1** directory.
18. Write a program that prints out **Hello, World!** to stdout.
19. Compile and run the program.
20. If the program works as expected, commit the change to the local repository and push it to the remote repository as well.

21. Update the program (**lab1/lab1.cpp**), so it prints out **Hello, Comp15!** to stdout.
22. Compile and run the updated program.
23. If the updated program works as expected, commit the change to the local repository and push it to the remote repository as well.

Part 3: Submitting programming assignment via Gradescope

In most cases, your programming assignment will be auto-graded.

1. Open a web browser and go to https://www.gradescope.com
2. Submit your **lab1.cpp** and **README** for **lab1-part3**.

Part 4: Submitting non-programming assignment via Gradescope

1. After reading through the course page https://www.cs.tufts.edu/comp/15/ including the syllabus, creating a document that indicates that you have read the syllabus and the university's academic integrity policy. https://students.tufts.edu/student-affairs/student-code-conduct/academic-integrity-policy Add your name and date as well.
2. Go to https://www.gradescope.com
3. Submit your document for **lab1-part4**.

Part 5: Creating a post on Canvas for discussion

1. Go to https://canvas.tufts.edu
2. Using the discussion feature, creating a new post that includes your name and the word "**lab1-part5**". This is just for practice. You can add anything to your practice post.