Project 0. Setting up your development environment

Welcome to CS 186! In this first project, we will help you set up the development environment that you will use throughout the course. Please take this project seriously—an improper setup can lead to subtle bugs in your future work in the class.

Setting up your course accounts

This course will use EECS instructional class accounts to manage grades. All students will get accounts online from http://inst.eecs.berkeley.edu/webacct starting Aug 21. Let us know if you have any issues creating an account. These usernames are of the form **cs186-xyz or cs286-xyz** and you will be given a temporary password. This sets your EECS instructional account.

We will be using github to serve and manage projects. Please sign up for a github account if you haven't already: https://github.com.

Git is a free and open source version control software package. We will be using git quite a bit in this course to manage projects and homeworks. If you are unfamiliar with git, please follow the tutorial at: https://try.github.io

Once you have a EECS inst account and a Github account follow the instructions in the following link. Remember to only enter your three letter account name (i.e., what comes after the cs186-): http://cs186.eecs.berkeley.edu/registration.

To confirm that your github accounts have been properly set up, first login to github. You should be able to visit `https://github.com/berkeley-cs186/<last_three_letters_inst_account>` (e.g., `https://github.com/berkeley-cs186/xyz`) . Do not initialize the repository through github! This repository is owned by the organization berkeley-cs186, but you will have write access to it.

This is a good checkpoint--please let us know on Piazza ASAP if there are any problems here.

Setting up the course virtual machine

VirtualBox is a general-purpose full virtualizer for x86 hardware, targeted at server, desktop and embedded use. Download and install VirtualBox from: https://www.virtualbox.org/wiki/Downloads. The virtualbox website has installation instructions for Windows, Macos, and Linux

Then, download the course VM: https://drive.google.com/open?id=0B8WibrU9E8xAT2ZObG8zeUcyQWs

Open VirtualBox and click **File > Import Appliance**. Click on the folder icon and select the path of the file that you just downloaded. The initialization should take about 5-10 mins.

Once the VM is imported, double click on it to power it on. You should be greeted with a terminal and prompted to log in. The username and password are both **vagrant**.
Next, click on the terminal icon at the bottom of the desktop. You will now load your project repository. First, configure your git account by copying the following commands into the terminal. Replace `<your_email>` and `<your_name>` with your email and your name.

```
$ git config --global user.email "<your_email>"
$ git config --global user.name "<your_name>"
```

Then, you will clone a “bare” repository in your home directory:

```
$ cd $HOME
$ git clone --bare https://github.com/berkeley-cs186/course.git
```

Enter the “bare” repository:

```
$ cd course.git
```

Mirror this repository to yours (last three letters):

```
$ git push --mirror https://github.com/berkeley-cs186/<your_inst_account>.git
```

Once this is done, you can leave the course.git directory:

```
$ cd ..
```

You are done! If you visit https://github.com/berkeley-cs186/<your_inst_account>, you will see the basic project skeleton.

First Commit

Now, we will walk you through your first commit. This will get you familiar with the procedure used to submit homework assignments. First, clone the newly created course repository:

```
$ git clone https://github.com/berkeley-cs186/<your_inst_account>.git course-projects
```

Enter the newly created repository:

```
$ cd course-projects
```

For every homework assignment and project, you will create a new branch that identifies the project. This keeps the version control consistent and keeps a paper trail of your submissions throughout the semester. The course staff will use the master branch of your repository to push project infrastructure updates and solutions. **MODIFY THE MASTER BRANCH AT YOUR OWN RISK.**

Before each starting each project run:

```
$ git checkout master
$ git pull
```

After doing do, create a new branch. Course staff will give you the name of this branch in the project description. For this homework it is **hw0**:

```
$  git checkout -b hw0
```

In this repository, there is a file `hw0/hw0.sql` . Open it up with a text editor and modify the file. Make sure to remove the TODO comment. After you are done add this file and commit it to github:

```
$ git add hw0/hw0.sql
$ git commit -m “my greatest commit”
```

REMEMBER TO PUSH YOUR CHANGES TO GITHUB!!!

```
$ git push origin hw0
```

Advanced Tips

Reminder to push your code
To create a friendly reminder to push your code after you finish developing.

Create a new file:
$ emacs .git/hooks/post-commit

The file should have the contents:
`#!/bin/sh`

`echo “Remember to run: ” git push origin <branch name>`

Using Docker
If you are using docker you need to turn off Hyper-V

Editing files in the VM
The virtual machine is running Ubuntu 14.04 with the Xfce desktop environment. The virtual machine ships with PostgreSQL 9.6, Java 8 (installed in `~/jdk1.8.0_131`), Eclipse Neon (installed in `~/eclipse`), and the community version of IntelliJ IDEA (installed in `~/idea-IC-172.3757.52`). You can write code in the virtual machine (recommended) or on your local machine (not recommended), but all code will be tested in the VM.

Vim Tutorial
Vim is a lightweight text editor built to make creating and changing any kind of text very efficient. It is included as "vi" with most UNIX systems and with Apple OS X. For a tutorial, visit: http://www.openvim.com/