

C 343 Project 1 - Getting to Know Python and GIT

Due 11:59pm, August 28, 2015

1 Using the GIT Version Control System

A version control system (aka. software configuration management (SCM), source code management) enables sharing of documents (usually software) among teams of people by providing a central repository, tracking the history of the software, enabling branching and rolling back, and most importantly, detecting when there are conflicting changes to the software. Almost every software company uses some form of version control, so being familiar with version control systems is an important skill.

Indiana University has an enterprise installation of the popular GIT version control system, which I refer to as “github at IU”. You will be using github at IU to work on and turn in your projects. You can access github at IU at the following URL:

<https://github.iu.edu/>

(There is another github, <https://github.com/>, but we will not use that github during this class.)

Please follow these steps:

1. Log in to github at IU using your IU username and passphrase. The act of logging for the first time will create an account for you.
2. Once you’ve logged in, read the 4-step “GitHub Bootcamp”.
3. Create a new repository (“repo” for short) named C343Fall2015 (exact spelling, capitalization included) and click on the option to include a README file.
4. Under the “Settings” for that project, add the Professor (jsiek) and the AI’s to the list of “Collaborators”. (The AI usernames are listed on the course website.)
5. Install a git client on your computer. For the command terminal version, you can download from

<http://git-scm.com/downloads>

Alternatively, for Windows, github makes a GUI client that you can download from here:

```
https://windows.github.com/
```

You will have to pick github enterprise when you go to log in once installed and, should be `github.iu.edu` should be the domain needed to use it.

6. On your computer (laptop, lab computer, etc.), clone your `C343Fall2015` repository. Using a command terminal, this is accomplished by typing the following:

```
git clone https://github.iu.edu/your-username/C343Fall2015.git
```

This will create a sub-directory named `C343Fall2015` under your current directory. If you are using the Windows GUI client for github, the `C343Fall2015` directory will appear under a directory named `GitHub` (you can search for this on your computer).

2 Choose a Partner

The projects in the course will be completed in groups of two people. Write the name of your partner in the `C343Fall2015/README.md`, as in, “Partner: Jane Smith”. Do a git add, commit, and push to upload this change to your github at IU repository.

3 Eclipse and PyDev

If you do not already have a favorite text editor, debugger, or integrated development environment (IDE), we recommend that you use Eclipse with the PyDev plugin. The LiClipse distribution of Eclipse comes with PyDev pre-installed, so we recommend using it:

```
http://brainwy.github.io/liclipse/download.html
```

When you open LiClipse, it will ask you to choose a directory to use as a workspace. Choose the directory of your local clone of your `C343Fall2015` github repository.

Once that is complete, create a project by selecting the “New Project” menu and choose “PyDev”. Name your project `project1` and selection “Python” as the project type. This will create a directory named `project1` in your workspace directory. It will also ask you for a “Grammar version”, select 2.7. For the interpreter, click on the “configure” link, and then selection python.

To enable running and debugging your Python, you’ll need to create a “run configuration” (access by clicking on the downarrow next to the green and white play arrow), choosing “Python Run”.

4 Getting to Know Python

Read chapter 1 of the course textbook, *Data Structures and Algorithms in Python*, by Goodrich, Tamassia, and Goldwasser. Complete the exercises, i.e. “koans”, in the file `c343_koans_part1.py`. Use the Python Tutor, at www.pythontutor.com, to visualize the execution of the koans. and push it to your `C343Fall2015/project1` directory on github. If you are using git on the command line, do a git add, git commit, and git push. If you are using the Windows GUI client, to push changes, you need to enter a summary of your changes and then push the “sync” button.