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Final Project Narrative

This project is a project for my research assistantship. I work for the Gies Business College in the eLearning office on a MOOC based MBA program. This is an all online degree and because the classes are based on Coursera MOOCs, they are often massive, with the largest being over 1000 students. Since the classes are so large, the office often uses automation tools to deal with the amount of students in the courses. In the courses, the graduate assistants create a class roster of the students that is posted publicly, so that students can contact one another easily and see each other’s LinkedIn.

During the semester, an issue came up with the code that was being used to create the class roster. It was a java code that was created by someone who no longer worked in the office. The code used images from LinkedIn profiles to create a nice looking roster. LinkedIn changed its code to prevent data scraping so most of the links for the pictures broke, making the roster look like a mess. I volunteered to create a new class roster program in python to substitute for the old program.

There was already an existing google sheets process to pull the information of all students in the class. The process was to download the listing of students, their netids, and the their groups from blackboard, upload it to google sheets, and then run a macro (or whatever the google sheets equivalent is) that pulled the linked in profile link and email of the student from a sheet of google form responses that students were required to fill out. Then this was downloaded and saved as a csv. This was convenient for me to use as raw data for a python program.

I first set up the python program to import the csv module and read in the csv sheet. I decided to output the html code that would be copy and pasted to blackboard as a .txt file, because I thought it would be simpler to copy and paste and would be more universal – you wouldn’t have to have an html editor to run the program, though realistically if you were running a python script you probably have an html editor anyways. I just thought it would be simpler.

Analytically, I broke the roster down into different parts that would need to be displayed: the group name, the student’s name, the email (a mailto link), the linked in image (which also acted as a link to the page). My first attempt to create the code failed. I broke down the different parts of the roster into different functions, which made it only process one line of the csv before terminating the code.

Then I met with Professor Wickes, and she helped me redevelop my analysis of the problem. She suggested I used dictionaries to approach my problem, with each line one element of the dictionary. I had a really hard time with this because I have a hard time picturing dictionaries as data organization. I had to apply the dictionary accumulator, but in a slightly different way. Then I ended up with an error where the dictionaries were endlessly nesting because I had not defined my dictionary as a 2d list when I had used the append method.

The next issue I encountered was not understanding how to make the group name appear only once for all the students that were in the group. I didn’t realize that the write command could appear multiple times in the code.

When I got the basic fields to appear in the right amounts and in the right order, I added in the html code. I also realized that in the original script that we had been using, no provision was made for students not submitting a linkedin link, which maybe 30% of them had not. I added a function to account for this, where the linkedin image would only be added if the student had actually submitted a linkedin link. I had to add alt text that would read the person’s full name for accessibility purposes, and that made the function more complicated.

The hardest part of this project was actually trying to modify the code to account for my bosses’ various demands. They changed the format they wanted multiple times. I was reminded of a lesson I learned from someone who taught me to create WordPress websites (and use HTML and CSS), which was never show anyone code until they force you to. In this case, I should have waited until my bosses decided whose ideas about how the roster should look would carry the day. I wound up doing a lot more work to keep revising the code to fit different people’s expectations.