Radu Revutchi
15-112 Project Proposal
October 31, 2017

1) My program will be a course planner for the Spring 2018 school semester. My program will get all of the available courses for the CMU-Q Spring 2018 semester from the the CMU course catalog by web scraping and analyzing the html of the course catalog webpage. It will also get the course details for all of the courses carnegie mellon university has to offer overall using the same html web scraping technique. Using the GUI, the user will select all of the courses he or she has taken during their time at cmu. My program will then show all of the courses that are available to take based on completed prerequisites. The user will select their top 10 preferred courses in order of importance/interest. The user will then select the number of units they would like to take during the Spring 2018 semester. Based on this, my program will output and present several different course schedules for the Spring 2018 for the user to pick one. The user may also import their own calendar schedule which represents their 'free hour' times for non-course work time slots. My program will take this into account and not set any courses during the user's necessary 'free time'. Instead of importing a calendar schedule file, the GUI will have the option to pick any time slots during which the student does not want to take courses. Finally, the user will be able to export/download this course schedule as a calendar file. If the user does not want to download this calendar, the user may use my socket connection to save the calendar to my server at home which will be working as a socket server. The user may then later access this calendar via the GUI (via sockets).

2) Socket Library - send and receive socket connections
Beautifulsoup library - html code manipulation and processing
Urllib2 library - getting the real time course data for spring 2018
Calendar library - working with calendar files
Tkinter Library - setting up the graphical user interface

Features:

- Selection of what courses you have previously taken from a list
- Selection of what courses you want to take during Spring 2018
- Input of maximum number of units you want to take
- A set of possible course outlines for semester will be presented
- Importing calendar file of your weekly schedule
- Setting designated times during the week to have to classes
- Exporting/downloading the calendar file to your system for personal use
- Saving your calendar options using sockets to my server for later retrieval

3) User interface will be one main page. The main page will have the options to either view a previously saved calendar on the server using your username or to create a completely new course plan for the spring 2018 semester. When the 'view previously saved course plan' is selected, the main window will close and a new window showing the course plan/weekly calendar will appear. If 'create a new course plan' is selected, the main window will close and a new window will show up. This new window will display a list of all courses that cmu offers and the user will be able to select all of those that he or she has previously taken and passed. Next to that list, the user will be able to select their top 8 courses which they want to take in order of importance and input the maximum number of units. Under that, there will be a button to import a calendar file which marks your other commitments during the week. There will then be a button called 'generate possible course plans'. This will close the current window, calculate the different course plans, and will open a new window where these course plans will be displayed. The user will then see a list of possible course plans in that new window and will be able to select one and view it in a new pop-up window. If the user wishes, the calendar course plan may then be exported as an official calendar file or save it to the server and pick a username. Then, the program exits.

4) November 12 Features:
- Obtaining the course list for all cmu courses and the spring 2018 courses
- It will make a course object for each course
- It will allow the user to pick their top 8 courses and max number of units
- It will be able to calculate the course plans

5) November 23 Features:
- Selection of what courses you have previously taken from a list
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