

Schedule Builder

Description:

This code focuses on being able to build a course schedule for a student at the University of Maryland. The code uses a JSON file and pulls from the UMD.io database in order to show what courses are validated among the JSON file. The user enters credits, days, and time for the course. It also allows you to drop your schedule, clear your schedule, or view it. The schedule is then automatically loaded and saved onto a JSON file that the program uses on the backend to identify the user. The user will input their name which will generate a file to store that individual's schedule and can be used to detect when a different person is using the schedule builder. It stores the course data for each student and allows the information to be retrieved by the student at any time.

How to run on the Command Line:

1. Open folder with the `schedule_builder.py`
2. Run Terminal
3. In the command line, type `"python3 schedule_builder.py"`
4. Enter student name
5. Select between the menu options of 1 - Add a class, 2 - Drop a class, 3 - Clear your schedule, 4 - drop schedule. The options are selected by typing in the number associated with the options.
 - a. If option 1 is selected. Input the correct course code format to add class. Input the amount of credits for the courses added. Input the days the course is to be taken. Input the time the course to be taken. To add another class, a prompt will show up asking if you want to add another class. Input 'y' to add another class or input 'n' to not add another course.
 - b. If option 2 is selected. Input the correct course code in uppercase letters followed by the 3 digits. Course will be dropped.
 - c. If option 3 is selected. This will clear the schedule if there are any classes in the schedule.
 - d. If option 4 is selected. This will display the schedule and the number of courses in the schedule.
6. To go back to menu options, there will be a prompt at the end of each menu option selection (1,2,3, or 4) indicating "Would you like to perform another scheduled action?" Input 'y' to go back to the menu option and input 'n' to quit the program.

How to use/Interpret the output:

In order to properly use the code, you would need to call the code in your terminal using `python3 schedule_builder.py`. For example Devin, would call the code in the terminal then decide whether or not he wants to add classes or drop classes by using the option menu. The user can also pick from the option menu whether or not they would like to display their courses

and have it be shown to them. The code then returns a dataframe showing his courses, the credits they have, when they are, and the time they are at. If the user inputted duplicate courses onto their schedule then it will remove the duplicate courses before displaying their schedule.

Other Files:

The only other file in our repository is the “202008.json” file. This file worked as our external datasource to find out what courses are valid in the UMD library. The source for this datafile is cited below.

Method/function	Primary author	Techniques demonstrated
course_validation	Davis Gamez	Regular expression
__str__ __len__	Davis Gamez	Magic Method(s)
show_schedule	Devin Perry	Pandas filtering duplicates
Extract courseid from source data	Devin Perry	List comprehensions
save / load_schedule	Devin Perry	Json.load/json.dump
options()	Devin Perry	Presents a list of options using /n for the user to choose from.
User option menu	Devin Perry	Conditional expressions
ClassOrganizer	Andy Espinal-Funez	Lambda Sorting
save_schedule	Andy Espinal-Funez	With open

Bibliography

User guide. User Guide - pandas 2.2.2 documentation. (n.d.).

https://pandas.pydata.org/docs/user_guide/index.html - This was used to help build the dataframe and specifically drop duplicates from the students's schedule.

Umdio. (2018). *Umdio-Data/courses at 039ED2989332D6935B668F50F4705911E1DBB558 · UMDIO/Umdio-Data*. GitHub.

<https://github.com/umdio/umdio-data/tree/039ed2989332d6935b668f50f4705911e1dbb558/courses> - This was used to source UMD's course catalog from 2018 and use it to match to the course code's that our users input.

