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CSC365

LAB 1a

I decided to use python because that is the programming language I am most comfortable with. The easy syntax and functionality of the language is more than enough for a lab like this. I wrote my program in VS Code. On startup, the students.txt file is parsed and gathers all the information into an array of dictionaries. Each entry in the array is a student and each student has a key:value pair, the keys being StLastName, StFirstName, Grade, Classroom, Bus, GPA, TLastName, TFirstName, and the value being the student's values. I did all of the tasks by myself. The main() function is where I started and that took about 30 minutes total. The function to parse the students.txt file also took about 30 minutes. The helper functions for the requirements took about an hour. I tested incrementally, first with the parsing function to ensure that the array of student dictionaries was populated correctly. I tested the main() function and the helper functions together once I had finished writing them, since the functions relied on each other. There were minor bugs, mainly type conversion errors, because the dictionary held the values as their proper types, but I had forgotten to convert the int types from a string to an int in the main() function. Testing took about another 2 hours. I'd say I spent about 4-5 hours on this lab. I made typing in the instructions not case sensitive for a better user experience; the program will convert the instructions typed into uppercase and so will assume everything is capitalized after that. My find_by_grade_high_low() function gave me a little bit of trouble at first (more so than the other functions), because of the temporary GPA's I had to keep track of and the student to print out in the end.

Part B:

I created a function to parse teachers and classrooms and a classroom dictionary was established in order to establish a link between the now separate students and teachers data. The way I structured my data in part A bit me in the butt for this part of the lab. Accessing data for the new requirements was much more complicated. For the Average or A function (to calculate gpa), I made it require a third instruction. There is now average <grade level> grade, average <lastname> teacher, and average <bus> bus.