

Lab 1 Write Up

Programming Language: Python

Internal Architecture:

- Python File Objects — used to handle the contents of the students.txt CSV
- Python List Objects — Used to store lines containing query matches for later printing results

Task Log:

	Assigned	Start Time	End Time	Work Hours
User Input Parsing	Landon	(4/4/18) 2 PM	(4/5/18) 3 PM	2
Command Switch Cases	Landon	(4/4/18) 2 PM	(4/5/18) 3 PM	2
File Parsing	Nick	(4/4/18) 2 PM	(4/4/18) 3 PM	1
Line Query Function	Nick	(4/6/18) 2 PM	(4/7/18) 9 PM	3
Result Output	Nick	(4/4/18) 2 PM	(4/4/18) 3 PM	1
Test Suite	Griffin	(4/4/18) 2 PM	(4/9/18) 9:30PM	3
Write Up	Griffin Landon Nick	(4/4/18) 2 PM	(4/9/18) 9:30PM	2

Testing:

R4. S[tudent]: <last name>

- Find matching student last name
- Print last name, first name, grade, classroom assignment of student

- Print last name, first name of teacher

R5. S[tudent]: <last name> B[us]

- Find matching student last name
- Print last name, first name, bus route

R6. T[eacher]: <last name>

- Find matching teacher last name
- Print last name, first name of student

R7. G[rade]: <number>

- Find matching GPA number
- Print last name, first name of student

R8. B[us]: <number>

- Find matching bus route number
- Print last name, first name, grade, classroom of student

R9. G[rade]: <number> H[igh] or G[rade]: <number> L[ow]

- Find matching grade number with highest/lowest GPA
- Print last name, first name, GPA, teacher, bus route of student

R10. A[verage]: <number>

- Find all students with matching grade number and computer average GPA

- Print grade level and average GPA

R11. I[nfo]

- For each grade (from 0 to 6) compute the total number of students in that grade.
- Report the number of students in each grade in the format:
 - <Grade>: <number of students>sorted in ascending order by grade.

Issues Encountered:

- Python's `raw_input()` function throws an exception upon EOF, causing the program to non-gracefully fail with our test scripts since each test input file ended with an EOF. We solved this problem by catching that exception and gracefully ending the program.
- Communication issues on expected output caused tests to fail, but we quickly realized that the result outputted had been changed after communicating with the person implementing the tests.

Final Notes:

We decided to take the user query incrementally, rather than all at once. First, we ask our user for the type of search they would like to make (Student, Teacher, Bus, etc.). Once the initial choice has been made, syntax to complete the query is presented and the user only needs to finish the details. This simplify the user input parsing by breaking it into very clear stages, limiting the number of input errors to check. Furthermore, we added a '-t' interpretation flag to suppress all non-result print statements in order to get rid of user info that wasn't necessary for testing.