Lab 1-2 Write-Up

When we first started planning how we wanted to structure and split up the work for this lab, we had three members on our team, Tania Kabiraj and Salma Hegab. We decided to use Java on VSCode for this lab, because it was the language we were collectively most familiar with. We discussed how we thought we should structure our internal architecture and came to the collective decision that we should use a 2D array to organize the teachers' information and a 2D array to organize the students' information, similar to the one we created in Part 1. This allowed us to decide on a certain order in which we will place each piece of information for each student and be able to easily access a given piece of information by using its index.

Task Log:

Restructuring Part 1…….Tania Kabiraj….30 min
NR1……...Salma Hegab…..30 min
NR2………Salma Hegab.....30 min
NR3………Salma Hegab….30 min
NR4………Salma Hegab….30 min
NR5………Tania Kabiraj….90 min

When it came time for testing, we approached it by each of us testing our own features one at a time. The types of bugs that we ran into were mainly concerned with mixing up the indexes for the inner array, where we would grab the wrong piece of information for a student or retrieving the wrong ArrayLists. Fixing this bug involved changing the index number we were trying to pull or the names of certain ArrayLists, so the time it took was negligible.

We modified our Part 1 code by splitting the one 2D ArrayList into two different ones, one for each of the files. We had to adjust some of the previous functions to take certain information from two different ArrayLists rather than just assuming it all came from the same one. Specifically functions that involved getting information of the teacher and their students needed to be restructured to search for each information individually and merge them together.
Additions/Changes to the Commands:

- Additions:
    - C[lassroom]: <number> [T[eacher]]
        - C[lassroom]: <number>
            - Given a classroom number, lists the last and first names of all of the students in that classroom
            - Ex:
                - Input: Classroom: 104
                - Output: WOOLERY,NOLAN
                -                   VILARDO,EMMANUEL
        - C[lassroom]: <number> T[eacher]
            - Given a classroom number and the Teacher keyword (or the short command of T), lists the last and first names of all of the teachers teaching in that classroom
            - Ex:
                - Input: Classroom: 104 T
                - Output: STEIB,GALE
    - E[nrollment]
        - Outputs the list of classrooms ordered by room number and their respective total number of students in that classroom
            - Ex:
                - Input: E
                - Output: 101: 1
                -                 102: 5
                -                 103: 2
                -                 104: 2
                -                 105: 6
                -                 106: 2
                -                 107: 7
                -                 108: 11
                -                 109: 5
                -                 110: 2
                -                 111: 9

- 112: 8

  - A[nalyze]G[rade]: <lastname>
    - Given the last name of a certain student, outputs the student’s GPA and the average GPA of the students in the same grade as the given student
      - Ex:
        - Input: AG: CORKER
        - Output: Student GPA: 3.12
        - Average GPA of students in grade 4: 2.9513333333333334
  - A[nalyze]T[eacher]: <lastname>
    - Given the last name of a certain student, outputs the student’s GPA and the average GPA of the students with the same teacher as the given student
      - Ex:
        - Input: AT: CORKER
        - Output: Student GPA: 3.12
        - Average GPA of students with teacher HANTZ: 2.9133333333333336
  - A[nalyze]B[us]: <lastname>
    - Given the last name of a certain student, outputs the student’s GPA and the average GPA of the students with the same bus route as the given student
      - Ex:
        - Input: AT: CORKER
        - Output: Student GPA: 3.12
        - Average GPA of students on bus 53: 3.0555555555555554
- Changes:
  - G[rade]: <number> [H[igh] | L[ow] | T[eacher]]
    - G[rade]: <number> T[eacher]
      - Given a grade number and the keyword Teacher (or the short command of T), lists the last and first names of all of the teachers teaching in that grade

- Ex:
    - Input: Grade: 3 Teacher
    - Output: FAFARD,ROCIO
    - ALPERT,JONATHAN