Lab 1-2 Writeup

**Team Members:** Lauren Klein, Andrew Gough

**Initial Decisions:**

We chose to use Java for our implementation, and git in order to work remotely on the labs.

**Internal Architecture:**

We created a data class called Student in order to store information on each row of the text file. We created a data class called Teacher in order to store the teacher’s first and last name, and use that class in a HashMap. Our main internal architecture consists of two data-holders: an ArrayList of Student that was populated from the list.txt file, and a HashMap<String, List<Teacher>> that maps a classroom number to all the teachers who teach in that classroom.

Most functionality was simply achieved by iterating over this ArrayList. However, in the case of summing up the number of students in each grade and doing other enrollment calculations, we created a HashMap that mapped the grade/classroom to the current total.

**Task Log (for part 2 only):**

Lauren Klein 4/9/17 6:00pm – 8:00pm (2) Modified the scanner functions to

read in input from two files, and store the information in both the array of students and the HashMap of classroom to teacher. Made old search commands work with new storage. Implemented NR1-NR5.

Lauren Klein 4/9/17 10:00pm – 10:30 (.5) Created README for part 2, began

writeup for part 2.

Andrew Gough 4/10/17 3:00am – 4:30am (1.5) Created files tests.txt and tests.out to test for all new requirements expected behavior.

**Notes on Testing:**

Testing took place at the time specified above.

[any bugs found]

**Modifying Part 1:**

We chose to continue accessing the list of students the same way we did as part 1. However, we removed the teachers’ first and last names from the Student class, and instead moved them into a Teacher class. Then, we created a HashMap that mapped a classroom number (key) to a list of Teachers (value). This slightly changed the way the specific search execution functions accessed teacher data; we needed to access our HashMap using the student’s classroom number as a key, instead of accessing the teacher name directly from the student.

**Additions to the Query Language:**

*NR1 - C[lassroom]: <number>*

For example, if you wanted to find all students in the classroom 102, you would type “C: 102”.

*NR2 - C[lassroom]: <number> [T[eacher]]*

For example, if you wanted to find the teacher for the classroom 102, you would type “C: 102 T”.

*NR3 - G[rade]: <number> [T[eacher]*

For example, if you wanted to find all teachers who taught 3rd grade, you would type “G: 3 T”.

*NR4 - E[nrollment]*

To get the enrollment information, you would type “E” or “Enrollment”.

*NR5 - D[ata] [[G]rade] [T[eacher]] [B[us]]*

The “Data” command will always print out GPA, followed by all values specified by the flags above. If no flags are provided, all three will be printed.

For example, if you wanted to view GPA vs. teacher, you would type “D: T”. If you wanted to view GPA vs. teacher and bus route, you would type “D: T B”.