Lab Exercise Two - CIS*2430 (Fall 2021)

DUE DATES

Monday labs *- Oct 18th by 11:59 pm*
Tuesday labs *- Oct 19th by 11:59 pm*
Wednesday labs *- Oct 13th by 11:59 pm*
Thursday labs *- Oct 14th by 11:59 pm*
Friday labs *- Oct 15th by 11:59 pm*

Create a class list system for a school. The program must implement a single class, which is described in the following:

- The student class must track attributes of students, including program, year, average grade in percentage and methods. Methods include constructor(s), accessors and mutators, toString, equals, and any other needed methods.
- The program must tokenize the input of program and year using the "split" method in the String class.
- Program and year are mandatory when entering a student information; otherwise, your program should reject the input and let the user try again. The average grade is optional with the default of 0.0%. For program and year, we assume the format of "<program> <year>" although the user can enter any number of space characters between <program> and <year>. For example, "CompSci 4" and "CompSci 4" are both valid.
- Assume that all programs are one word (i.e., no white spaces such as CompSci, Psych, Math, ...)
- The program should store all Student objects in an ArrayList.
- The menus in the command loop should look like what is done in Lab Exercise One:

  (1) Enter information for a new student.
  (2) Show all student information with program, year, and average grade on separate lines
  (3) Print the average of the average grades for class and the total number of students.
  (4) Enter a specific program and show all student information for that program
  (5) End the program.

In the example below, words in italics represents user actions, while bolded words represent program output. In this example, the average grade of the given student is set to the default of 0%.

Example Usage and output:

Program displays menu.

User selects option (1)

Enter Student Program and Year:
CompSci 4

Enter Average grade, or leave blank:
User presses enter (meaning assumed 0)

Program displays menu.

Note that for option (2), output should resemble the following.:

Program: CompSci
Year: 4
Average Grade: 0.0

MARKING RUBRIC

10 Marks in total.

1 Mark for proper use of ArrayList
1 Mark for proper use of the split method.
3 Mark for proper implementation of the Student class.
2 Marks for option (1) with input checking and proper default value.
3 Marks for the command loop, along with options (2), (3), (4), and (5).

Submissions that cannot be compiled via the SOCS Linux servers at linux.socs.uoguelph.ca will be given a grade of 0.