PROGRAMMING PROJECT 8- SORTING

CS 143

Write a program that processes a data file of students' course grade data. The data arrives in random order with each line storing information about a student's last name, first name, student ID number, percentage, and letter grade. For example:

```
Smith      Kelly      438975     98.6      A
Johnson    Gus        210498     72.4      C
Reges      Stu        098736     88.2      B
Smith      Marty      346282     84.1      B
Reges      Abe        298575     78.3      C
```

Your code must be able to read an input file in exactly the format of the above. (At this is how it will be tested.)

Your program should be able to sort the data by any of the columns. Use Comparators to achieve the sort orderings. Make the data sortable by last name, student ID, and grades in ascending and descending order. For example:

```
Student data, by last name:

Johnson    Gus        210498     72.4      C
Reges      Stu        098736     88.2      B
Reges      Abe        298575     78.3      C
Smith      Kelly      438975     98.6      A
Smith      Marty      346282     84.1      B



Student data, by student ID:

Reges      Stu        098736     88.2      B
Johnson    Gus        210498     72.4      C
Reges      Abe        298575     78.3      C
Smith      Marty      346282     84.1      B
Smith      Kelly      438975     98.6      A
```

Your code must:
1) Include a Student class with each student's information stored in an object of that class.
2) Use Comparators to achieve the sort orderings
3) Implement a sorting using a method written by you. **Not** one of the built in methods of the Array or Collection static classes. (Which algorithm you use, (selection, bubble, merge, bogo, etc is up to you.)