CS3323 Homework 6 – Python Project

A text list to an HTML table

Professor Haskell teaches a class of $n \geq 7$ students on functional programming. At the end of the semester, she needs to assign a letter grade, A, B, C, D, or F, to each student in the class. She has to work with raw data in a file called *input.txt* consisting of a sequence of student records. Each record starts with an ID number, following by first name, last name, final overall score, which is an integer between 0 and 100 inclusive, a letter E (eager) or L (lazy), which measures how active a student participates in class, and *optionally*, city and/or state. One line in the file may have many records. One record may spread over many lines. She will use the following rules:

- Students are ranked by their final overall scores. Ties will be broken by eagerness.

- Students with rank from 1 to $\lfloor n/3 \rfloor$ will receive the letter grade A.

- Students with rank from $\lfloor n/3 \rfloor + 1$ to $2\lfloor n/3 \rfloor$ will receive the letter grade B.

- Students with rank in bottom $\lceil n/10 \rceil$ will receive the letter grade F.

- For other students, they get C if their eagerness is E. Otherwise they get D.

In this project, you need to write a Python program to help Professor Haskell. The output of your program should be an HTML file *output.html* that contains a table. The table should list student records, one record per row. Each record consists of last name, first name, ID and letter grade. It should be sorted according to last name, (then) first name and ID.

Note:

1. You may assume that a tie can always be broken by eagerness.

2. You may assume that each ID number is a nine digit integer, and there are no duplicate ID numbers.

3. You may assume that the file *input.txt* is in the current directory.

4. You should submit the Python source code as a text file.

5. You should only use Python built-in functions. Do not import any module.

Due date: April 22nd, 11:59pm.
Examples: If the content of *input.txt* is (note that the third line is empty)

```
112000001 Chris Carson 90 L Bowling Green Kentucky 112000000
Ben Christie 50 L Chicago IL  112000002 Bern

Cruz 80 L TX 113000000 Donald Clinton 85 E
113000001 Ted Sanders 90 E AR 113000002 Carly Fiorina 98 L
113000003 Hillary Trump 50 E NY
```

the output HTML file, when being loaded into a browser, should look like

112000001	Chris	Carson	B
112000000	Ben	Christie	F
113000000	Donald	Clinton	B
112000002	Bern	Cruz	D
113000002	Carly	Fiorina	A
113000001	Ted	Sanders	A
113000003	Hillary	Trump	C