浙江大学 实验报告

课程名称： <u>Java 应用技术</u> 指导老师： <u>翁恺</u> 学生姓名： <u>司潘俊楠</u>
实验名称： <u>Calculator</u> 实验类型： <u>编程实现</u> 学生学号： <u>3110000078</u>

一、实验目的和要求

Write a program that maintains a "database" of names and scores of students.

A student has a name consists of several words and records of scores of varies courses. Each record has a name of the course and the marks the student gets.

User can input or import information and scores for students and retrieve them later. To input a score, the user may key in the name of the student, the name of the course and the marks. Your program then try to find the student in the database and add or replace the score for the course. If the student can not be found in the database, a new student should be created and be put into the database. If the course can not be found in the records of the student, a new record for the course should be created, otherwise, the score should be replaced by the newly inputed one.

The user can provide name of a .CSV file which contains records of students information to import the data into the database. The columns in the .CSV files are:

    name, course name, score

User can input the name of a student to retrieve the scores of all the courses he/she gets, along with the total and average marks. User can input name of a course to retrieve a list of every student who has marks for this course, along with the number of the students and the average marks.

Your program is able to store the database into a file and read them back at the beginning of the execution.

The whole system is a Unix style shell system, which means you are going to develop one program for one function of your system, not a concrete one big program, no menus, no GUIs.

二、实验内容和原理

实现类 GradingDb 维护和查询 csv 数据。类 CsvItem 用于记录每条数据。
csv 格式按照微软 Excel 保存的格式处理。

三、主要仪器设备

PC   i3 / 6G RAM / Windows 8 x64
JDK   1.7

四、操作方法和实验步骤

使用 Eclipse IDE 编辑和调试。
代码附在 .java 中，.class 一同提交。
测试数据 data.csv 一同提交。
使用空行结束程序。

五、实验记录

查询：

```
Name of .csv file: data.csv
csv imported.
sA
Info of student [sA]:
----------
COURSE  MARK
cA      4
cB      6
"cC" and me     5
name    2
==========
cA
Info of course [cA]:
----------
STUDENT MARK
sA      4
sC,C    5
name    1
----------
COUNT   3
AVG     3.3333333333333335
==========
```

同时为学生姓名和课程名：

```
name
Info of student [name]:
----------
COURSE   MARK
cA       1
==========
Info of course [name]:
----------
STUDENT MARK
sA       2
----------
COUNT   1
AVG     2.0
==========
```

修改和保存（用空行确认保存）：

```
sA,CCC,10
Added student [sA]'s mark of course [CCC] to 10
sA,CCC,5
Modified student [sA]'s mark of course [CCC] to 5
sA
Info of student [sA]:
----------
COURSE   MARK
cA       4
cB       6
"cC" and me     5
name     2
CCC      5
==========

data.csv（另一个程序正在使用此文件，进程无法访问。）press Enter to retry.

[Write to data.csv done]
```

六、实验结果与分析

实验完成，且可以正常操作含有"，和空格等特殊符号的值，但尚未考虑数据库文件不存在时新建文件或返回错误信息的情况。

七、讨论、心得

本实验需要对数据格式比较麻烦的处理，需要阅读相关文档和定义。查阅文档对开发来说是非常重要的。