

JAVA 2012-2013

Second Assignment [Should be handed back by 10 May]

A) Create Class **Student** with members:

- String Name
- String Surname
- float Average
- Student(String Name, String Surname)
{ // The constructor sets the corresponding variables Name & Surname}
- void setAverage(int x, int y, int z)
{ // computes average of x,y,z and the value is assigned to Average variable}

B) Create a text file that contains students and their grades in the following format:

Name Surname Integer1 Integer2 Integer3

For example:

```
John Smith 3 4 5
Jose Abelardo 9 10 6
Angus Young 0 0 2
John Schaffer 10 3 4
```

C) Add Main function that takes as argument the name of the text file then opens and reads the data from the text file. For each student in the file it creates corresponding instance of the Student Class and adds it to an ArrayList of students. Use method setAverage() for each instance to compute the average grade.

D) Catch and handle the following exceptions:

- If the file given as parameter doesn't exist [FileNotFoundException] ask the user to provide name of the file.
- If a numeric value in the text file is not integer [NumberFormatException] print message and continue with next student/row of the file.

E) Create your own type of Exception called 'Failed' which will be thrown in the setAverage() method if the average grade of a student is lower than 5. In that case the instance of that student will be passed as message for the exception.

In main() catch 'Failed' exceptions and handle them by writing the students that have an average less than 5 in a file named "failed.txt" (append each student at the end of the file).

Use following format for the output file:

Name Surname Average

F) Add suitable **static** variables to **Student** Class so you can store:

- The Best Student (has the highest average)
[Update this variable in setAverage() method]
- The Number of Students imported
[Modify this variable in the constructor]

At the end of main() print the Number of Students imported and the information for the best student.

To test your program try these students as input file:

```
Hansi Melzer 3 4 9
Jose Abelardo 9 10 6
Kaladan Brood 2.3 7 9
Angus Young 0 0 2
Uzumaki Kojira 2 8 nine
John Schaffer 7 3 4
```

By running the program you should get output on screen:

```
Invalid format for Student Kaladan Brood
Invalid format for Student Uzumaki Kojira
4 students imported successfully
Best Student: Jose Abelardo 8,333
```

And saved on the output file "failed.txt":

```
Angus Young 0,666
John Schaffer 4,666
```

You need to send me (kobas@ceid.upatras.gr) a zipped file containing the *.java files and a short report (.doc or .pdf) describing your implementation, with comments and screenshots of running the program.