Assignment #3

Data import using exceptions (2 weeks)

Implement a class Student.

The data members:

- 1. id: a unique integer.
- 2. lastName: a sequence of Letters staring with an upper case letter followed but lower case letters
- 3. firstName: The file PopularNames.txt contains the list of the most popular names. Only names from the list could be accepted. DO NOT type the names, read them using e.g. the Scanner class.
- 4. gender: enumerative type (FEMALE, MALE).
- 5. birth year, integer value in the range from 1980 to 2004
- 6. weight: double value in the range from 3.0 to 140.0.
- 7. studyYear: integer value with values in the range from 1 to 8
- 8. achievements: a string
- 9. faculty: enumerative type with values:
 - a. ARCHITECTURE
 - b. CIVIL ENGINEERING
 - c. CHEMISTRY
 - d. ELECTRONICS
 - e. COMPUTER SCIENCE AND MANAGEMENT

The constructor of the Student class a String that all the above fields (excluding id) separated by ';'.

Use setters for all the data members, excluding id. The setters should accept a String as a parameter. In case of an error in parameter value a checked exception should be raised:

- 1. not a valid integer
- 2. value to high
- 3. value to low
- 4. not a valid enumeration
- 5. not a valid last name
- 6. not a valid first name
- 7. file not found

Create an enumerative type InputErrCode containing error codes.

The asString method of the exception should give information about:

- error code (always)
- input text string with an error (always)
- 2. Implement a class StudentGroup that contains a Vector of Students and has among others the following methods:
 - addStudent(Student st);
 - readStudents(String filename); Each line of the file contains data on one Student. If an error occurs an exception is to be thrown. The exception should provide information about the type the error itself and additionally:
 - o field number within the input line,
 - o line number within the input file,

- o the input file name.
- 3A: readFromFile(String fileName);
- 3B: void selectErrorLines(String fileName)
 - All lines with any type of an error are to be written to the standard output with their line number
- 3C: void selectProperLines (String fileName)
 - All proper lines written to the standard output
 - The format of the input data is as above.
- 3D: void selectErrorLines(String fileName, inputErrCode code)
 - All lines with that error codeare to be written to the standard output with their line number
- 3E: String firstError(String fileName)
 - As 3B but the processing stoop after encountering the first error.
- 3E: String firstError(String filename, inputErrCode code)
 - As 3D but the processing stoop after encountering the first error.

Remarks:

- 1. Try to minimize the code duplication.
- 2. Practice using the Eclipse debugger while developing the task.

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