Programming

New Austrian Coding School

week 10 - exercises

Exercise 1

Let's learn about the wonderful world of Pokemon! (Also even if you don't want to!)
Using the *pokemon.csv* file, develop the code necessary to answer two questions for each of these Stream methods:

- collect with Collectors.toList
- collect with Collectors.toSet
- collect with Collectors.grouppingBy and Collectors.counting
- collect with Collectors.grouppingBy and Collectors.toList
- sorted
- sorted with Comparator
- limit
- filter
- count
- forEach
- findFirst
- noneMatch
- anyMatch
- allMatch
- flatMap
- reduce

Hints*:*

- ➢ *That makes a total of 32 questions. You choose the questions.*
- ➢ *Be creative.*
- ➢ *Have fun!*

Exercise 2

Using the *students-performance.csv* file, develop the code to answer the following questions:

- How many times does each parent level of education appear?
- Which are the different parent level of educations sorted from most appearing to least appearing?
- How many students have parents with a master's degree and lower grades than 60 on each topic?
- Which genders and average scores do the three students with the highest average score have?
- Is there any student with a parent education level of some high school that has at least 95 in every topic?

```
Parent education level appearances:
{high school=196, master's degree=59, some college=226, bachelor's degree=118, some high
school=179, associate's degree=222}
Parent education level appearances sorted top bottom:
some college | 226
associate's degree | 222
high school | 196
some high school | 179
bachelor's degree | 118
master's degree | 59
Number of students with high parent education and lower scores than 60: 7
Genders and average scores of the top four average score students:
99 | female
99 | female
99 | female
98 | male
```

```
Is there any student with a parent education level of some high school that has at least 97 in every topic?
true
```

Exercise 3

Using the *sms.csv* file, develop the code to answer the following questions that must be asserted in a test class:

- Which is the ratio between ham and spam sorted by highest first?
- Which one is the most used word in ham?
- Which one is the most used letter in ham?
- How long is the longest spam message?

Ask two additional questions yourself and test the answers.
Reminder:

- ➢ *Make sure you assert all the answers within a test class*

```
Ham/spam ratio: ham 86% spam 13%
Most used ham word: to
Most used ham letter: e
Longest spam message: 224
```

Exercise 4

Using the *got-characters.csv* file, develop the code to answer the following questions

- How many characters appear in the books in total?
- How many characters died?
- Display the overall percentage of men and women that died in all books.
- Which book has the biggest death count with how many?
- Who died in that book?
- Which ones are the two allegiances that have the biggest dead count?
- Which percentage of deaths belong to nobility characters?
- In which book die the most amount of characters from the Stark allegiance?
- In which book die the most amount of characters from the Lannister allegiance?
- How many Starks have died?
- How many Lannisters have died?
- Is there any character who didn't die?
- Has any character ever been killed in the same chapter that it got introduced?

Exercise 5

Using the *movies.csv* file, develop the code to answer the following questions

- How many distinct movie genres are there?
- Which movie genre has the movie with the highest revenue? Display that movie as well.
- Which movie genres have the two longest movies? Display those movies as well.