

HW - Exceptions & Java 8

Coding

Write code in Java to solve following problems. Please write your own answers. You are highly encouraged to present more than one way to answer the questions. Please follow best practice when you write the code so that it would be easily readable, maintainable, and efficient. Clearly state your assumptions if you have any. You may discuss with others on the questions, but please write your own code.

1. Java 8 Stream API practices

- a. Create an Employee class with two instance fields:
 - i. a String name
 - ii. an Integer salary
- b. Create a List of employees (be sure to implement the `equals()` and `hashCode()` methods)
- c. Use Java 8 Stream and Lambda Expression to achieve the following:
 - i. Calculate the average salary of the list of employees
 - ii. Filter for employees whose salary exceeds 80000 and print out their names
 - iii. Collect a Map of employees where the key is the name of employee (String) and the value is the employee object (Employee)
 - iv. Find any Employee whose name starts with the character X
 - If such an employee exists then print out the name, if not then print "no such employee exists"
 - v. Create a String that contains the name of every single employee in the list concatenated together.

2. Create a user defined exception class called `NonIntResultException` which is generated when the result of dividing two integer values produces a result with a fractional component (i.e the result is not an integer)

- `NonIntResultException` contains:

1. A constructor with parameter that represent the two integer values
2. Generates an appropriate message, for example if the two integers are 7 and 2, the resulting exception message would be: 7 divided by 2 is not an integer