2022 Java Coding Competition

The Problem

Welcome to the 2022 State Farm Java Coding Competition. For this year's challenge, you'll be provided four data sets. You will be asked to write methods that will operate on the provided data to produce some output. You will also be provided a skeleton Java project with 10 JUnit Tests and the stubs of their corresponding methods. The four sets of data are as follows:

1. customers.csv – Representational data of customers across the US including region, state, and spoken languages, which links the customer to their agent via agent ID.
2. agents.csv – Representational data of agents across the US, including region, state, and spoken languages.
3. claims.csv – Representational data of insurance claims tied to customer insurance policies by policy ID.
4. policies.csv – Representational data of customer insurance policies tied to customers by customer ID.

Your task is to complete the Java method stubs such that they pass the given JUnit tests, using the four sets of data provided. Please read the description of each method stub carefully before attempting to complete it.

Bonus "nice to have" features

Once you've completed the above Java functions, consider implementing your version of the following extra features:

- Create a simple GUI and/or API to interact with functions and display results graphically or in another creative way of your choosing.
- Consider other important or interesting data correlations, and demonstrate these correlations either functionally, visually, or both.
- Have a better idea for bonus features than we've indicated here? Go for it!

********* **Do not change anything in the JUnit tests!** **********

First Actions:

- Import the skeleton project into your Java IDE and ensure you are using **Java 11** or later.
- We have provided a Maven dependency for JUnit 4. If you are not set up with the recommended IDE, Spring Tool Suite, you may need to add JUnit 4. (We will link instructions for other IDEs at the end of this document)
- If you identify any additional libraries you would like to use, please add them to the pom.xml file or copy the .jar files into the resources folder
- Run your JUnit tests, code, and repeat.

When you are done:

- Update the feedback.txt file and include the following information:
  - Your team – name of each individual participating.
  - How many JUnits you were able to execute successfully.
  - Document and describe the additional "nice to have" features included to help the judges properly grade your submission and explain how to properly execute new enhancements.
- Push your changes to one single branch for you and your teammate. Open a single pull request against the main State Farm Coding Competition repository before 11:59PM CDT on October 15, 2022.
  - If you make any commits after midnight without prior approval from codingcompetition@statefarm.com, your submission will be disqualified.
  - If you so choose, you may open a pull request at any time during the competition and continue to update it as long as you do not make any commits after midnight.

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Rules

- Contestants cannot seek help from individuals outside their team.
- Teams should have the necessary tools and JARs preloaded on their machines **prior** to the competition.
- If you believe this document and the JUnit tests conflict, the JUnit tests are the highest authority.
- Projects must be written in **Java 11** or later.

How you will be Graded

- 100% core requirements met, including:
    - Number of JUnits that pass using correct functionality in the program
    - Maintaining Object Oriented Programming principles
    - Code documentation
    - Code must compile and execute
- Do not complete any Bonus unless you have all the JUnit tests completed
    - Bonus credit awarded for any extra features added (up to 10%)
    - Bonus features will not be graded if base JUnit tests do not pass

In the event of a tie, we will further judge your solution based on: code cleanliness, maintainability, and adherence to object-orientated principles.

Maven Project Import Guides

- **Spring Tool Suite or Eclipse** - Lagom - Importing an existing Maven project into Eclipse (lagomframework.com)
- **Intellij** - Lagom - Importing an existing Maven Project into Intellij (lagomframework.com)
- **Netbeans** - java - Import a maven project into netbeans - Stack Overflow
- **VSCode** - Using VS Code with Java and Maven projects | Vaadin