Database Management Systems – Assignment5

The focus of this assignment is SQL programming. You will write your database application using Java and SQLite.

1   Preliminaries

1.1   Java
The Java Standard Edition (SE) Development Kit (or JDK for short) provides the ability to compile and run programs written in Java. By contrast, the Java Runtime Environment (JRE) can run programs, but not to make new ones.

You can use Oracle JDK, version 11 (you will see JDK11 as well as 1.11, which mean the same thing). You may use other versions.

1.2   IntelliJ
There are several good integrated-development environments (IDEs) for Java. It is recommended to use IDE since you will need to run your code with JUnit5.

2   Your Task
You are going to write a Java application that supports five queries on the Chinook database (via SQLite).

```
1) How many customers live in country [parameter value]?
2) List all employees (sort by employee id)
3) How many customers have been supported by employee id [parameter value]?
4) List all customers (sort by customer id)
5) List all invoices for customer #[parameter value] (sort by invoice id, each line
by invoice line id)
```

You have been provided starter code (assignment5.zip) – unzip and copy files into IntelliJ. There are two important files in this project: ChinookApp.java, which you will write your code in and submit, and ChinookAppTest.java, which has automated tests (JUnit5) to help you make progress. **Please read expected output from `ChinookAppTest.java` to understand how to formulate your SQL to pass the test.**

2.1   Testing with JUnit
To use the automated tests, right-click on the file name (ChinookAppTest.java), click "Run ChinookAppTest".

A tab will pop-up that runs five tests (one per query) and shows your progress. **To begin, you will fail all five tests**; as you make progress, you will eventually pass all five. To see the code for a failed test, double click the test name – you will see something about the input and expected output in the editor.

2.2   Windows users only
If you see weird characters (from testCustomerList() in ChinookAppTest.java), you will need to set encoding to UTF-8 from your choice of IDE.
If your directory name has a space, for example C:\users\Jane Doe, it may not work.
How to fix this? You will need to move the entire file to the place that does not have any spaces. For example, C:\users\assignment5

2.3   Submission

When you pass all the JUnit tests,
(1) comment your code (including your name and section in the placeholders at the top of the file),
(2) create and submit to Blackboard **a ZIP file** containing **ONLY the `ChinookApp.java`**.

The `JUnit` tests will be used for grading, but other factors will be evaluated:
- Submission format (ZIP + `ChinookApp.java` file).
- Comments (including your name and section – explanation if any errors).
- Indentation
- etc

These other factors aside, each of the five queries will be worth 20% (20 points each) of the grade.