PSTAT 10 Worksheet 7

Due 7/19/22

For this worksheet, we need the following packages along with a connection to the Chinook database.

```r
library(RSQLite)
library(sqldf)
library(DBI)
chinook_db <- dbConnect(SQLite(), "Chinook_Sqlite.sqlite")
dbExecute(chinook_db, "pragma foreign_keys = on") # Required for foreign-key support
```

```
## [1] 0
```

Problem 1: Terminology

For the problems below, it is okay to use Google to find explanations that make sense to you.

1. Briefly explain the purpose of primary keys and foreign keys in a relational database.
2. Briefly explain how relational databases model real world data.
3. Briefly explain the difference between SQL, SQLite, and RSQLite.

Problem 2: Foreign keys

Refer to the diagram of tables and fields in the Chinook database.

**List all of the foreign key relationships in the database.**

Write out these relationships in the following format:

TableName.ForeignKey -> TargetTableName.PrimaryKey.

For example, the following indicates that SupportRepId in the Customer table is a foreign key to the primary key of the Employee table, which is EmployeeId.

1. Customer.SupportRepId -> Employee.EmployeeId

Hint: There are 11 total relationships to list. Do not simply "guess" by looking at the diagram. Access the Chinook database schema information using the SQLite pragma command.
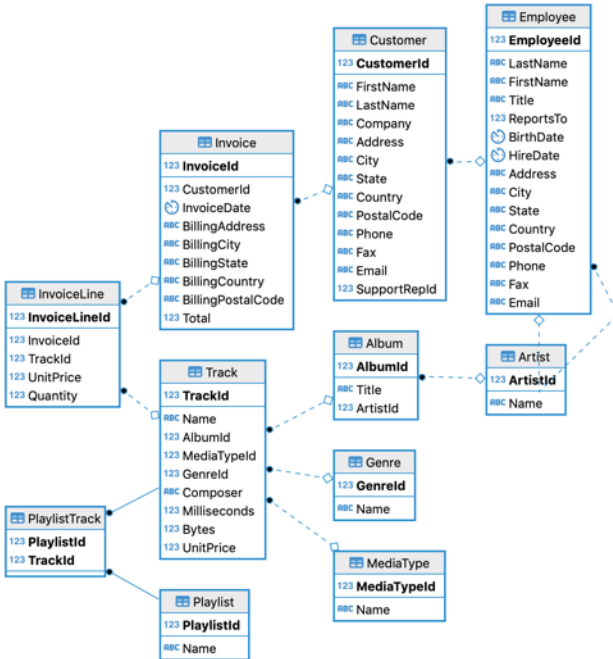
Problem 3: Customer

1. Select the CustomerId, FirstName, LastName, State, Country of all customers living in California. The result is provided.

##	CustomerId	FirstName	LastName	State	Country
## 1	16	Frank	Harris	CA	USA
## 2	19	Tim	Goyer	CA	USA
## 3	20	Dan	Miller	CA	USA

2. How many customers are from Brazil? Your query should return the following result.

##	count(*)
## 1	5