**COMP 189: Homework #6**

Assigned Feb 19, 2022

Due Mar 7, 2022

59 points total

***Instructions:*** *For each problem, show all your work (required for credit). For answers requiring written answers, while no more than five or six sentences are expected, sufficient justification must be given for any position, opinion, or perspective taken.*

***Submission Instructions:*** *submit your solutions in PDF format through MyCourses Assignments.*

## Technical Exercises

### 1. Database Schema (16 pts)

You’ve been hired to build the database for Indigo’s sales database. Write out the schema that supports the following:

* Books have a title, author, and publication year
* Credit cards have the name of the owner, credit card number, and expiration date
* Transactions have the transaction date, store where the transaction happened, the books purchased, price paid, and credit card used.

|  |
| --- |
| * Book * Book\_id: integer (Primary key) * Title: text * Author: text * PublicationYear: integer * Credit Card * OwnerName: text * CardNumber: integer * ExpirationDate: DateTime * Transaction: * TransactionDate: DateTime * Store: text * BooksPurchased: text * Price: integer * CreditCardUsed: text |

Your database schema should have five tables that apply the best practices we covered in class.

### 2. Film Database Structure (15 pts)

Write out the schema for the *film*, *actor*, *film\_actor*, *film\_category,* and *category* tables of the sakila database.

|  |
| --- |
| Film  film\_id: integer (Primary Key)  title: text  description: text  release\_year: text  language\_id: integer  length: integer  replacement\_cost: integer  rating: integer  special\_features: text  Actor:  Actor\_id: text (Primary Key)  First\_name: text  Last\_name: text  Film\_actor  Actor\_id: text (Foreign Key to Actor)  Film\_id: integer  Film\_category  Category\_id: text (Foreign Key to Category)  Film\_category: integer  Category  Category\_id: integer (Primary Key)  Name: text |

### 3. Film Queries (18 pts)

Write SQL queries that answer the following needs using the sakila database. For these queries show a partial screen capture of the results you get when running this on the database (i.e., you don’t need to show ALL transactions, just up to the first 5).

1. Fetch all fields for actors whose first name is ‘Kirsten’.
2. Fetch the name and rental rate for all films that are longer than 1.5 hours.
3. Fetch the name and description of all films that can be rented for more than 3 days.
4. Fetch all the name of all Italian-language films.
5. Fetch the name and rental price of all comedies.
6. Fetch the names of all customers who spent more than $5 in a single rental transaction.

### 4. Indigo Queries (10 pts)

Give the SQL queries for that answer the following needs using the database you designed in Question #1. No need to “show work” on this – though you’re welcome to add a sentence explaining your query which could be used for partial credit.

1. Fetch all books published in 2016.
2. Fetch all transactions associated with credit card number “1159 9936 0909 4454”
3. Fetch all transactions that happened at stores located in Quebec.