

CS430 Homework 6

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Due: Thursday, Apr. 27, 2023

Question 1 (28 points)

Given the following DB schema:

- *Movies* (mid: int, title: string, director: string, studio: string, releaseyear: int)
- *Customers* (cid: int, name: string, city: string, state: string, age: real)
- *Watch* (cid: int, mid: int, watchedon: date)

Primary keys are underlined in each relation. A movie is identified by an id (*mid*). It also has a title, director, studio, and releaseyear. A customer is identified by *cid*. It also has a name, a city, state, and age. *Customers* watch *Movies*. When a customer watches a movie, a record is inserted into *Watch* table, that will contain information about the ids as well as the date on which *cid* watched *mid* (attr. *watchedon*).

For this schema:

- Write the SQL statement to create the table *Movies*. Do not forget about the key constraints.
- Write the SQL statement to create table *Customers*. Add the constraint that a customer must be at least 18 years old. Do not forget about the key constraints.
- Write the SQL to create table *Watch*. Do not forget about the key constraints.
- Write the SQL statement to create an index on column *watchedon* of table *Watch*. Name that index *indexWatchDate*.
- Write the SQL statements to insert a record in table *Movies*, a record in table *Customers*, and a record in table *Watch*. The insert statements should be written in an order such that if executed in that order it will not cause an error.
- Write the SQL statement to find the id and title of movies that were watched between Jan 1st 2022 and July 31st 2022 (including these dates). The result should contain no duplicates.
- Write the SQL statement to extract the id and name of customers and the id, title and director of movies they watched, as well as the date on which they watched the movie (*watchedon*). Sort the result by *watchedon* in descending order.

Question 2 (72 points)

Using the schema from Question 1, write a Java file that does the following:

- Reads from the input: an Oracle username, Oracle password, Oracle hostname, Oracle DB name.
- Connects to the Oracle DB.
- Runs a query against the database to extract all information about *Customers*. It prints the extracted information to screen.

- Runs a query against the database to extract the id and name of *Customers* and the id and title of *Movies* they watched as well as the date they watched the movies (`watchedon` attr.). It prints the extracted information to screen.
- Runs a query against the database to find out how many movies are in the DB. It prints the result to screen.
- Runs a query against the Oracle DB to extract the metadata for table *Customers*. It prints the result to screen.
- Prompts the username to enter a year. It returns the id, title, and director of the movies that were released in that year.
- Closes the DB connection. Prints a message and exits the program.