95 – 703: Database Management

SQL Assignment #2 (hardcopy due on April 10, in class before the lecture starts)

*Turn in a well formatted and readable printout of your SQL statements <u>as they were executed in the SQL*Plus</u> environment and the results of running each statement. Set the LINESIZE and PAGESIZE values optimally to ensure that there are no wrapping lines or repeated column headers in the results (refer to the "**Formatting SQL Output**" document available on the class website). Identify each answer clearly. Each question should be answered by a <u>single SQL statement</u> (not a sequence of statements) unless requested otherwise.*

In any case where the output includes ID and a name (or first and last name, and such like), concatenate these values into a single expression (single column in the results). Use only the SQL concepts covered in class so far (by April 3).

Execute the script titled '**SQL2_script.txt**'provided on the blackboard website to create the database needed for this assignment. Then, answer the questions as defined below.

Part I. Database Maintenance

1. Each film released before year 2015 is no longer considered a new film. Update only the records that are to be considered as old films.

2. The *catalog number* for films is based on a few digits and a letter. The letter indicates the format of the films being ordered. It is either 'W' (for wide screen films), 'F' (for full screen films), or 'M' (for multiple format films). Unfortunately, in few cases the values are inconsistent with the rule. Your task is to make sure that the *catalog number* is correctly synchronized with the *format* column. Run appropriate update statements to correct the inconsistencies. *[Note: all values in the <u>Format</u> column are correct. Values of the <u>Catalog</u> <u>number</u> columns are coded incorrectly in some cases]*

3. After you accomplish the task of question 2, create an appropriate constraint that will guarantee that current as well as the future values of *catalog_num* are synchronized with the values of *format*.

4. Create two additional appropriate check constraints (but not the Not Null constraints) of your choice. Provide a brief description why those constraints are of value for the DVD Rental Company. Explore the given script to avoid creating constrains that are already present in the database.

Part II. Queries (based on the results of Part I)

1. For science fiction films (or science fiction TV series) in inventory list the title, year of release, number of copies of the title we have in inventory, and the number of times they were rented. Sort the results from the most to fewest rentals.

2. For each sales rep provide the number of rentals he/she processed and the number of films rented by the customers they helped. Provide the ID and name of the sales rep. Order the results by the number of films rented from highest to lowest.

3. List customers (their ids and names) and their rental information (rental number and rental date) for the past 30 days, for each movie/film rented from store number 10. List the catalog number, title, for how long the movie was rented (if the movie is not returned use the current date), and an indicator whether the movie is overdue, was late, or returned on time (by the due date).

4. List details of the rentals from second half of March 2019. It should have the id and name of the customer/member, date of the rental, film id, the number of discs of the film, due date, return date, number of days out (use "NA" for films that were not returned yet), and the total cost of the rental.

5. For each store provide the number of different films rented this year, the number of employees at the store, and the average number of different films rented per sales representative. Also, provide the grand total (the same calculations for stores altogether).

6. How many films are currently rented (not returned yet) in each of the stores? Provide the number of films rented and the percent of the store's inventory of films that are currently rented. Include store ID and name. Format the percentage points with '%' sign.

7. For each film genre, list the number of different films we have in the genre and the number of times films were rented in the genre. Include all genres that are represented in the film table. Add grand total at the end.