CPRG 307
Lab 1: Database Objects

Student: _____

Mark: ___ / 2 (*one mark for each deliverable*)

Lab Objectives

Here is what you will be able to do when you complete each objective:

- Review basic SQL commands.
- Use the appropriate commands to create and modify views.
- Use the appropriate commands to create and modify sequences.
- Use the sequences in DML commands.
- Explain why synonyms are useful in the management of a development environment.

Lab Instructions

To complete this lab, follow the steps below. This lab is due on the day and time indicated by your instructor.

Steps:

☐ 1. ATTEND the lecture on the material that will be performed in the lab exercise.

☐ 2. COMPLETE the out-of-class learning activities as indicated by your instructor.

☐ 3. COMPLETE the prelab tasks identified in the lab document before the lab class, making sure to submit solutions to the appropriate forum and thread in the D2L discussion board.

☐ 4. COMPLETE the tasks identified in the lab document, making sure to submit solutions to the appropriate forum and thread in the D2L discussion board.

☐ 5. COMPLETE the post lab tasks identified in the lab document after the lab has been completed.

Deliverables

☐ 1. SUBMIT the complete and tested prelab code by the date and time indicated by your instructor to the appropriate forum and topic in the D2L discussion board.

☐ 2. SUBMIT the complete and tested lab code by the date and time indicated by your instructor to the appropriate forum and topic in the D2L discussion board.

For this lab, all code should be placed in the body of the discussion board posts – <u>not</u> as an attachment.

Unless stated otherwise, code from <u>all</u> tasks should be included in discussion board posts.

Prelab Tasks

☐ 1. EXECUTE script *Create CPRG 307 Users.sql* in the zip file located in Module 1 in the content area of D2L.

- ***This step does not need to be presented in your discussion board post.***
- You will need to be logged into the database as the user SYSTEM.
- This script will create two new users with specific privileges you will be using in the labs for this course.
  - Do not worry about understanding the code in this script. You will learn about user creation and privileges next term.
- If you receive any errors when executing this script, call your instructor over.
- If you ever need to remove these users, execute the second script in the zip file, *Drop CPRG 307 Users.sql*.

☐ 2. CREATE the *More Movies* database tables in the database located on your virtual machine.

- ***This step does not need to be presented in your discussion board post.***
- The *More Movies* database tables are from the course textbook.
- Go to D2L in the Course Resource area under Content and download the zip file for *More Movies*.
- Extract the zip file (there will be one file extracted).
- Log into the database via SQL*Plus as user: *CPRG307*
  - The password is: *password*
  - For this prelab, it is recommended to use SQL*Plus to make sure you remember how to execute a file rather than using SQL Developer. In the database course next semester, you must use SQL*Plus and you must execute scripts, so this will be a good refresher. You are free to use SQL Developer in this course if you wish.
- Execute the extracted file to create and populate the *More Movies* database tables.
  - Execute, do not copy and paste.

☐ 3. DISPLAY the structure of the MM_MEMBER table.

☐ 4. ADD yourself as a member.

- Only populate the first three columns.

☐ 5. MODIFY your membership by adding your credit card number (make one up, please **do not** use your real-life credit card number).

- Note there is a check constraint on this column.

☐ 6. REMOVE your membership.

☐ 7. SAVE your data changes.

☐ 8. DISPLAY the title of each movie, the rental id, and the last names of all members who have rented those movies. No other information should be shown.

- You will need to use three tables for this query: MM_MEMBER, MM_MOVIE, and MM_RENTAL
- Restriction: Solve using JOIN…ON as your join method.

☐ 9. DISPLAY the title of each movie, the rental id, and the last names of all members who have rented those movies. No other information should be shown.

- You will need to use three tables for this query: MM_MEMBER, MM_MOVIE, and MM_RENTAL
- Restriction: Solve using the tradition join method which joins in the WHERE clause.

☐ 10. CREATE a new table called MY_TABLE which has three columns (MY_NUMBER, MY_DATE, and MY_STRING) which have data types NUMBER, DATE, and VARCHAR2(5), respectively.

Lab Tasks

☐ 1. LOGIN as user CPRG307 and complete the rest of the lab. The password is *password*

- ***This step does not need to be presented in your discussion board post.***
- Note we are still using the *More Movies* database tables.

☐ 2. CREATE a new sequence called **seq_movie_id**. This sequence should start at 20 and increment by 5.

☐ 3. DISPLAY the sequence information from the **data dictionary**. Your output should only show this one sequence.

☐ 4. DISPLAY the next sequence number on the screen through a query.

☐ 5. ADD your favorite movie to the MM_MOVIE table using the sequence created in *Task 2* for the movie_id. You can create values for the other columns (all columns must be given a value).

- Note that MM_MOVIE has a foreign key which means any value placed in this column must already exist as primary key value in the table being referenced.
- Note that MM_MOVIE has a check constraint.

☐ 6. CREATE a view using the query from either *Prelab Task 7* or *Prelab Task 8*. Call this view **VW_MOVIE_RENTAL**.

☐ 7. DISPLAY the data accessed by this new view through a query.

☐ 8. CREATE a public synonym for the MM_MOVIE_TYPE table called **m_type**. Use the *CPRG307* account to create the public synonym.

☐ 9. TEST this new synonym. Log in as user *CPRG307A* (password is *password*). And do a describe on m_type.

- ***This step does not need to be presented in your discussion board post.***

Post Lab Tasks

☐ 1. COMPARE your posted solutions to those posted by your instructor. If you are unsure why there are differences between the solutions, make sure to talk to your instructor.