Lab 05 – SQL (DDL)

# **Objectives:**

The purpose of this lab is to introduce you to the DDL set of statements in SQL. By writing SQL to create tables, constraints, and views, you will have the tools needed to implement database designs that you will create later in the course. By finishing this lab, the student will be able to:

* create, modify, and drop tables based on design specifications provided
* enforce constraints on tables to ensure data integrity and consistency
* create a table using the structure and data from an existing table
* Import data into a table from other tables

# **Submission:**

***Your submission will be a single text-based .sql file with the solutions provided. No other file format would be accepted.***

DBS211\_L05\_FirstName\_LastName.sql

Your submission needs to include a comment header block and be commented to include the questions and the solutions. Make sure every SQL statement terminates with a semicolon.

Example Submission

|  |
| --- |
| -- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  -- Name: Your Name  -- ID: #########  -- Date: The current date  -- Purpose: Lab 05 DBS211  -- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  -- Q1 SOLUTION --  SELECT \* FROM TABLE;  -- Q2 SOLUTION –  SELECT \* FROM TABLE; |

Locate, select, and submit the file to the Lab 03 link.

## **Setup**

# Create a new worksheet in SQL developer and add an appropriate comment header that includes your name, student id, the date and the purpose of the file (i.e., DBS211 – Lab 05).

## **Style Guide**

Your SQL should be written using the standard coding style:

* all keywords are to be in upper case
* all user-defined names are to be in lower case (example: table and field names)
* there should be a carriage return before each major part of the SQL statement

See the following sample:

**CREATE TABLE table\_name(**

**column1 datatype NULL,**

**column2 datatype NOT NULL)**;

**Marking Scheme**

|  |  |
| --- | --- |
| **Question** | **Points** |
| **1 a.** | 0.5 |
| **1 b.** | 0.5 |
| **1 c.** | 0.5 |
| **1 d.** | 0.5 |
| **2** | 0.5 |
| **3** | 0.5 |
| **4 a.** | 0.5 |
| **4 b.** | 0.5 |

Total: 4

**Grade Policy**

* Submissions with errors do not get any marks. (They get zero.)
  + Execute your *.sql* file using the “Run Script” button in SQL Developer to make sure there are no errors in your file.
* You do not receive marks for the missing or incomplete solutions.
* The name of the tables you will create in this lab have to match exactly with the names given in this lab document.

# **Tasks:**

1. Create the following tables and their given constraints:
2. **L5\_MOVIES**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Column  Name | Column  DataType | PK | Not  Null | Unique | FK | Default  Value | Validation |
| m\_id | NUMBER | ✓ |  |  |  |  |  |
| title | VARCHAR2(35) |  | ✓ | ✓ |  |  |  |
| release\_year | NUMBER |  | ✓ |  |  |  |  |
| director\_id | NUMBER |  | ✓ |  |  |  |  |
| score | NUMBER(3,2) |  |  |  |  | 2.5 | < 5 and > 0 |

1. **L5\_ACTORS**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Column  Name | Column  DataType | PK | Not  Null | Unique | FK | Default  Value | Validation |
| a\_id | NUMBER | ✓ |  |  |  |  |  |
| first\_name | VARCHAR2(20) |  | ✓ |  |  |  |  |
| last\_name | VARCHAR2(30) |  | ✓ |  |  |  |  |

1. **L5\_CASTINGS**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Column  Name | Column  DataType | PK | Not  Null | Unique | FK | Default  Value | Validation |
| movie\_id | NUMBER | ✓ |  |  | ✓  (L5\_MOVIES) |  |  |
| actor\_id | NUMBER | ✓ |  |  | ✓  (L5\_ACTORS) |  |  |

1. **L5\_DIRECTORS**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Column  Name | Column  DataType | PK | Not  Null | Unique | FK | Default  Value | Validation |
| director\_id | NUMBER | ✓ |  |  |  |  |  |
| first\_name | VARCHAR2(20) |  | ✓ |  |  |  |  |
| last\_name | VARCHAR2(30) |  | ✓ |  |  |  |  |

1. Modify the ***L5\_MOVIES*** table to create a foreign key constraint that refers to the table ***L5\_DIRECTORS***.
2. Double-click to open the table ***L5\_DIRECTORS*** and insert a few rows of data to it using the insert button in the toolbar above. Now write an SQL statement to delete all the data you inserted at once. [**Hint:** You may go back and modify any answer for a previous question if you feel the need the do so in order to facilitate some functionality in your current answer.]
3. a. Write SQL statements to remove all of the above tables.   
   b. Is the order of tables important when removing? Why (write the answer as code comments)?