Lab 05- DDL

Objective:

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,
- inserting new data into tables, update data in tables, and delete data from tables while considering referential integrity,
- 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 WORD file with the solutions provided.

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

Tasks:

Add
`SET AUTOCOMMIT ON;`
under the comment header and execute it

Consider the following table specifications:

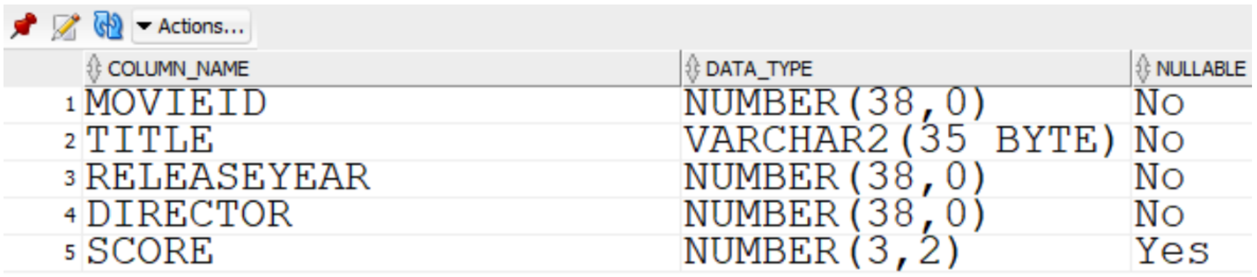
Part A (DDL) :

1. Create all the following tables and their given constraints:

`LAB5_MOVIES` `(movieid:int, title:varchar(35), releaseYear:int, director:int,score:decimal(3,2))`

Column Name	Column DataType	PK	Not Null	Unique	FK	Default Value	Validation
movieid	Int	✓					
title	varchar(35)		✓				
releaseYear	Int		✓				
director	Int		✓				
score	decimal(3,2)						< 10 and > 3

```
 CREATE TABLE LAB5_MOVIES (

movieid INT PRIMARY KEY,

title VARCHAR(35) NOT NULL,

releaseYear INT NOT NULL,

director INT NOT NULL,

score DECIMAL(3,2),

CONSTRAINT score CHECK  (score BETWEEN 3 AND 10)

);
```

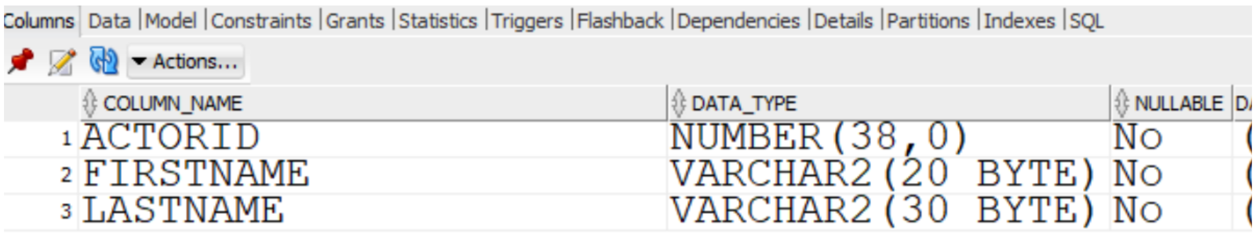


	COLUMN_NAME	DATA_TYPE	NULLABLE
1	MOVIEID	NUMBER(38,0)	No
2	TITLE	VARCHAR2(35 BYTE)	No
3	RELEASEYEAR	NUMBER(38,0)	No
4	DIRECTOR	NUMBER(38,0)	No
5	SCORE	NUMBER(3,2)	Yes

LAB5_ACTORS (actorid:int, firstname:varchar(20), lastname:varchar(30))

Column Name	Column DataType	PK	Not Null	Unique	FK	Default Value	Validation
actorid	Int	✓					
firstName	varchar(20)		✓				
lastName	Varchar(30)		✓				

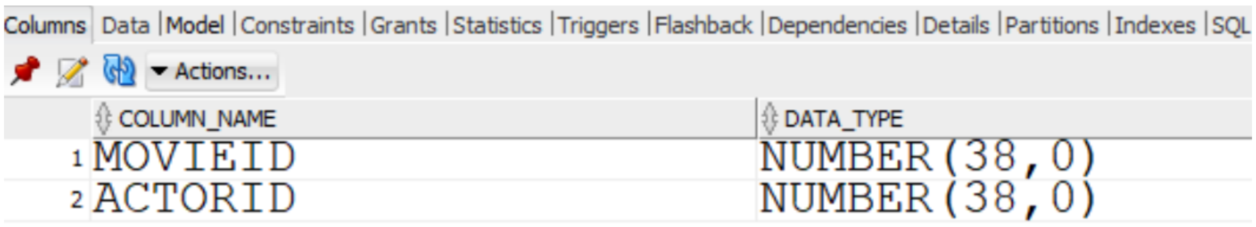
```
CREATE TABLE Lab5_ACTORS (

actorid INT PRIMARY KEY,

firstName VARCHAR(20) NOT NULL,

lastName VARCHAR(30) NOT NULL

);
```



	COLUMN_NAME	DATA_TYPE	NULLABLE	D
1	ACTORID	NUMBER(38,0)	No	(
2	FIRSTNAME	VARCHAR2(20 BYTE)	No	(
3	LASTNAME	VARCHAR2(30 BYTE)	No	(

LAB5_CASTINGS (movieid:int, actorid:int)

Column Name	Column DataType	PK	Not Null	Unique	FK	Default Value	Validation
movieid	Int	✓			✓ (movies)		
actorid	int	✓			✓ (actors)		

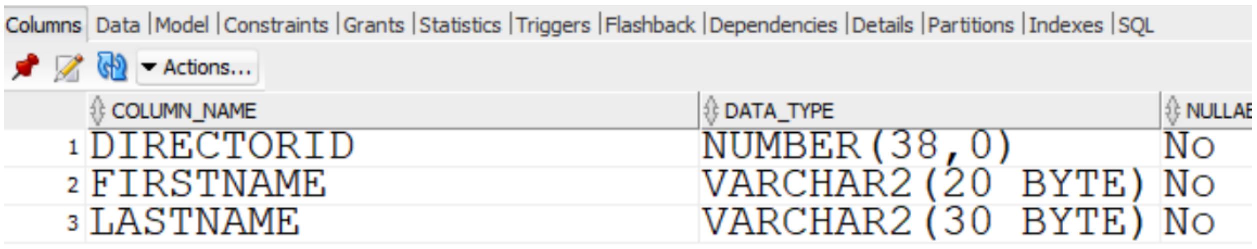

Columns | Data | Model | Constraints | Grants | Statistics | Triggers | Flashback | Dependencies | Details | Partitions | Indexes | SQL
Actions...

```
  COLUMN_NAME   DATA_TYPE
1 MOVIEID       NUMBER(38,0)
2 ACTORID       NUMBER(38,0)
```

LAB5_DIRECTORS(directorid:int, firstname:varchar(20), lastname:varchar(30))

Column Name	Column DataType	PK	Not Null	Unique	FK	Default Value	Validation
directorid	Int	✓					
firstname	varchar(20)		✓				
lastname	varchar(30)		✓				

```
CREATE TABLE LAB5_DIRECTORS (
directorid INT PRIMARY KEY,
firstName VARCHAR(20) NOT NULL,
lastName VARCHAR(30) NOT NULL
);
```


Columns | Data | Model | Constraints | Grants | Statistics | Triggers | Flashback | Dependencies | Details | Partitions | Indexes | SQL
Actions...

```
  COLUMN_NAME   DATA_TYPE           NULLAE
1 DIRECTORID    NUMBER(38,0)        No
2 FIRSTNAME     VARCHAR2(20 BYTE)   No
3 LASTNAME      VARCHAR2(30 BYTE)   No
```

2. Modify the ***movies*** table to create a foreign key constraint that refers to table ***directors***.

```
ALTER TABLE LAB5_MOVIES
ADD CONSTRAINT movies_director_fk FOREIGN KEY (director) REFERENCES
LAB5_DIRECTORS(directorid);
```

Table LAB5_MOVIES altered.

3. Modify the ***movies*** table to create a new constraint so the uniqueness of the movie title is guaranteed.
   ALTER TABLE LAB5_MOVIES
   ADD CONSTRAINT u_title UNIQUE (title);

4. Write insert statements to add the following data to table ***directors*** and ***movies***.

Director

directorid	First name	Last name
1010	Rob	Minkoff
1020	Bill	Condon
1050	Josh	Cooley
2010	Brad	Bird
3020	Lake	Bell

```
INSERT ALL
INTO LAB5_DIRECTORS VALUES(1010, 'Rob', 'Minkoff')
INTO LAB5_DIRECTORS VALUES(1020, 'Bill', 'Condon')
INTO LAB5_DIRECTORS VALUES(1050, 'Josh', 'Cooley')
INTO LAB5_DIRECTORS VALUES(2010, 'Brad', 'Bird')
INTO LAB5_DIRECTORS VALUES(3020, 'Lake', 'Bell')
SELECT * FROM DUAL;
COMMIT
```

Movies

Id	title	year	director	score
100	The Lion King	2019	3020	3.50
200	Beauty and the Beast	2017	1050	4.20
300	Toy Story 4	2019	1020	4.50
400	Mission Impossible	2018	2010	5.00
500	The Secret Life of Pets	2016	1010	3.90

```
INSERT INTO LAB5_MOVIES (movieid, title, releaseyear, director, score)
VALUES (100, 'The Lion King', 2019, 3020, 3.50);
INSERT INTO LAB5_MOVIES (movieid, title, releaseyear, director, score)
VALUES (200, 'Beauty and the Beast', 2017, 1050, 4.20);
INSERT INTO LAB5_MOVIES (movieid, title, releaseyear, director, score)
VALUES (300, 'Toy Story 4', 2019, 1020, 4.50);
INSERT INTO LAB5_MOVIES (movieid, title, releaseyear, director, score)
VALUES (400, 'Mission Impossible', 2018, 3020, 5.00);
INSERT INTO LAB5_MOVIES (movieid, title, releaseyear, director, score)
VALUES (500, 'The Secret Life of Pets', 2016, 1010, 3.90);

commit;
```

5. Write SQL statements to remove all above tables.
   Is the order of tables important when removing? Why?

```
DROP TABLE L5_CASTINGS;
DROP TABLE L5_MOVIES;
DROP TABLE L5_ACTORS;
DROP TABLE L5_DIRECTORS;
Table L5_CASTINGS dropped.
Table L5_MOVIES dropped.
Table L5_ACTORS dropped.
```

Table L5_DIRECTORS dropped.

Child tables must be dropped first before dropping parent table. You can't drop a parent table if you have a child table with a foreign key constraint in place, unless you specify the CASCADE CONSTRAINTS clause: DROP TABLE P CASCADE CONSTRAINTS; This command drops the FK constraint too. Deleting a table will necessarily drop all constraints related to this table.

DROP TABLE L5_MOVIES CASCADE CONSTRAINTS;
DROP TABLE L5_ACTORS CASCADE CONSTRAINTS;

DROP TABLE L5_CASTINGS CASCADE CONSTRAINTS;

DROP TABLE L5_DIRECTORS CASCADE CONSTRAINTS;
Table L5_CASTINGS dropped.
Table L5_MOVIES dropped.
Table L5_ACTORS dropped.
Table L5_DIRECTORS dropped.

Part B (More DML):

6. Create a new empty table (that means the table will not have any data after creating) ***employeecopy*** the same as table ***retailemployees.*** Use a single statement to create the table and insert the data at the same time (Hint use a WHERE clause that is false like 1=2)
CREATE TABLE employeecopy AS SELECT * FROM employees where 1=2;

Table EMPLOYEECOPY created.

7. Modify table ***employeecopy*** and add a new column ***username*** to this table. The value of this column is not required and does not have to be unique.

ALTER TABLE employeeCOPY

ADD username VARCHAR(10);

Table EMPLOYEESCOPY altered.

8. Re-insert all data from the ***retailemployees.*** table into your new table ***employeecopy*** using a single statement.
INSERT INTO employeecopy (EMPLOYEENUMBER , LASTNAME ,FIRSTNAME ,EXTENSION , EMAIL ,OFFICECODE ,REPORTSTO ,JOBTITLE)
SELECT EMPLOYEENUMBER ,LASTNAME ,FIRSTNAME ,EXTENSION ,EMAIL , OFFICECODE ,REPORTSTO ,JOBTITLE FROM retailemployees;
23 rows inserted.

9. In table ***employeecopy***, generate the email address for column ***username*** for each student by concatenating the employeeid and the string "@seneca.ca". For instance, the username of employee 123 will be "123@seneca.ca'.
SELECT employeenumber || '@seneca.ca' AS username

FROM employeecopy;

10. Delete all the employeecopy data and display the data in the table. Does employeecopy exist? If not how can you delete table ***employeecopy***.
    DELETE FROM employeecopy;
    Yes employeecopy structure still exist even when the data is deleted.

    DROP TABLE employeecopy;