

29/8/25

### EXERCISE 12

#### Intro to Constraints; NOT NULL and UNIQUE Constraints

Global Fast Foods has been very successful this past year and has opened several new stores. They need to add a table to their database to store information about each of their store's locations. The owners want to make sure that all entries have an identification number, date opened, address, and city and that no other entry in the table can have the same email address. Based on this information, answer the following questions about the global\_locations table. Use the table for your answers.

| Global Fast Foods global_locations Table |      |        |           |       |          |         |
|------------------------------------------|------|--------|-----------|-------|----------|---------|
| NAME                                     | TYPE | LENGTH | PRECISION | SCALE | NULLABLE | DEFAULT |
| id                                       |      |        |           |       |          |         |
| name                                     |      |        |           |       |          |         |
| date_opened                              |      |        |           |       |          |         |
| address                                  |      |        |           |       |          |         |
| city                                     |      |        |           |       |          |         |
| zip/postal code                          |      |        |           |       |          |         |
| phone                                    |      |        |           |       |          |         |
| email                                    |      |        |           |       |          |         |
| manager_id                               |      |        |           |       |          |         |
| Emergency contact                        |      |        |           |       |          |         |

1. What is a "constraint" as it relates to data integrity?  
*A constraint is a rule applied to table columns to ensure the accuracy, validity and consistency of a data in database.*
2. What are the limitations of constraints that may be applied at the column level and at the table level?  
*Column level directly Applied after a column  
Table level applied after all columns.*
3. Why is it important to give meaningful names to constraints?
  - Easily identify the purpose of each constraint
  - Make database maintenance and update clearer
4. Based on the information provided by the owners, choose a datatype for each column. Indicate the length, precision, and scale for each NUMBER datatype.  
*location\_id , street\_address  
NUMBER  
5  
4,0  
0,0*

5. Use "(nullable)" to indicate those columns that can have null values.  
*Street\_address .*

6. Write the CREATE TABLE statement for the Global Fast Foods locations table to define the constraints at the column level.

```
CREATE TABLE GFFL C
```

```
int INT PRIMARY KEY,  
loc_name VARCHAR(20) NOT NULL,  
address VARCHAR(30),  
city VARCHAR(20);
```

7. Execute the CREATE TABLE statement in Oracle Application Express.

```
zip_postal VARCHAR(20)  
phone VARCHAR(15)  
manager_id INT NOT NULL,  
open_date DATE
```

8. Execute a DESCRIBE command to view the Table Summary information.

```
DESC GFFL ;
```

9. Rewrite the CREATE TABLE statement for the Global Fast Foods locations table to define the UNIQUE constraints at the table level. Do not execute this statement.

| NAME       | TYPE     | LENGTH | PRECISION | SCALE | NULLABLE | DEFAULT |
|------------|----------|--------|-----------|-------|----------|---------|
| id         | number   | 4      |           |       |          |         |
| loc_name   | varchar2 | 20     |           |       | X        |         |
|            | date     |        |           |       |          |         |
| address    | varchar2 | 30     |           |       |          |         |
| city       | varchar2 | 20     |           |       |          |         |
| zip_postal | varchar2 | 20     |           |       | X        |         |
| phone      | varchar2 | 15     |           |       | X        |         |
| email      | varchar2 | 80     |           |       | X        |         |
| manager_id | number   | 4      |           |       | X        |         |
| contact    | varchar2 | 40     |           |       |          |         |

PRIMARY KEY, FOREIGN KEY, and CHECK Constraints

1. What is the purpose of a
  - PRIMARY KEY
  - FOREIGN KEY
  - CHECK CONSTRAINT

2. Using the column information for the animals table below, name constraints where applicable at the table level, otherwise name them at the column level. Define the primary key (animal\_id). The license\_tag\_number must be unique. The admit\_date and vaccination\_date columns cannot contain null values.

```
animal_id NUMBER(6)
name VARCHAR2(25)
license_tag_number NUMBER(10)
admit_date DATE
adoption_id NUMBER(5),
vaccination_date DATE
```

3. Create the animals table. Write the syntax you will use to create the table.

CREATE TABLE animals

4. Enter one row into the table. Execute a SELECT \* statement to verify your input. Refer to the graphic below for input.

| ANIMAL_ID | NAME | LICENSE_TAG_NUMBER | ADMIT_DATE  | ADOPTION_ID | VACCINATION_DATE |
|-----------|------|--------------------|-------------|-------------|------------------|
| 101       | Spot | 35540              | 10-Oct-2004 | 205         | 12-Oct-2004      |

*INSERT INTO animals (animal\_id, name, license\_tag\_number, admit\_date, adoption\_id, vaccination\_date)  
VALUES (101, 'Spot', 35540, DATE '2004-10-10', 205,  
DATE '2004-10-12');*

5. Write the syntax to create a foreign key (adoption\_id) in the animals table that has a corresponding primary-key reference in the adoptions table. Show both the column-level and table-level syntax. Note that because you have not actually created an adoptions table, no adoption\_id primary key exists, so the foreign key cannot be added to the animals table.

CREATE TABLE animals (  
adoption\_id NUMBER(5) REFERENCES (adoption\_id),  
);

(131)

6. What is the effect of setting the foreign key in the ANIMAL table as:
- ON DELETE CASCADE
  - ON DELETE SET NULL

ON DELETE CASCADE  $\Rightarrow$  automatically deleted  
 ON DELETE SET NULL  $\Rightarrow$  set to NULL

7. What are the restrictions on defining a CHECK constraint?

- \* Cannot reference other views.
- \* Cannot reference other tables
- \* Cannot use Non-deterministic

| Evaluation Procedure | Marks awarded |
|----------------------|---------------|
| Query(5)             | 5             |
| Execution (5)        | 5             |
| Viva(5)              | 5             |
| Total (15)           | 15            |
| Faculty Signature    | Ram           |