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 tables & Columns to enforce data integrity ensuring valid & Constraint data.

2. What are the limitations of constraints that may be applied at the column level and at the table level? Column level can only refer to current Colum. Table level can reference multiple Columns needed for Composite Constraint

3. Why is it important to give meaningful names to constraints?
Help with readability, maintainance and easier and debugging when Constraint violations occur.

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.
Eg: location_id, numberS(S); location_name varchar(50); city varchar2(30); Coastal_code(10)(nullable); latitude_no(9,6); longitude_no(9,6) [both are nullable)

5. Use "(nullable)" to indicate those columns that can have null values.
Coastal_code, latitude, longitude are marked as nullable.

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

(create table locations (location_id number (5) primary key, location_name varchar2 (50) not null, city varchar(30) not null postal_code varchar(10), latitude number (9,6), longitude number (9,6));

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

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

desc locations;

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			X	

(create table global_locations(id_no(4) Constraint PK_locations primary key, loc_name varchar2(20), date_opened date Constraint date_open not null, address varchar2(30) Constraint address not null, city varchar2(20) Constraint city notnull, zip_postal varchar2(20), phone varchar2(20), email varchar2(80), manager_id number, contact varchar2(40) Constraint UQ_email UNIQUE));

PRIMARY KEY, FOREIGN KEY, and CHECK Constraints

1. What is the purpose of a
- PRIMARY KEY uniquely identifies each record in a table.
- FOREIGN KEY link 2 tables together
- CHECK CONSTRAINT

It is used to limit the range of values that can be stored in a column.

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

```
Create table animals(
    animal_id number(6) Constraint
pk_animal primary key,
    name varchar2(25),
    licence_tag_number number(10)
Constraint uq_licence UNIQUE,
    admit_date DATE CONSTRINT
nn_admit_date NOT NULL,
    adoption_id number(5),
    Vaccination_date DATE Constraint
nn_vaccination_date NOT NULL);
```

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

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 values(101, 'Spot', 35540, '10-OCT-2004',
205, '12-OCT-2004');
Select * from animals;
```

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(~~

```
Alter table Animals ADD Constraint fk_adoption
references foreign key (adoption_id);
```

6. What is the effect of setting the foreign key in the ANIMAL table as:

a. ON DELETE CASCADE
b. ON DELETE SET NULL

It will set up triggers on the table Animal.

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

CHECK constraint won't give the independence of adding the data, since it sets up constraints.

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