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	NUMBER	4			NOT NULL	
name	VARCHAR	20			not null	
date_opened	DATE				not null	
address	VARCHAR2	30			not null	
city	VARCHAR2	20			not null	
zip/postal code	VARCHAR2	20			nullable	
phone	VARCHAR2	15			nullable	
email	VARCHAR2	80			NOT NULL	
manager_id	NUMBER	4			nullable	
Emergency contact	VARCHAR 2	40			nullable.	

1. What is a "constraint" as it relates to data integrity?

A constraint is a rule applied to a data base column to enforce data integrity. It ensures that the data entered into a tables meet specific conditions

2. What are the limitations of constraints that may be applied at the column level and at the table level? column level constraints can only be applied to single column constraints must be logical and must not contradict each other

3. Why is it important to give meaningful names to constraints?

Identify which constraints caused an error. Maintain or modify the data base table. Debug & comment database.

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.

zip-postal, phone, manager_id, contact are usable

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

zip-postal code

phone

manager_id

Emergency contact.

6. Write the CREATE TABLE statement for the Global Fast Foods locations table to define the constraints at the column level. CREATE table global_locations (
id number(4) constraint PK_global_locations_id PRIMARY_key
loc_name varchar(20) NOT NULL,
date_opened DATE NOT NULL, city VARCHAR2 (20) NOT NULL,
address varchar2 (30) NOT NULL,);

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

CREATE TABLE global_locations (. . .);

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

DESC global_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 number (4) NOT null
loc_name varchar (20) NOTNULL
date_opened date notnull
address varchar2 (20) not null
city varchar2 (20) NOT null
manager_id number (4)
contact varchar2 (40)
constaint PK_global_locations_id
primary key (id)
email_unique (email)
) ;

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 Established a relationships between tables
- CHECK CONSTRAINT Ensures that values in a column must meet specific conditions

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

- animal_id → primary key
- license_tag_number → unique
- admit_date & vaccination_date → NOT NULL

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

```
CREATE TABLE animals( animal_id number(6) constraint
PK_animal PRIMARY KEY ) name varchar(25)
license_tag_number number(10)
```

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, 35440, TO DATE(10-Oct-2004);(DD-MM-YYYY),
205 TO DATE (12-Oct-2004), 'DD-MON-YYYY');
```

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.

```
ALTER TABLE animals
ADD constraint fk_adoption
REFERENCES adoptions (adoption_id);
```

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

a. ON DELETE CASCADE a) When a record in a present table is deleted
b. ON DELETE SET NULL all related data in child table are automatically deleted.

b) when a record in parent table is deleted, the foreign key value in child table is set to NULL instead of deleting child record

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

- The condition must be boolean expression
- cannot include subqueries
- cannot reference other table columns
- cannot call non-determinent functions

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