

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 that restricts the values in table columns to ensure the accuracy and reliability (integrity) of the 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 be applied to single column
 Table level: Must be used when a constraint applies to two or more columns (composite keys)

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

Meaningful names make it easier to identify and troubleshoot errors when a constraint is violated.

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.

✓ Id: NUMBER(4) manager_id: Number(4)
 • precision: 4 • precision: 9
 • scale: 0 • scale: 0

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

Create table global_location (id number(4) NOT NULL,
 name varchar(20), date_opened date NOTNULL, address varchar(30)
 NOTNULL city varchar(20) NOTNULL, "zip/postal code" varchar(20),
 phone varchar(15), email varchar(80) UNIQUE, manager_id
 Number(4) 'emergency contact' varchar(40);

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

constraint global_email_uq UNIQUE (email);

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

same as the above create table

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

desc table;

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-fast-foods-location(id number(4) NOT NULL, loc_name varchar(20),
(date DATE NOT NULL, address varchar(30) NOT NULL, city
varchar(20) NOTNULL, zip_postal varchar(20), phone varchar(20)
email varchar(80), manager_id number(4), contact varchar(20)),
constraint gffl_id_pk PRIMARY KEY (id),
constraint gffl_email_uq UNIQUE (email),
constraint gffl_phone_uq UNIQUE (phone));

PRIMARY KEY, FOREIGN KEY, and CHECK Constraints

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

PRIMARY key:

- Must be unique
- Cannot be NULL

- 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)	PRIMARY KEY
name VARCHAR2(25)	UNIQUE
license_tag_number NUMBER(10)	NOT NULL
admit_date DATE	NOT NULL
adoption_id NUMBER(5),	
vaccination_date DATE	FOREIGN KEY

FOREIGN key:

* Reference the primary key of another table

* Enforce referential integrity

CHECK constraint:

* Ensure column values meet specific criteria.

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

~~Creating table animals (animal_id number(6) constraint PKanimal_id~~

~~Primary key, name varchar(25), license-tag number number(10)~~
~~constraint UK_license-tag UNIQUE, admit-date Date constraint nn-admit-date,~~
~~NOT NULL, adoption-id Number(5), vaccination-date Date constraint~~
~~nn-vaccination-date NOT NULL);~~

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

ANIMAL_ID	NAM E	LICENSE_TAG_NUMBE R	ADMIT_DATE	ADOPTION_ID	VACCINATION_DAT E
101	Spot	35540	10-Oct-2004	205	12-Oct-2004

Insert into animals values ('101', 'spot', 35540, to_date('10-Oct-2004'), '205', to_date('12-Oct-2004', 'DD-MM-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.

adoption_id number(5) constraint fk_adoption References
adoptions(adoptions_id)

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

- a. ON DELETE CASCADE _____ effect:
b. ON DELETE SET NULL

Automatically deletes the corresponding row
in the ANIMAL table

Effect:

Set the foreign key (adoption_id) in the ANIMAL
table to NULL when the referenced adoption record
is deleted.

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

You cannot use a subquery inside a check condition

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