

Lab 1

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Section 6 Lesson 3 Exercise : Data Definition Language

Part 1: Reading information from a script

In this exercise you will use the “obl Sports.ddl” file to consolidate your knowledge of DDL.

Open the “obl Sports.ddl” in a text editor.

1. How many tables have been created using the CREATE TABLE statement?

10 tables

2. How many columns are created for the price history table?

6 columns

3. What statement is used to enforce the constraint that the category column of the items table must have a value?

NOT NULL

4. What is the name of the foreign key constraint between the customers and customer addresses tables?

customer_address_customer_fk

5. What are the lowest and highest values that can be stored in the commission_rate column for the sales_representatives table?

Highest value is 99

Lowest value is -99

6. What are the lowest and highest values that can be stored in the price column for the price_history table?

Highest value is 99999.99

Lowest value is -99999.99

7. What are the 3 columns that make up the primary key for the price_history table?

itm_number, start_date, start_time

Part 2 : Updating Constraints

Log-in to APEX and go to the SQL commands environment

Modifying a column

1. Run the DESCRIBE command on the orders table to view its structure.

ANS:

Results

Explain

Describe

Saved SQL

History

Object Type

TABLE ?

Object

ORDERS ?

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ORDERS	ID	VARCHAR2	9	-	-	1	-	-	-
	ODR_DATE	DATE	7	-	-	-	-	-	-
	ODR_TIME	DATE	7	-	-	-	-	-	-
	NUMBER_OF_UNITS	NUMBER	-	2	0	-	-	-	-
	CTR_NUMBER	VARCHAR2	6	-	-	-	-	-	-

2. Task: Add a default constraint that will use today's date to assign a value to the odr_date column of the orders table if no date is provided.

ALTER TABLE orders

MODIFY odr_date DATE DEFAULT SYSDATE;

3. Run the DESCRIBE command again to verify the command was successful.

ANS:

Results

Explain

Describe

Saved SQL

History

Object Type

TABLE ?

Object

ORDERS ?

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ORDERS	ID	VARCHAR2	9	-	-	1	-	-	-
3	ODR_DATE	DATE	7	-	-	-	-	SYSDATE	-
	ODR_TIME	DATE	7	-	-	-	-	-	-
	NUMBER_OF_UNITS	NUMBER	-	2	0	-	-	-	-
	CTR_NUMBER	VARCHAR2	6	-	-	-	-	-	-

Adding a check constraint

1. Run the DESCRIBE command on the customers table to view its structure.

ANS:

Results	Explain	Describe	Saved SQL	History					
Object Type		TABLE ?	Object	CUSTOMERS ?					
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	NUMBER	-	6	2	-	-	-	-
	SRE_ID	VARCHAR2	4	-	-	-	✓	-	-
	TEM_ID	VARCHAR2	4	-	-	-	✓	-	-
	LOYALTY_CARD_NUMBER	VARCHAR2	6	-	-	-	✓	-	-

2. Task: Add a check constraint that will not allow the customers current balance to go below zero.

ALTER TABLE customers

ADD CONSTRAINT min_current_balance

CHECK (current_balance >=0)

3. Run the DESCRIBE command again to verify the command was successful.





ANS:

Results	Explain	Describe	Saved SQL	History					
Object Type		TABLE ?	Object	CUSTOMERS ?					
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	NUMBER	-	6	2	-	-	-	-
	SRE_ID	VARCHAR2	4	-	-	-	✓	-	-
	TEM_ID	VARCHAR2	4	-	-	-	✓	-	-
	LOYALTY_CARD_NUMBER	VARCHAR2	6	-	-	-	✓	-	-

4. A check constraint is not shown in the results of a describe command.

- Go to the Object Browser
- Select the customer's table.
- Click on the CONSTRAINTS tab.
- You will see your constraint here.

ANS:

Columns	Data	Indexes	Constraints	Grants	Statistics	Triggers	Dependencies	DDL	Sample Queries
+ Create  Drop  Enable  Disable  Refresh									
Search Condition	Related Constraint	Columns	Delete Rule	Status	Last Change	Index	Invalid		
current_balance >= 0				ENABLED	12/15/2023				
"CTR_NUMBER" IS NOT NULL				ENABLED	12/15/2023				
"EMAIL" IS NOT NULL				ENABLED	12/15/2023				
"FIRST_NAME" IS NOT NULL				ENABLED	12/15/2023				
"LAST_NAME" IS NOT NULL				ENABLED	12/15/2023				
"PHONE_NUMBER" IS NOT NULL				ENABLED	12/15/2023				
"CURRENT_BALANCE" IS NOT NULL				ENABLED	12/15/2023				
		CTR_NUMBER		ENABLED	12/15/2023	CUSTOMER_PK			
		EMAIL		ENABLED	12/15/2023	CTR_EMAIL_UK			
		LOYALTY_CARD_NUMBER		ENABLED	12/15/2023	CTR_LCN_UK			

Adding a column

The client has decided that they would like a separate column for the customer's mobile phone number. This is an optional column that will be required to store 11 digits.

- Run the DESCRIBE command on the customers table to view its structure.

ANS:

Results	Explain	Describe	Saved SQL	History					
Object Type		TABLE ?	Object		CUSTOMERS ?				
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	NUMBER	-	6	2	-	-	-	-
	SRE_ID	VARCHAR2	4	-	-	-	✓	-	-
	TEM_ID	VARCHAR2	4	-	-	-	✓	-	-
	LOYALTY_CARD_NUMBER	VARCHAR2	6	-	-	-	✓	-	-
	MOBILE_PHONE_NUMBER	VARCHAR2	11	-	-	-	✓	-	-

2. Task: Add column that will satisfy the clients requirements

ALTER TABLE customers

ADD mobile_number VARCHAR2(11);

3. Run the DESCRIBE command on the customers table to view its structure.

ANS:

Results	Explain	Describe	Saved SQL	History					
Object Type		TABLE ?	Object		CUSTOMERS ?				
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	NUMBER	-	6	2	-	-	-	-
	SRE_ID	VARCHAR2	4	-	-	-	✓	-	-
	TEM_ID	VARCHAR2	4	-	-	-	✓	-	-
	LOYALTY_CARD_NUMBER	VARCHAR2	6	-	-	-	✓	-	-
	MOBILE_NUMBER	VARCHAR2	11	-	-	-	✓	-	-

Dropping a column

The client has decided that they don't need the mobile number column as most customers only provide a single contact number and that is already catered for with the existing phone_number column.

1. Run the DESCRIBE command on the customers table to view its structure.

ANS:

Results Explain Describe Saved SQL History									
Object Type		Object CUSTOMERS							
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	NUMBER	-	6	2	-	-	-	-
	SRE_ID	VARCHAR2	4	-	-	-		-	-
	TEM_ID	VARCHAR2	4	-	-	-		-	-
	LOYALTY_CARD_NUMBER	VARCHAR2	6	-	-	-		-	-
	MOBILE_PHONE_NUMBER	VARCHAR2	11	-	-	-		-	-

2. Task: Drop the column that was created to store the mobile phone number.

ALTER TABLE customers

DROP (mobile_number)

3. Run the DESCRIBE command on the customers table to view its structure.

ANS:

Results

Explain

Describe

Saved SQL

History

Object Type

TABLE ?

Object

CUSTOMERS ?

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	NUMBER	-	6	2	-	-	-	-
	SRE_ID	VARCHAR2	4	-	-	-	✓	-	-
	TEM_ID	VARCHAR2	4	-	-	-	✓	-	-
	LOYALTY_CARD_NUMBER	VARCHAR2	6	-	-	-	✓	-	-