

SCHOOL OF COMPUTING SESSION 2023/2024, SEMESTER 1 SECV2113 DATABASE SECTION 10

LAB 1

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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?
- 2. How many columns are created for the price history table?
- 3. What statement is used to enforce the constraint that the category column of the items table must have a value?
- 4. What is the name of the foreign key constraint between the customers and customer addresses tables?
- 5. What are the lowest and highest values that can be stored in the commission_rate column for the sales_representatives table?
- 6. What are the lowest and highest values that can be stored in the price column for the price_history table?
- 7. What are the 3 columns that make up the primary key for the price_history table?
- 1. 10 tables
- 2. 6 columns
- 3. NOT NULL
- 4. foreign key = id
- 5. lowest = -99highest = 99
- 6. lowest = -99999.99highest = 99999.99
- 7. ITM_NUMBER, START_DATE, START_TIME

Part 2: Updating Constraints

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

Modifying a column

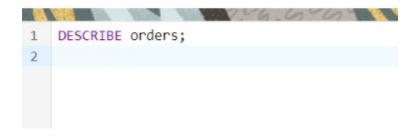
- 1. Run the DESCRIBE command on the orders table to view its structure.
- 2. **Task**: Add a default constraint that will use todays date to assign a value to the odr_date column of the orders table if no date is provided.
- 3. Run the DESCRIBE command again to verify the command was successful.

Adding a check constraint

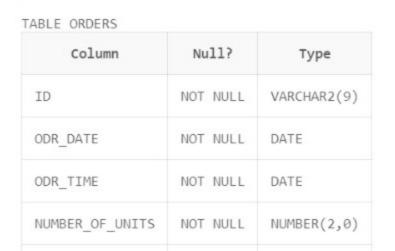
- 1. Run the DESCRIBE command on the customers table to view its structure.
- 2. Task: Add a check constraint that will not allow the customers current balance to go below zero.
- 3. Run the DESCRIBE command again to verify the command was successful.
- 4. A check constraint is not shown in the results of a describe command.
 - a. Go to the Object Browser
 - b. Select the customers table.
 - c. Click on the CONSTRAINTS tab.
 - d. You will see your constraint here.

Part 2 Modifying a column

SQL Worksheet



SQL Worksheet



NOT NULL

VARCHAR2(6)

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Adding a check constraint

CTR_NUMBER

1. DESCRIBE customers;

TABLE CUSTOMERS						
Column	Null?	Туре				
CTR_NUMBER	NOT NULL	VARCHAR2(6)				
EMAIL	NOT NULL	VARCHAR2(50)				
FIRST_NAME	NOT NULL	VARCHAR2(20)				
LAST_NAME	NOT NULL	VARCHAR2(30)				
PHONE_NUMBER	NOT NULL	VARCHAR2(11)				
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)				
SRE_ID	-	VARCHAR2(4)				
TEM_ID	-	VARCHAR2(4)				
LOYALTY_CARD_NUMBER	-	VARCHAR2(6)				

ALTER TABLE customers ADD CONSTRAINT check_balance CHECK (current_balance >= 0);

Constraints

Constraint	Туре	Condition	Related Constraint	Related Table	Constraint Columns	On Delete	Status	Last Change	Invalid?
CHECK_BALANCE	Check	current_balance >= 0	-	-	-	-	ENABLED	58 seconds ago	-
SYS_C00144406500	Check	"CTR_NUMBER" IS NOT NULL	-	-	-	-	ENABLED	4 minutes ago	-
SYS_C00144406501	Check	"EMAIL" IS NOT NULL	-	-	-	-	ENABLED	4 minutes ago	-
SYS_C00144406502	Check	"FIRST_NAME" IS NOT NULL	-	-	-	-	ENABLED	4 minutes ago	-
SYS_C00144406503	Check	"LAST_NAME" IS NOT NULL	-	-	-	-	ENABLED	4 minutes ago	-
SYS_C00144406504	Check	"PHONE_NUMBER" IS NOT NULL	-	-	-	-	ENABLED	4 minutes ago	-
SYS_C00144406505	Check	"CURRENT_BALANCE" IS NOT NULL	-	-	-	-	ENABLED	4 minutes ago	-
CUSTOMER_SALES_REP_FK	Foreign Key	-	SALES_REPRESENTATIVE_PK	SALES_REPRESENTATIVES	SRE_ID	NO ACTION	ENABLED	4 minutes ago	-
CUSTOMER_TEAM_FK	Foreign Key	-	TEAM_PK	TEAMS	TEM_ID	NO ACTION	ENABLED	4 minutes ago	-
CUSTOMER_PK	Primary Key	-	-	-	CUSTOMER_ID	-	ENABLED	4 minutes ago	-

3. DESCRIBE customers;

TABLE CUSTOMERS

Column	Null?	Туре
CTR_NUMBER	NOT NULL	VARCHAR2(6)
EMAIL	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(30)
PHONE_NUMBER	NOT NULL	VARCHAR2(11)
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)
SRE_ID	-	VARCHAR2(4)
TEM_ID	-	VARCHAR2(4)
LOYALTY_CARD_NUMBER	-	VARCHAR2(6)

Constraints

Constraint	Туре	Condition	Related Constraint	Related Table	Constraint Columns	On Delete	Status	Last Change	Invalid?
CHECK_BALANCE	Check	current_balance >= 0	-	-	-	-	ENABLED	11 minutes ago	-
SYS_C00144406500	Check	"CTR_NUMBER" IS NOT NULL	-	-	-	-	ENABLED	14 minutes ago	-
SYS_C00144406501	Check	"EMAIL" IS NOT NULL	-	-	-	-	ENABLED	14 minutes ago	-
SYS_C00144406502	Check	"FIRST_NAME" IS NOT NULL	-	-	-	-	ENABLED	14 minutes ago	-
SYS_C00144406503	Check	"LAST_NAME" IS NOT NULL	-	-	-	-	ENABLED	14 minutes ago	-
SYS_C00144406504	Check	"PHONE_NUMBER" IS NOT NULL	-	-	-	-	ENABLED	14 minutes ago	-
SYS_C00144406505	Check	"CURRENT_BALANCE" IS NOT NULL	-	-	-	-	ENABLED	14 minutes ago	-
CUSTOMER_SALES_REP_FK	Foreign Key	-	SALES_REPRESENTATIVE_PK	SALES_REPRESENTATIVES	SRE_ID	NO ACTION	ENABLED	14 minutes ago	-
CUSTOMER_TEAM_FK	Foreign Key	-	TEAM_PK	TEAMS	TEM_ID	NO ACTION	ENABLED	14 minutes ago	-
CUSTOMER_PK	Primary Key	-	-	-	CUSTOMER_ID	-	ENABLED	14 minutes ago	-

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.

- 1. Run the DESCRIBE command on the customers table to view its structure.
- 2. Task: Add column that will satisfy the clients requirements
- 3. Run the DESCRIBE command on the customers table to view its structure.

1. TABLE CUSTOMERS

Column	Null?	Туре
CTR_NUMBER	NOT NULL	VARCHAR2(6)
EMAIL	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(30)
PHONE_NUMBER	NOT NULL	VARCHAR2(11)
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)
SRE_ID	-	VARCHAR2(4)
TEM_ID	-	VARCHAR2(4)
LOYALTY_CARD_NUMBER	-	VARCHAR2(6)

2. ALTER TABLE customers ADD mobile_number VARCHAR2(11);

3.

TABLE CUSTOMERS

Column	Null?	Туре		
CTR_NUMBER	NOT NULL	VARCHAR2(6)		
EMAIL	NOT NULL	VARCHAR2(50)		
FIRST_NAME	NOT NULL	VARCHAR2(20)		
LAST_NAME	NOT NULL	VARCHAR2(30)		
PHONE_NUMBER	NOT NULL	VARCHAR2(11)		
CURRENT_BALANCE	NOT NULL	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.
- 2. Task: Drop the column that was created to store the mobile phone number.
- 3. Run the DESCRIBE command on the customers table to view its structure.

1.

TABLE CUSTOMERS

Column	Null?	Туре
CTR_NUMBER	NOT NULL	VARCHAR2(6)
EMAIL	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(30)
PHONE_NUMBER	NOT NULL	VARCHAR2(11)
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)
SRE_ID	-	VARCHAR2(4)
TEM_ID	-	VARCHAR2(4)
LOYALTY_CARD_NUMBER	-	VARCHAR2(6)
MOBILE_NUMBER	-	VARCHAR2(11)

ALTER TABLE customers DROP COLUMN mobile_number;

TABLE CUSTOMERS

Column	Null?	Туре
CTR_NUMBER	NOT NULL	VARCHAR2(6)
EMAIL	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(30)
PHONE_NUMBER	NOT NULL	VARCHAR2(11)
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)
SRE_ID	-	VARCHAR2(4)
TEM_ID	-	VARCHAR2(4)
LOYALTY_CARD_NUMBER	-	VARCHAR2(6)