



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

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 = -99
highest = 99
 6. lowest = -99999.99
highest = 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 today's 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

1	DESCRIBE orders;
2	

SQL Worksheet



TABLE ORDERS

Column	Null?	Type
ID	NOT NULL	VARCHAR2(9)
ODR_DATE	NOT NULL	DATE
ODR_TIME	NOT NULL	DATE
NUMBER_OF_UNITS	NOT NULL	NUMBER(2,0)
CTR_NUMBER	NOT NULL	VARCHAR2(6)

Adding a check constraint

1. DESCRIBE customers;

TABLE CUSTOMERS

Column	Null?	Type
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 CONSTRAINT check_balance CHECK (current_balance >= 0);

Constraints

Constraint	Type	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?	Type
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)

4.

Constraints

Constraint	Type	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?	Type
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?	Type
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?	Type
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)

2. ALTER TABLE customers
DROP COLUMN mobile_number;

3.

TABLE CUSTOMERS

Column	Null?	Type
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)