



Faculty of Computing

SECD2523-08 : DATABASE

Lab 1: DDL

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Section 6 Lesson 3 Exercise : Data Definition Language

Part 1: Reading information from a script

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

There are 10 tables created.

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

There are 6 columns created.

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

“NOT NULL” statement.

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?**

Lowest = -99

Highest = 99

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

Lowest = -99999

Highest = 99999

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.

SQL Worksheet

 **Play SQuizL!**
A free guess the SQL statement quiz with a new challenge every

1 DESCRIBE ORDERS

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)

Download CSV

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.

Statement 25	<pre>ALTER TABLE ORDERS MODIFY odr_date DATE DEFAULT SYSDATE</pre>
	Table altered.

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

SQL Worksheet

```
1 DESCRIBE ORDERS
```

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)

Download CSV

5 rows selected.

Adding a check constraint

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

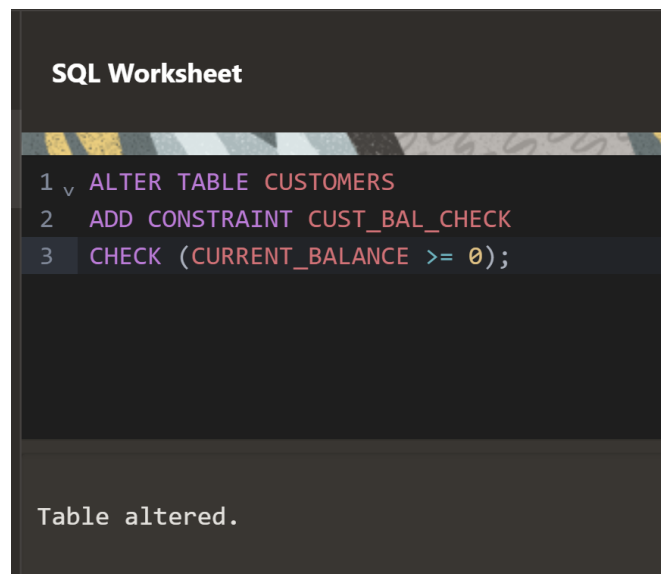
SQL Worksheet

```
1 DESCRIBE CUSTOMERS
```

TABLE CUSTOMERS

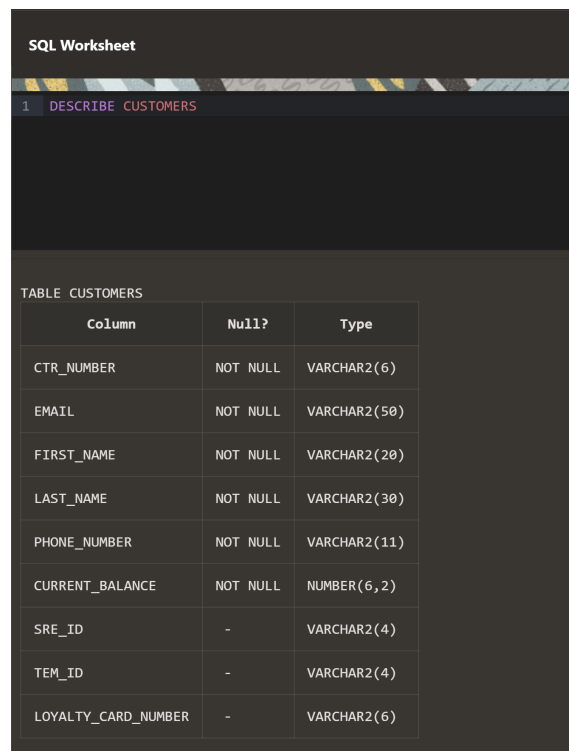
Column	Null?	Type
CTR_NUMBER	NOT NULL	VARCHAR2(6)
EMAIL	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(30)
PHONE_NUMBER	NOT NULL	VARCHAR2(11)
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)
SRE_ID	-	VARCHAR2(4)
TEM_ID	-	VARCHAR2(4)
LOYALTY_CARD_NUMBER	-	VARCHAR2(6)

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



The screenshot shows an SQL Worksheet interface. At the top, it says "SQL Worksheet". Below that, there is a code editor with three lines of SQL code:
1 ALTER TABLE CUSTOMERS
2 ADD CONSTRAINT CUST_BAL_CHECK
3 CHECK (CURRENT_BALANCE >= 0);
Below the code editor, the text "Table altered." is displayed, indicating the successful execution of the command.

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



The screenshot shows an SQL Worksheet interface. At the top, it says "SQL Worksheet". Below that, there is a code editor with one line of SQL code:
1 DESCRIBE CUSTOMERS
Below the code editor, the results of the DESCRIBE command are displayed as a table. The table has three columns: Column, Null?, and Type. The table lists the columns of the CUSTOMERS table and their properties.

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. 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.

Constraints									
Constraint	Type	Condition	Related Constraint	Related Table	Constraint Columns	On Delete	Status	Last Change	Invalid?
CUST_BAL_CHECK	Check	CURRENT_BALANCE >= 0	-	-	-	-	ENABLED	2 minutes ago	-
SYS_C00143879189	Check	"CTR_NUMBER" IS NOT NULL	-	-	-	-	ENABLED	15 minutes ago	-
SYS_C00143879190	Check	"EMAIL" IS NOT NULL	-	-	-	-	ENABLED	15 minutes ago	-
SYS_C00143879191	Check	"FIRST_NAME" IS NOT NULL	-	-	-	-	ENABLED	15 minutes ago	-
SYS_C00143879192	Check	"LAST_NAME" IS NOT NULL	-	-	-	-	ENABLED	15 minutes ago	-
SYS_C00143879193	Check	"PHONE_NUMBER" IS NOT NULL	-	-	-	-	ENABLED	15 minutes ago	-
SYS_C00143879194	Check	"CURRENT_BALANCE" IS NOT NULL	-	-	-	-	ENABLED	15 minutes ago	-
CUSTOMER_SALES_REP_FK	Foreign Key	-	SALES_REPRESENTATIVE_PK	SALES_REPRESENTATIVES	SRE_ID	NO ACTION	ENABLED	15 minutes ago	-
CUSTOMER_TEAM_FK	Foreign Key	-	TEAM_PK	TEAMS	TEM_ID	NO ACTION	ENABLED	15 minutes ago	-
CUSTOMER_PK	Primary Key	-	-	-	CUSTOMER_ID	-	ENABLED	15 minutes ago	-
CTR_EMAIL_UK	Unique Key	-	-	-	EMAIL	-	ENABLED	15 minutes ago	-
CTR_LCN_UK	Unique Key	-	-	-	LOYALTY_CARD_NUMBER	-	ENABLED	15 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.

SQL Worksheet

1 DESCRIBE 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. Task: Add column that will satisfy the clients requirements

SQL Worksheet

```
1 ALTER TABLE CUSTOMERS
2 ADD MOBILE_NUMBER VARCHAR2(11);
```

Table altered.

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

SQL Worksheet		
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)
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.

SQL Worksheet

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)
MOBILE_NUMBER	-	VARCHAR2(11)

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

SQL Worksheet

1 ✓ ALTER TABLE CUSTOMERS

2 DROP COLUMN MOBILE_NUMBER;

Table altered.

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

SQL Worksheet

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)