UTM

UNIVERSITI TEKNOLOGI MALAYSIA

SECD2523
DATABASE

SECTION 10

SQL LAB 1 - DDL

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Section 6 Lesson 3 Exercise: Data Definition Language
Use DDL to build and maintain a database tables (S6L3 Objective 3)

Part 1: Reading information from a script
In this exercise, you will use the "obl Sports.ddl" file to consolidate your knowledge of DDL.

1. How many tables have been created using the CREATE TABLE statement?
   There are 10 tables that have been created using the CREATE TABLE statement.

2. How many columns are created for the price history table?
   There are 6 columns created for the price history table : 'start_date' , 'start_time' , 'price' , 'end_date' , 'end_time' and 'itm_number'.

3. What statement is used to enforce the constraint that the category column of the items table must have a value?
   The 'NOT NULL' constraint is used to enforce 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?
   The name of the foreign key constraint between the customers and customer addresses tables is '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?
   The lowest and highest values that can be stored in the commission_rate column for the sales_representatives table is 0 to 99.

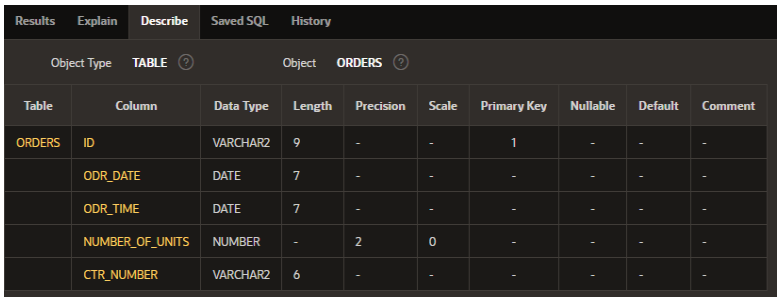
6. What are the lowest and highest values that can be stored in the price column for the price_history table?
   The lowest and highest values that can be stored in the price column for the price_history table is -9999999.99, and the highest value is 9999999.99.

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.
   - DESC orders;

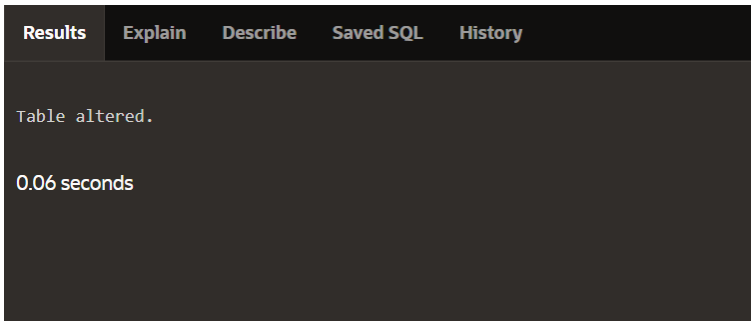


Results | Explain | Describe | Saved SQL | History

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 DEFAULT SYSDATE;



3. Run the DESCRIBE command again to verify the command was successful.
    - DESC orders;

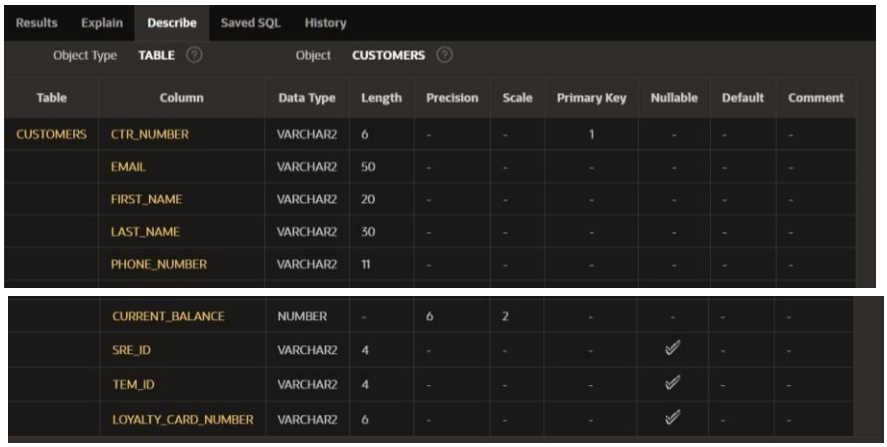
Results | Explain | **Describe** | Saved SQL | History

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	-	-	-	-	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.
    - DESC customers;

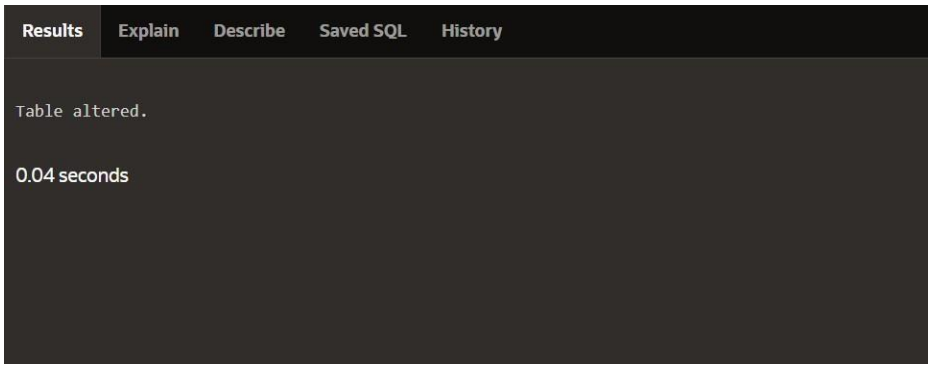


Results | Explain | Describe | Saved SQL | History

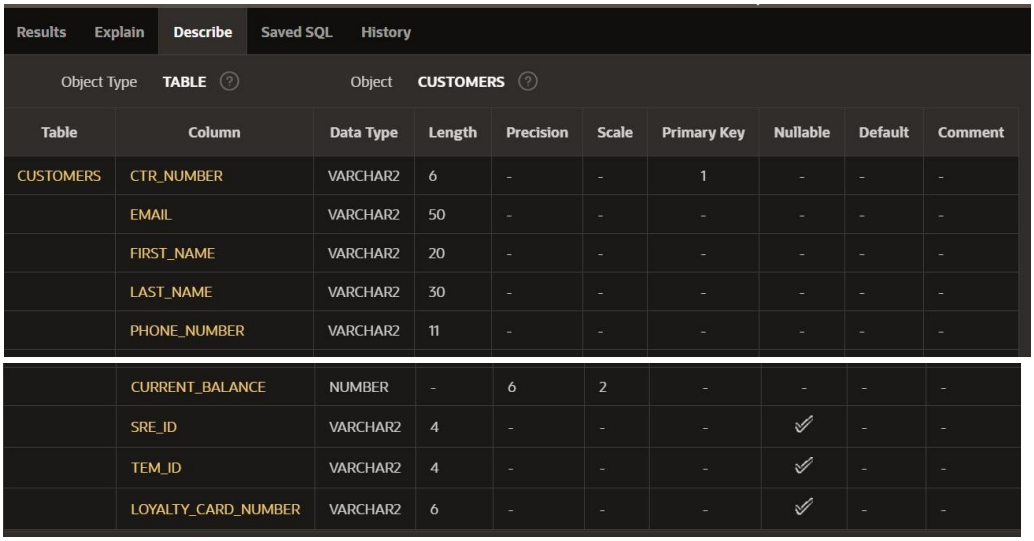
Object Type TABLE Object CUSTOMERS

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	-	-	-	✓	-	-

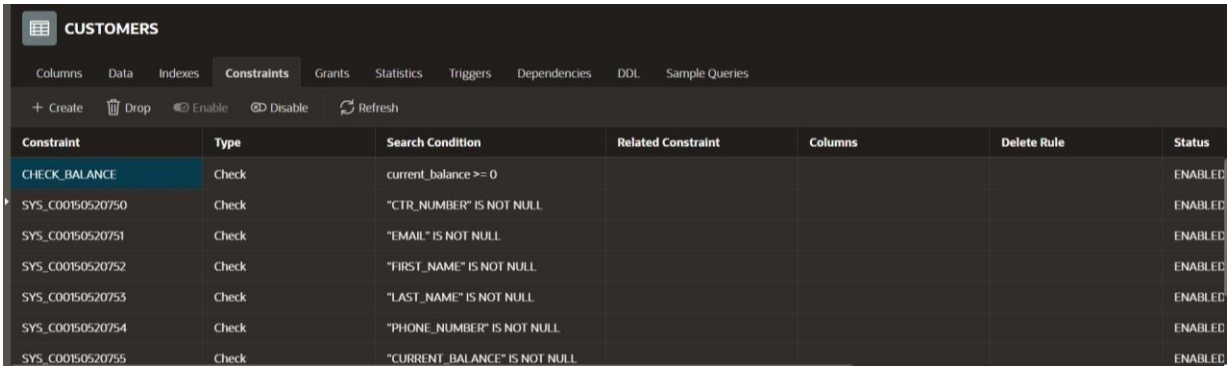
2. Task: Add a check constraint that will not allow the customers current balance to go below zero.
    - ALTER TABLE customers
      ADD CONSTRAINT check_balance CHECK (current_balance >= 0);



3. Run the DESCRIBE command again to verify the command was successful.
    - DESC customers;



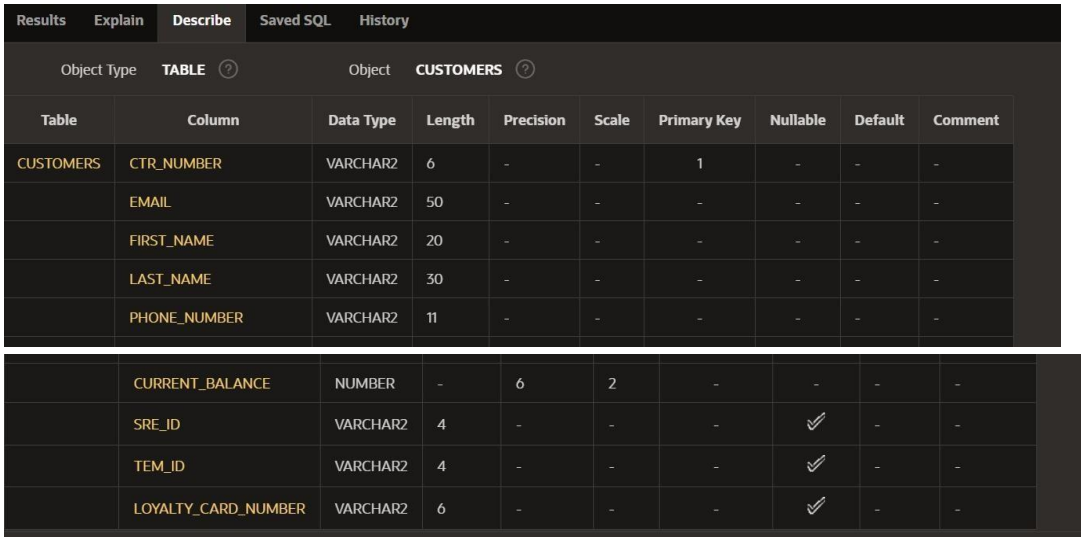
4. A check constraint is not shown in the results of a describe command.
    a. Go to the Object Browser.
    b. Select the customers table.
    c. Click on the CONSTRAINTS TAB.
    d. You will see your constraint here.



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 that will view its structure.
   - DESC customers;

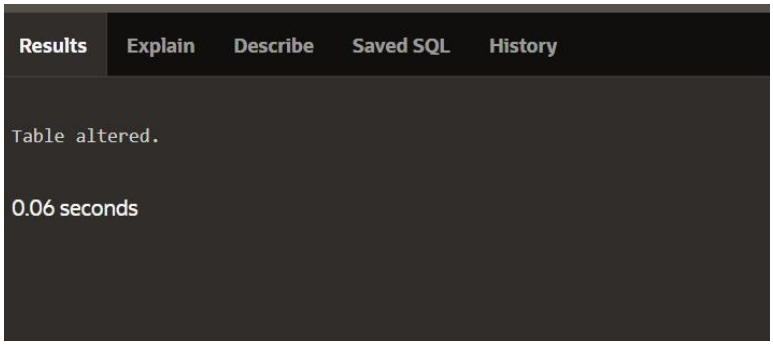


Results | Explain | Describe | Saved SQL | History

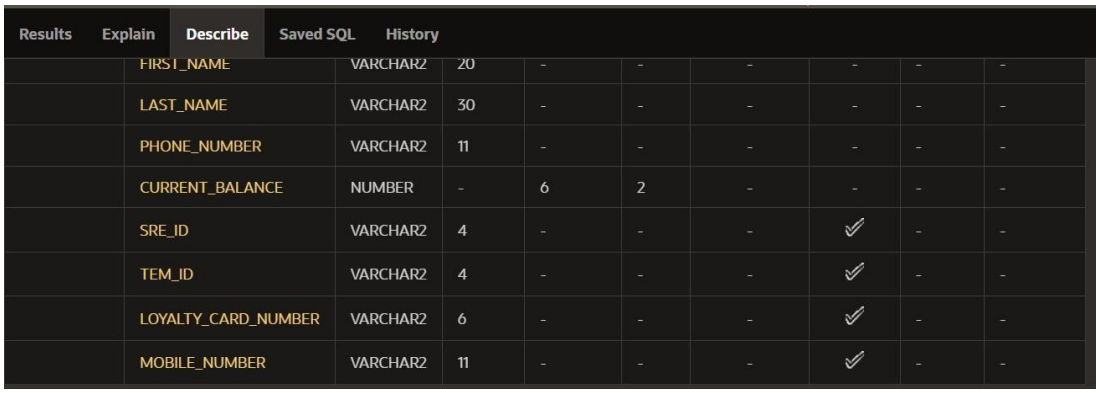
Object Type TABLE Object CUSTOMERS

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 the 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.
    - DESC customers;



Dropping 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.

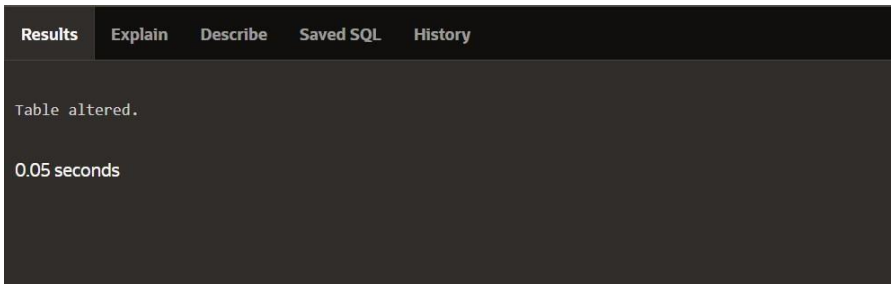
1. Run the DESCRIBE command on the customers table to view its structure.
    - DESC customers;

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	-	-	-	✓	-	-

2. Task: Drop the column that was created to store the mobile phone number.
    - ALTER TABLE customers
      DROP COLUMN mobile_number;



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