



UTM DEGREE PROGRAMME

UNIVERSITI TEKNOLOGI MALAYSIA

## Database

(SECD 2523)

### **Lab 1 :DDL**

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Section: 08

## Section 6 Lesson 3 Exercise : Data Definition Language

### Use DDL to build and maintain 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.

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?

*The lowest value is -99 while the highest value is 99.*

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

*The lowest value is -99999.99 while the highest 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.

The screenshot shows the APEX SQL Workshop interface. The 'SQL Commands' tab is active, and the 'Describe' sub-tab is selected. The command 'Describe ORDERS' has been executed. The results are displayed in a table format, showing the structure of the ORDERS table.

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	-	-	-	-	-	-

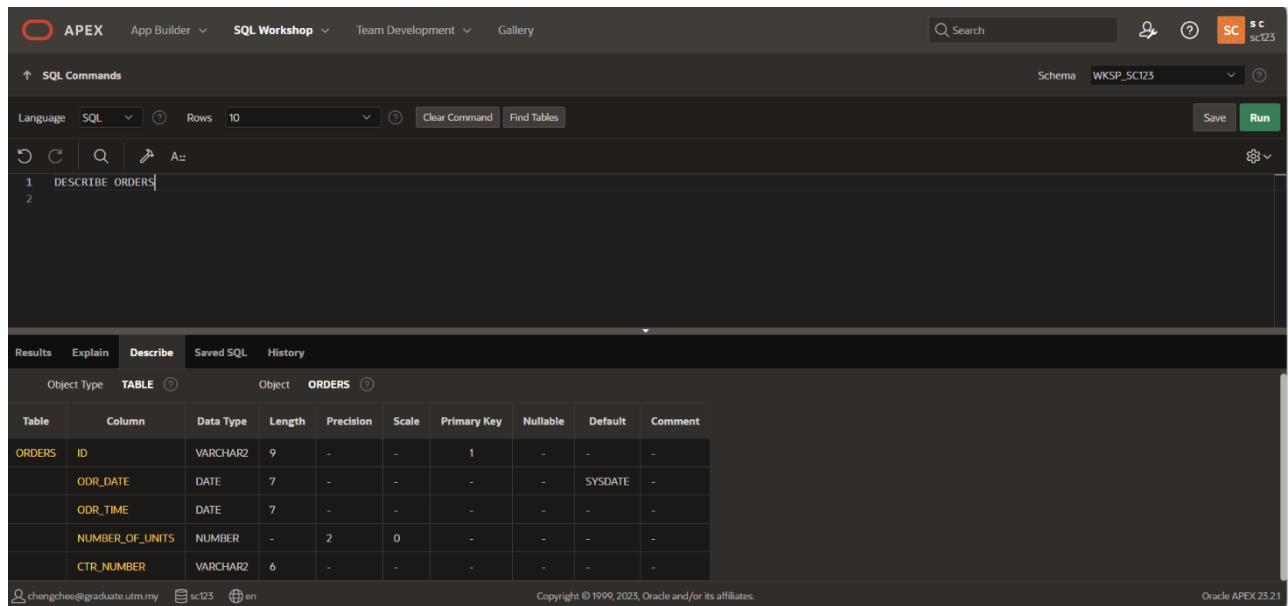
2. **Task:** Add a default constraint that will use today's date to assign a value to the odr\_date column of the orders table if no date is provided.

The screenshot shows the APEX SQL Workshop interface. The 'SQL Commands' tab is active, and the 'Results' sub-tab is selected. The command 'ALTER TABLE ORDERS MODIFY odr\_date DATE DEFAULT SYSDATE' has been executed successfully. The results show 'Table altered.' and the execution time '0.06 seconds'.

```
1 ALTER TABLE ORDERS
2 MODIFY odr_date DATE DEFAULT SYSDATE
3
```

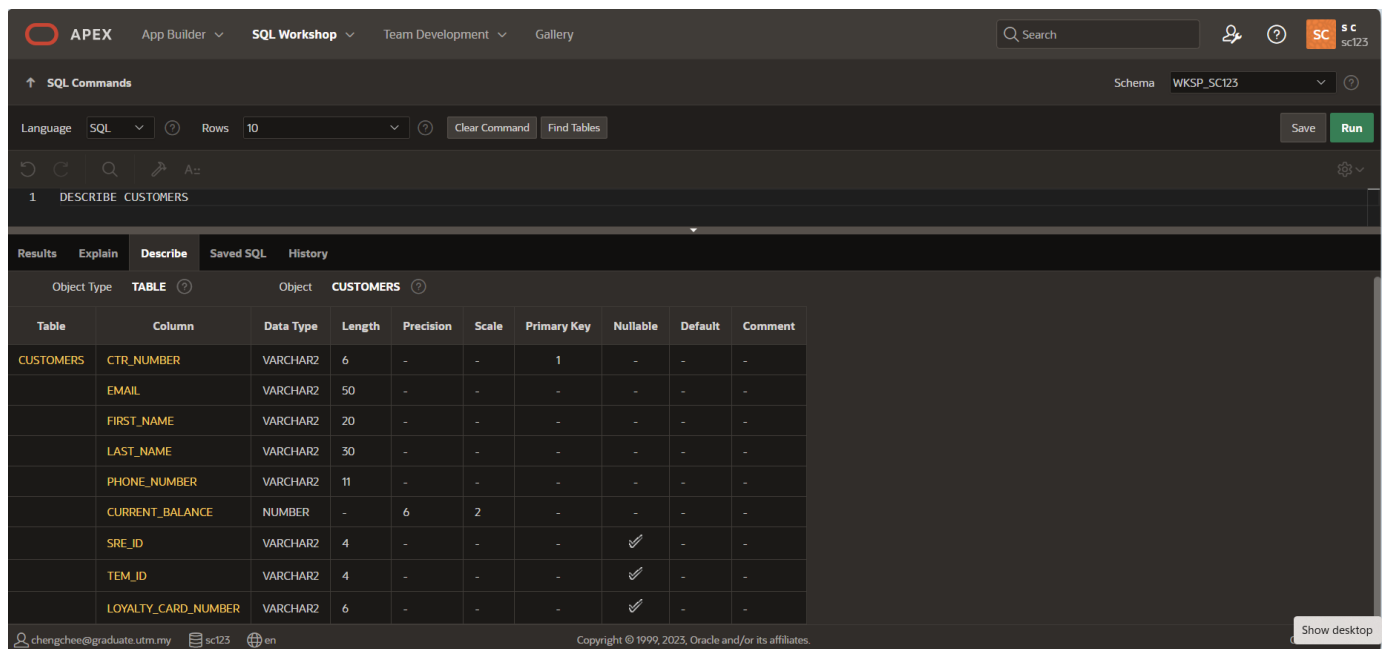
Table altered.  
0.06 seconds

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

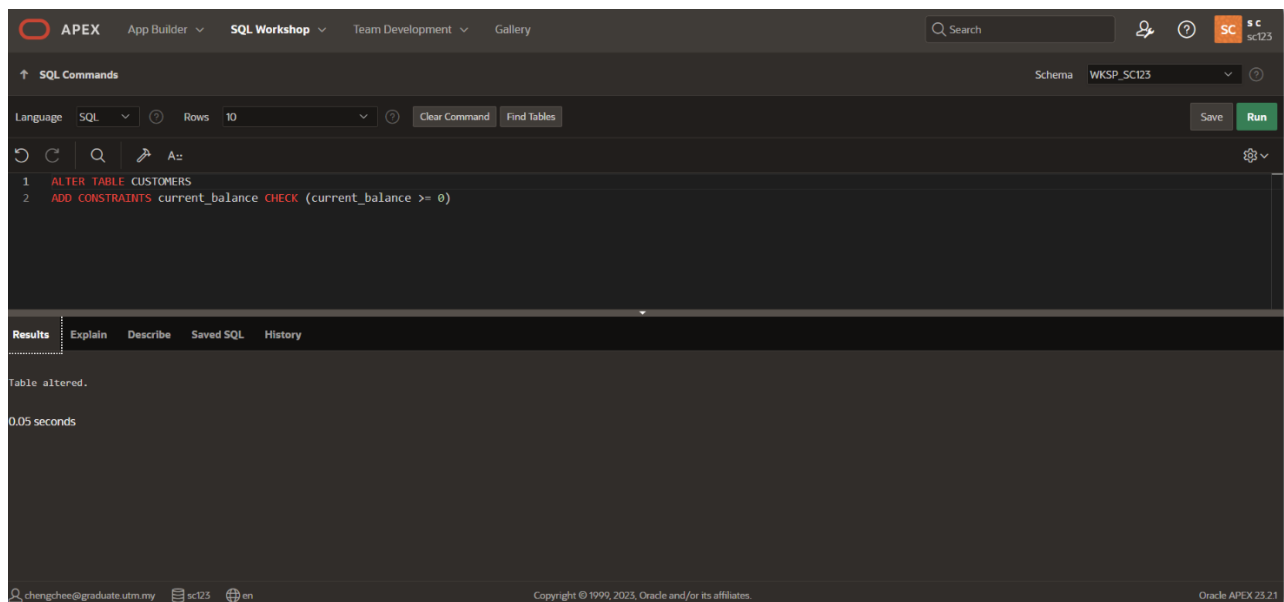


## Adding a check constraint

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.

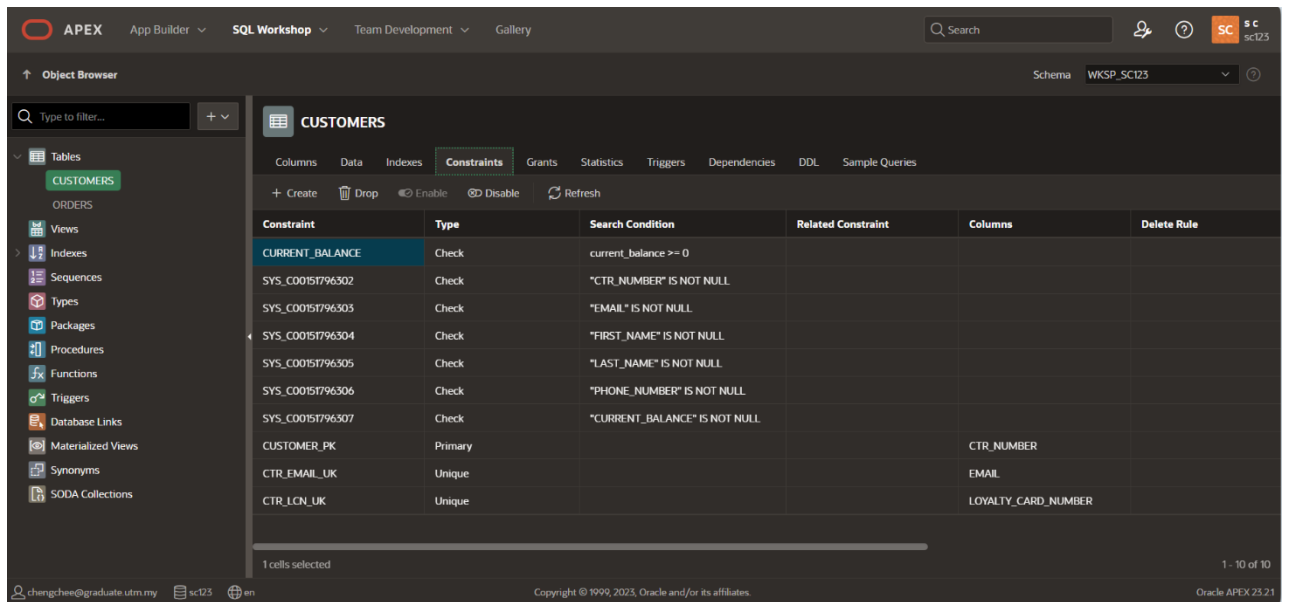


3. Run the DESCRIBE command again to verify the command was successful.

The screenshot shows the Oracle APEX SQL Workshop interface with the 'DESCRIBE CUSTOMERS' command entered. The 'Describe' tab is selected, displaying the table structure for the 'CUSTOMERS' table.

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	-	-	-	✓	-	-

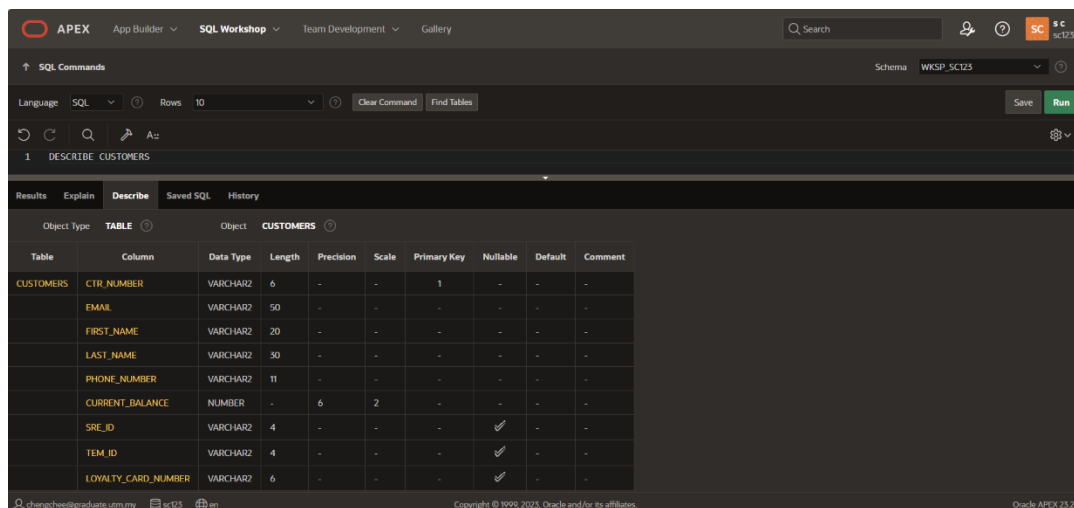
4. A check constraint is not shown in the results of a describe command.
  - a. Go to the Object Browser
  - b. Select the customers table.
  - c. Click on the CONSTRAINTS tab.
  - d. You will see your constraint here.



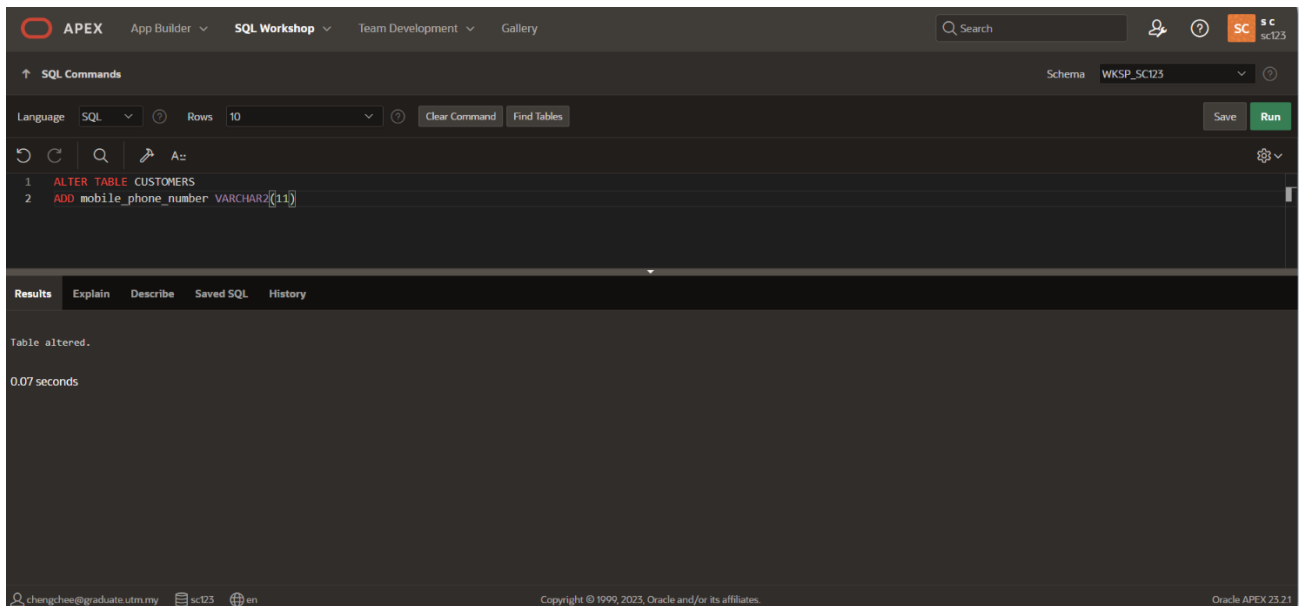
## Adding a column

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 to view its structure.

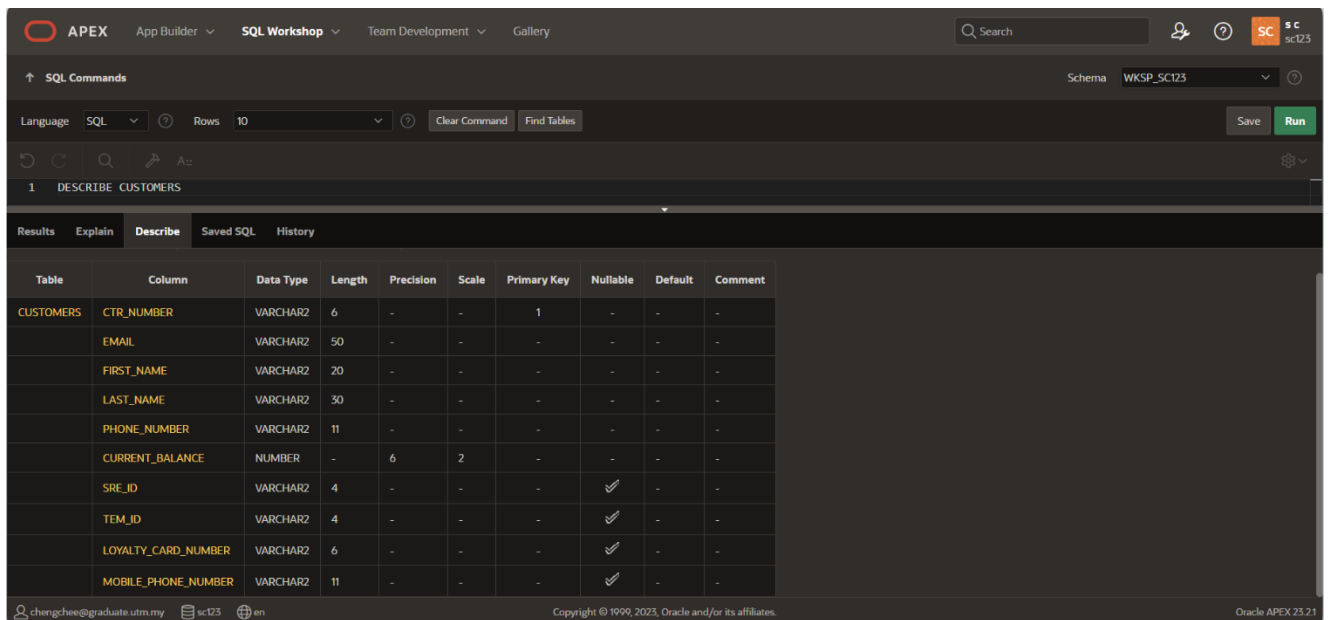


2. **Task:** Add column that will satisfy the clients requirements



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

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## 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.

APEX App Builder SQL Workshop Team Development Gallery

Schema: WKSP\_SC123

Language: SQL Rows: 10 Clear Command Find Tables Save Run

1 DESCRIBE CUSTOMERS

Results Explain Describe Saved SQL History

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	-	-	-	✓	-	-

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

APEX App Builder SQL Workshop Team Development Gallery

Schema: WKSP\_SC123

Language: SQL Rows: 10 Clear Command Find Tables Save Run

1 ALTER TABLE CUSTOMERS  
2 DROP (mobile\_phone\_number)

Results Explain Describe Saved SQL History

Table altered.  
0.08 seconds

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



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SQL Commands
Schema: WKSP\_SC123

Language: SQL
Rows: 10
Clear Command
Find Tables
Save
Run

1
DESCRIBE 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	-	-	-	✓	-	-

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