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SECD2523 - DATABASE

SECTION: 08

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LAB 1- DDL

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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.

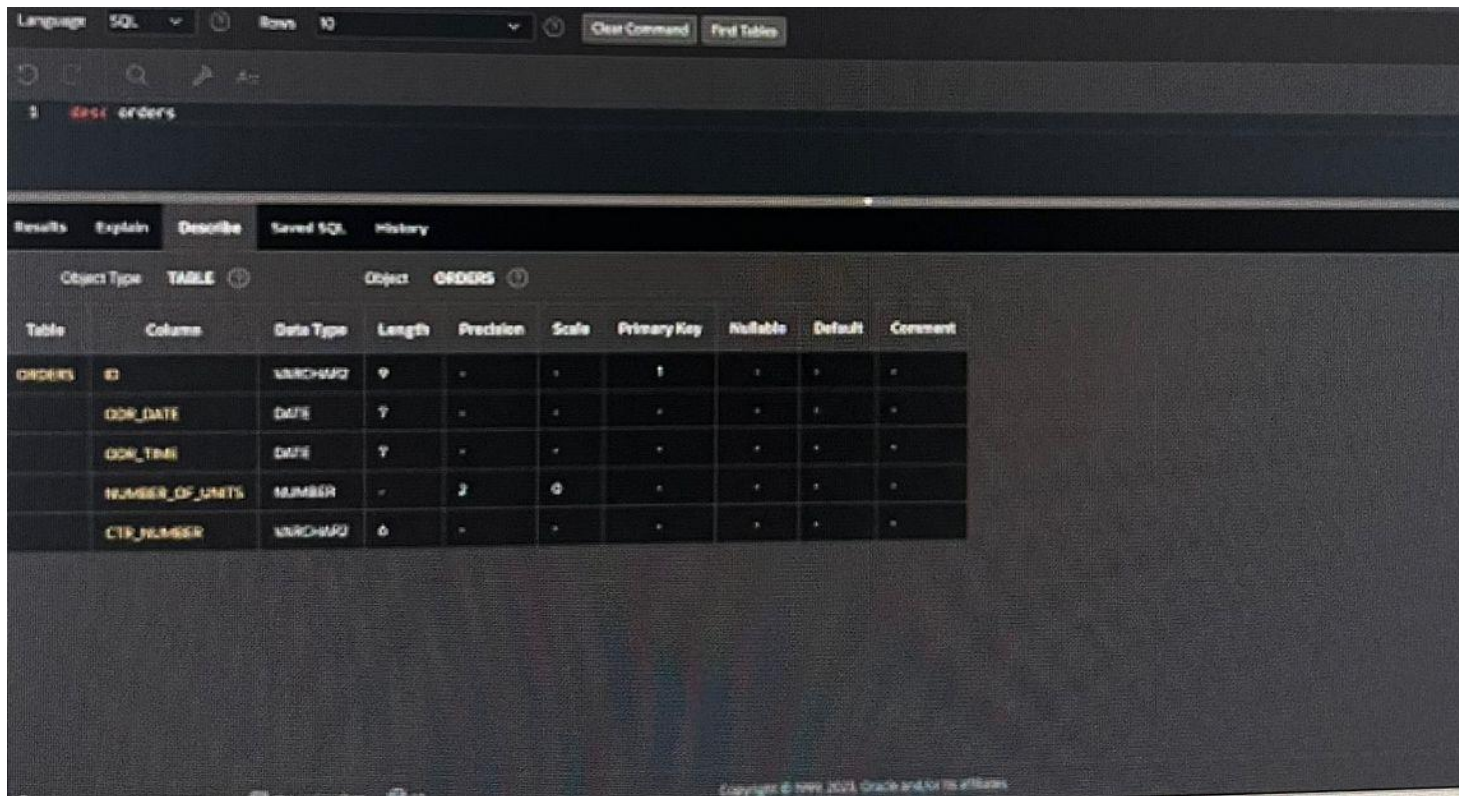
1. How many tables have been created using the CREATE TABLE statement? 10
2. How many columns are created for the price history table? 6
3. What statement is used to enforce the constraint that the category column of the items table must have a value? NOT NULL
4. What is the name of the foreign key constraint between the customers and customer address 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 value is; -99, 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? Lowest value is -99999.99 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

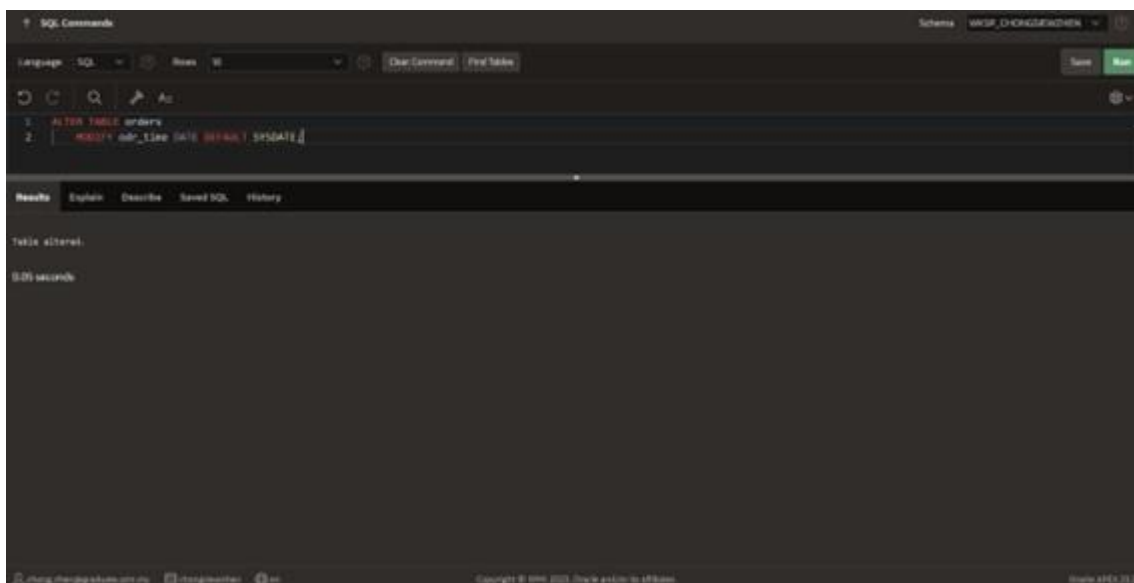
1. Run the DESCRIBE command on the orders table to view its structure.



The screenshot shows the APEX SQL Commands environment. The command 'DESC orders' has been entered and executed. The results are displayed in a table format under the 'Describe' tab. The table has columns: Table, Column, Data Type, Length, Precision, Scale, Primary Key, Nullable, Default, and Comment. The data shows 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 Commands environment. The command 'ALTER TABLE orders ADD (odr_date DATE DEFAULT SYSDATE)' has been entered and executed. The results are displayed in a table format under the 'Results' tab. The table has columns: Table, Column, Data Type, Length, Precision, Scale, Primary Key, Nullable, Default, and Comment. The data shows the structure of the 'ORDERS' table after the command is executed.

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	-	-	-	-	-	-

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

SQL Commands

Language: SQL Rows: 10

Clear Command Find Table

Save Run

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	8	-	-	1	-	-	-
	ORD_DATE	DATE	7	-	-	-	-	-	-
	ORD_TIME	DATE	7	-	-	-	-	SYSDATE	-
	NUMBER_OF_UNITS	NUMBER	-	2	0	-	-	-	-
	CTR_NUMBER	VARCHAR2	4	-	-	-	-	-	-

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SQL Commands

Language: SQL Rows: 10

Clear Command Find Table

Save Run

DESCRIBE orders

Results Explain Describe Saved SQL History

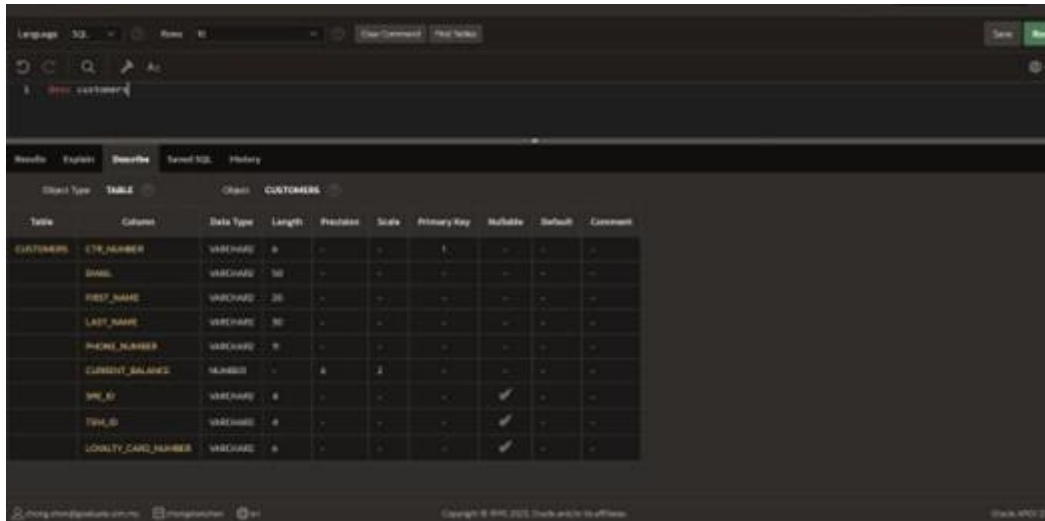
Object Type: TABLE Object: ORDERS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ORDERS	ID	VARCHAR2	8	-	-	1	-	-	-
	ORD_DATE	DATE	7	-	-	-	-	-	-
	ORD_TIME	DATE	7	-	-	-	-	SYSDATE	-
	NUMBER_OF_UNITS	NUMBER	-	2	0	-	-	-	-
	CTR_NUMBER	VARCHAR2	8	-	-	-	-	-	-

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Adding a check constraint

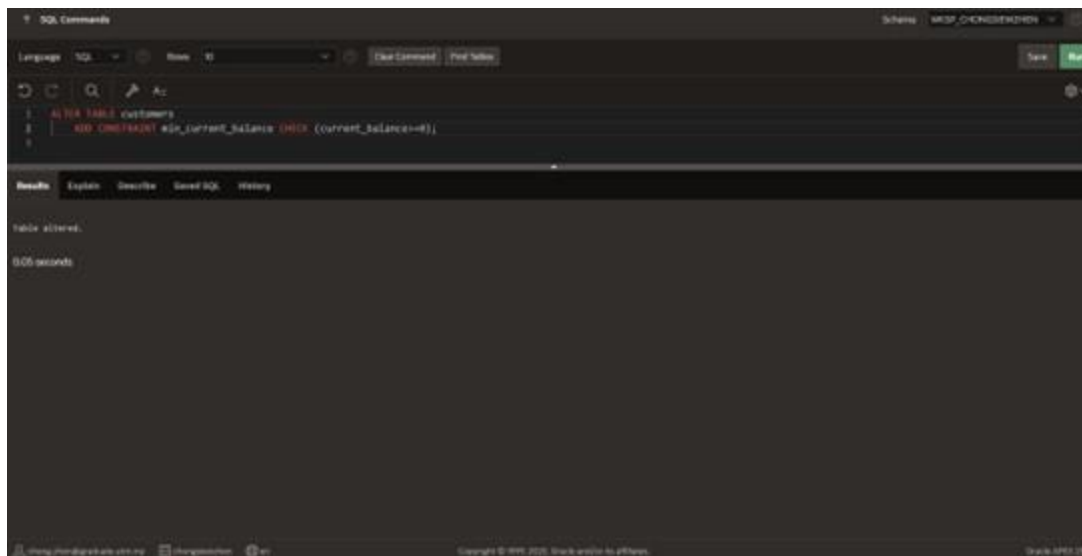
1. Run the DESCRIBE command on the customers table to view its structure.



The screenshot shows the SQL Developer interface with the 'DESCRIBE' command executed on the 'CUSTOMERS' table. The results are displayed in a table with columns: Table, Column, Data Type, Length, Precision, Scale, Primary Key, Nullable, Default, and Comment.

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CUSTOMER_ID	NUMBER	4			✓	✓		
	EMAIL	VARCHAR2	50			✓	✓		
	PHONE_NUMBER	VARCHAR2	30			✓	✓		
	LAST_NAME	VARCHAR2	50			✓	✓		
	PHONE_NUMBER	VARCHAR2	30			✓	✓		
	CURRENT_BALANCE	NUMBER	4			✓	✓		
	SSN_ID	VARCHAR2	4			✓	✓		
	TRN_ID	VARCHAR2	4			✓	✓		
	LOANLY_CARD_NUMBER	VARCHAR2	4			✓	✓		

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

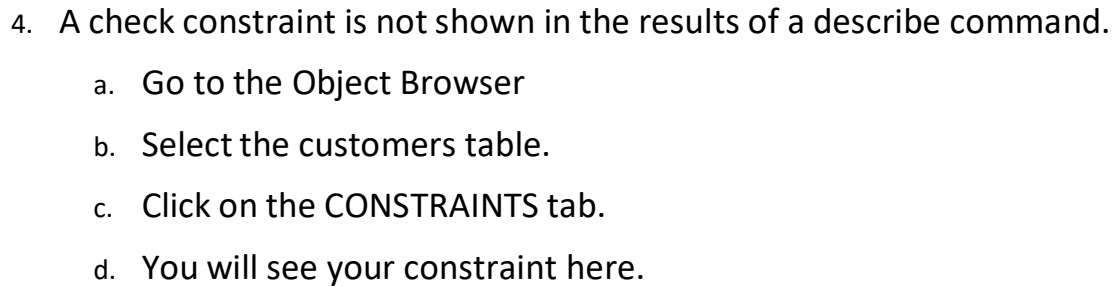


The screenshot shows the SQL Developer interface with the following SQL command entered in the command window:

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

The results pane shows the message: "Table altered." and "0.05 seconds".

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



Adding a column

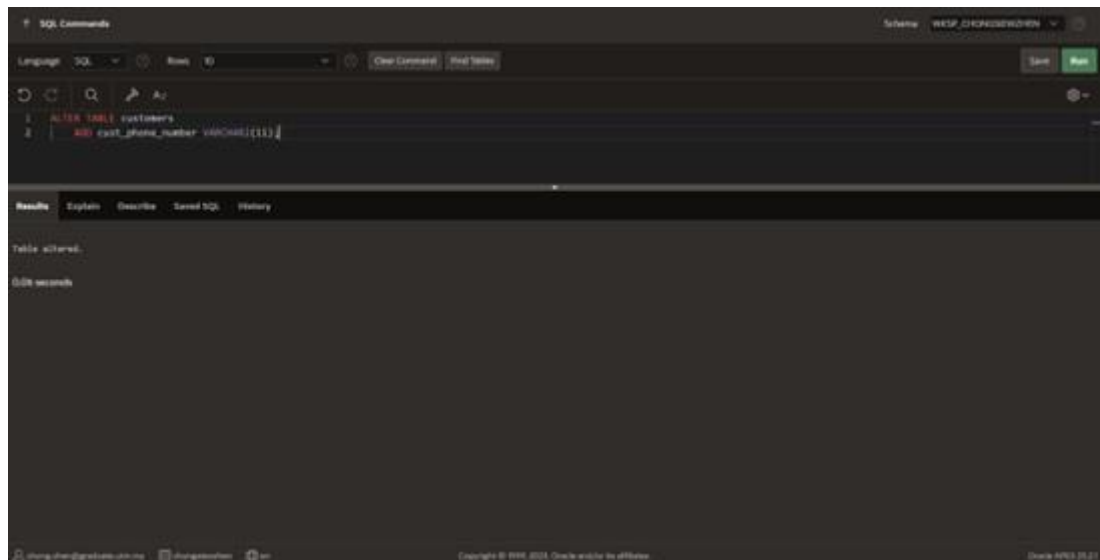
The client has decided that they would like a separate column for the customer's mobile phone number. This is an optional column that will be required to store 11 digits.

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

The screenshot shows the SQL Developer interface. At the top, the 'SQL Commands' window contains the command 'DESCRIBE customers;'. Below this, the 'Results' tab is active, displaying the table structure for the 'CUSTOMERS' table. The table has 10 columns: CUST_ID, EMAIL, FIRST_NAME, LAST_NAME, PHONE_NUMBER, CURRENT_BALANCE, SEX_ID, TEN_ID, and CREDIT_CARD_NUMBER. The data types and constraints are as follows:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CUST_ID	NUMBER	6			✓	✓		
	EMAIL	VARCHAR2	25				✓		
	FIRST_NAME	VARCHAR2	25				✓		
	LAST_NAME	VARCHAR2	25				✓		
	PHONE_NUMBER	NUMBER	15				✓		
	CURRENT_BALANCE	NUMBER		8	2		✓		
	SEX_ID	VARCHAR2	1				✓		
	TEN_ID	VARCHAR2	1				✓		
	CREDIT_CARD_NUMBER	VARCHAR2	16				✓		

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



The screenshot shows the SQL Developer interface with the 'ALTER TABLE customers ADD ext_phone_number VARCHAR2(11);' command entered in the SQL Commands window. The Results tab is active, displaying the message 'Table altered.' and the execution time '0.08 seconds'.

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

SQL Commands

Language: SQL Rows: 0

1 DESCRIBE customers;

Results Explain Describe Exec SQL History

Object Type: TABLE Object: CUSTOMERS

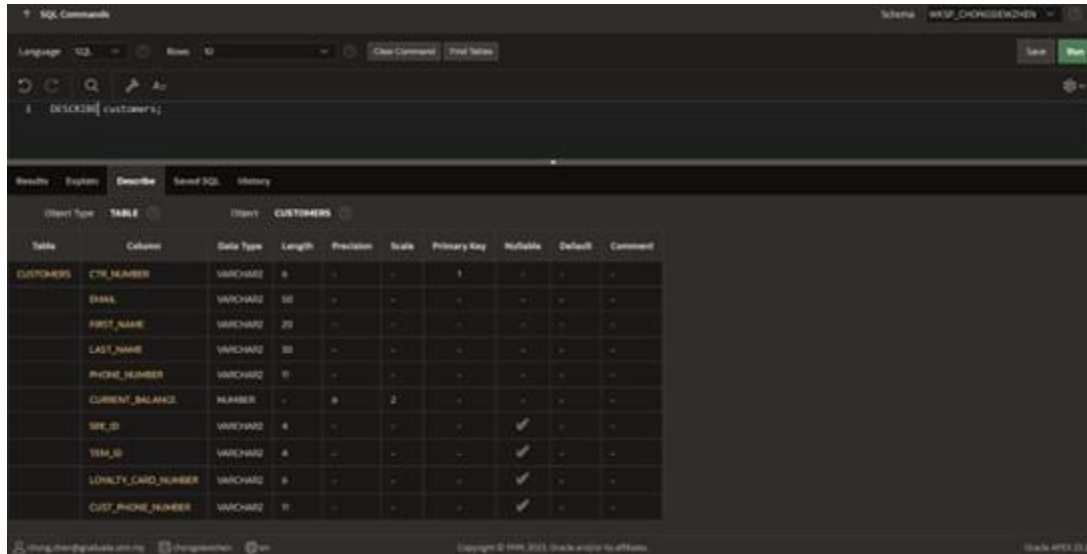
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CUST_NUMBER	NUMBER	9			✓			
	EMAIL	VARCHAR2	255						
	FIRST_NAME	VARCHAR2	20						
	LAST_NAME	VARCHAR2	20						
	PHONE_NUMBER	VARCHAR2	15						
	CURRENT_BALANCE	NUMBER	9	2					
	SMS_ID	VARCHAR2	4				✓		
	TSM_ID	VARCHAR2	4				✓		
	LOYALTY_CARD_NUMBER	VARCHAR2	9				✓		
	CUST_PHONE_NUMBER	VARCHAR2	15				✓		

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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.

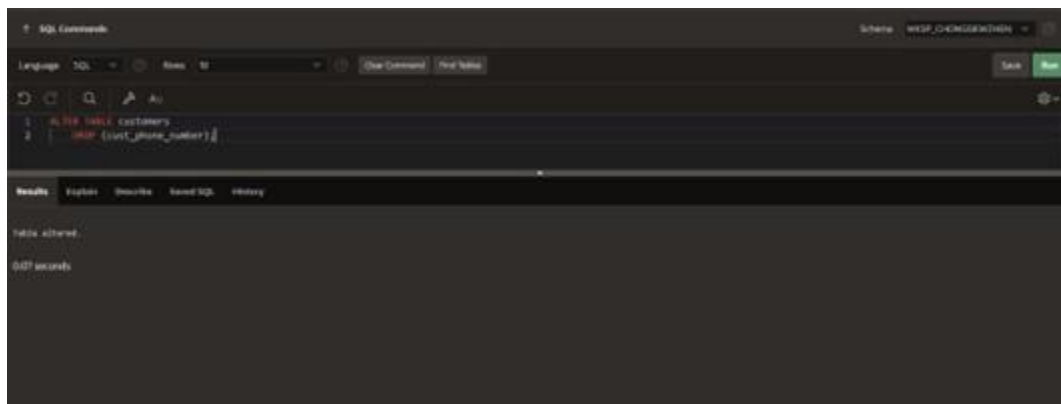
1. Run the DESCRIBE command on the customers table to view its structure.



The screenshot shows the SQL Developer interface with the command `DESCRIBE customers;` entered in the SQL Commands window. The Results window displays the table structure for the `CUSTOMERS` table.

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CUSTOMER_ID	NUMBER	8			1			
	EMAIL	VARCHAR2	50						
	FIRST_NAME	VARCHAR2	20						
	LAST_NAME	VARCHAR2	30						
	PHONE_NUMBER	VARCHAR2	15						
	CURRENT_BALANCE	NUMBER		8	2				
	SEX_ID	VARCHAR2	4						
	TECH_ID	VARCHAR2	4						
	LOYALTY_CARD_NUMBER	VARCHAR2	8						
	MOB_PHONE_NUMBER	VARCHAR2	15						

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



The screenshot shows the SQL Developer interface with the command `ALTER TABLE customers DROP (mob_phone_number);` entered in the SQL Commands window. The Results window displays the message "Table altered." and "0.07 seconds".

```
1 ALTER TABLE customers
2 DROP (mob_phone_number);
```

Table altered.
0.07 seconds

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

