

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 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 values : -99

— Highest values : 99

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

— Lowest values : -99999.99

— Highest values : 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.

```
-DESCRIBE orders;
```

```
150 DESCRIBE orders;
151
```

Results	Explain	Describe	Saved SQL	History					
Object Type		Object							
TABLE		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 DATE DEFAULT SYSDATE ;
```

```
1 ALTER TABLE orders
2 MODIFY odr_date DATE DEFAULT SYSDATE;
3
```

Results	Explain	Describe	Saved SQL	History
Table altered.				
0.06 seconds				

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

```
-DESCRIBE orders;
```

```
155 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	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.

-DESCRIBE customers ;

157 DESCRIBE customers;

ResultsExplainDescribeSaved SQLHistory

Object TypeTABLE

ObjectCUSTOMERS

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);
```

```
159 ALTER TABLE customers
160 ADD CONSTRAINT check_balance CHECK (current_balance >= 0);
```

Results Explain Describe Saved SQL History

Table altered.

0.06 seconds

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

- DESCRIBE customers ;

162 DESCRIBE customers;




ResultsExplainDescribeSaved SQLHistory

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	-	-	-		-	-

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.

CUSTOMERS									
Columns Data Indexes Constraints Grants Statistics Triggers Dependencies DDL Sample Queries									
+ Create ⌵ Drop ⌵ Enable ⌵ Disable ⌵ Refresh									
Constraint	Type	Search Condition	Related Constraint	Columns	Delete Rule	Status	Last Change	Index	Invalid
CHECK_BALANCE	Check	current_balance >= 0				ENABLED	11/09/2025		
SYS_C00149210317	Check	"CTR_NUMBER" IS NOT NULL				ENABLED	11/09/2025		
SYS_C00149210318	Check	"EMAIL" IS NOT NULL				ENABLED	11/09/2025		
SYS_C00149210319	Check	"FIRST_NAME" IS NOT NULL				ENABLED	11/09/2025		
SYS_C00149210320	Check	"LAST_NAME" IS NOT NULL				ENABLED	11/09/2025		
SYS_C00149210321	Check	"PHONE_NUMBER" IS NOT NULL				ENABLED	11/09/2025		
SYS_C00149210322	Check	"CURRENT_BALANCE" IS NOT NULL				ENABLED	11/09/2025		
CUSTOMER_SALES_REP_FK	Foreign		SALES_REPRESENTATIVE_PK (...)	SRE_ID	NO ACTION	ENABLED	11/09/2025		
CUSTOMER_TEAM_FK	Foreign		TEAM_PK (WKSP_ED0345.TEA...	TEM_ID	NO ACTION	ENABLED	11/09/2025		
CUSTOMER_PK	Primary			CTR_NUMBER		ENABLED	11/09/2025	CUSTOMER_PK	
CTR_EMAIL_UK	Unique			EMAIL		ENABLED	11/09/2025	CTR_EMAIL_UK	
CTR_LCN_UK	Unique			LOYALTY_CARD_NUMBER		ENABLED	11/09/2025	CTR_LCN_UK	

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.

-DESCRIBE customers ;

1 DESCRIBE customers;									
2									
Results Explain Describe Saved SQL History									
Object Type		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 column that will satisfy the clients requirements

```
- ALTER TABLE customers  
  ADD mobile_phone_number VARCHAR2(11);
```

```
3 ALTER TABLE customers  
4 ADD mobile_phone_number VARCHAR2(11);  
5
```

Results Explain Describe Saved SQL History

Table altered.

0.07 seconds

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

```
- DESCRIBE customers;
```

```
6 DESCRIBE customers;  
7
```

Object Type		Object							
TABLE		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_PHONE_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.

— DESCRIBE customers ;

8 DESCRIBE customers;

ResultsExplainDescribeSaved SQLHistory

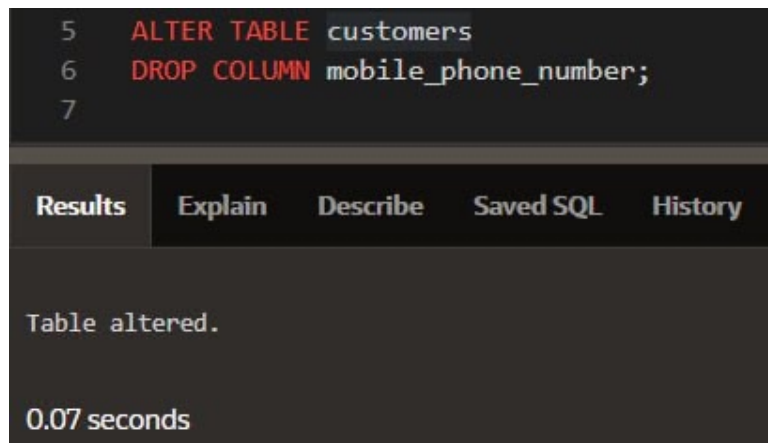
Object TypeTABLE

ObjectCUSTOMERS

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	-	-	-	✓	-	-

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

— ALTER TABLE customers
DROP COLUMN mobile_phone_number ;



5 ALTER TABLE customers
6 DROP COLUMN mobile_phone_number;
7

Results	Explain	Describe	Saved SQL	History
Table altered.				
0.07 seconds				

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

-DESCRIBE customers ;

13 DESCRIBE customers;
14
15

ResultsExplainDescribeSaved SQLHistory

Object TypeTABLE

ObjectCUSTOMERS

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	-	-	-	✓	-	-