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**Section : 01**

### **LAB1 - DDL**

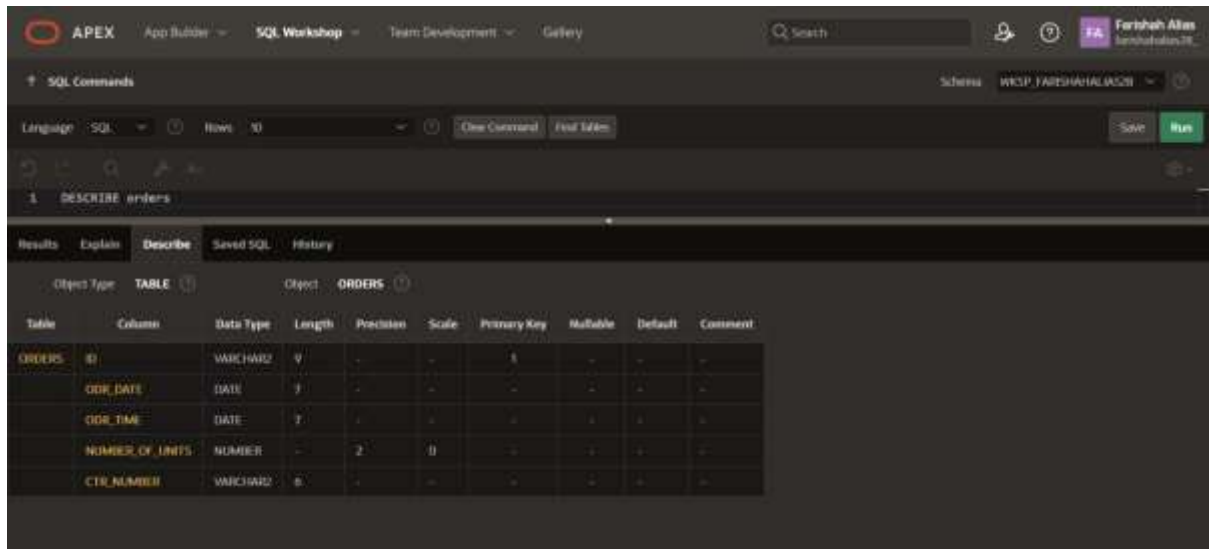
Part 1: Reading information from a script In this exercise you will use the "obl Sports.ddl" file to consolidate your knowledge of DDL. Open the "obl Sports.ddl" in a text editor.

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?**  
Lowest value: -99 , Highest value: 99
6. **What are the lowest and highest values that can be stored in the price column for the price\_history table?**  
Lowest value: -99999.99 , Highest value: 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

### Modifying a column

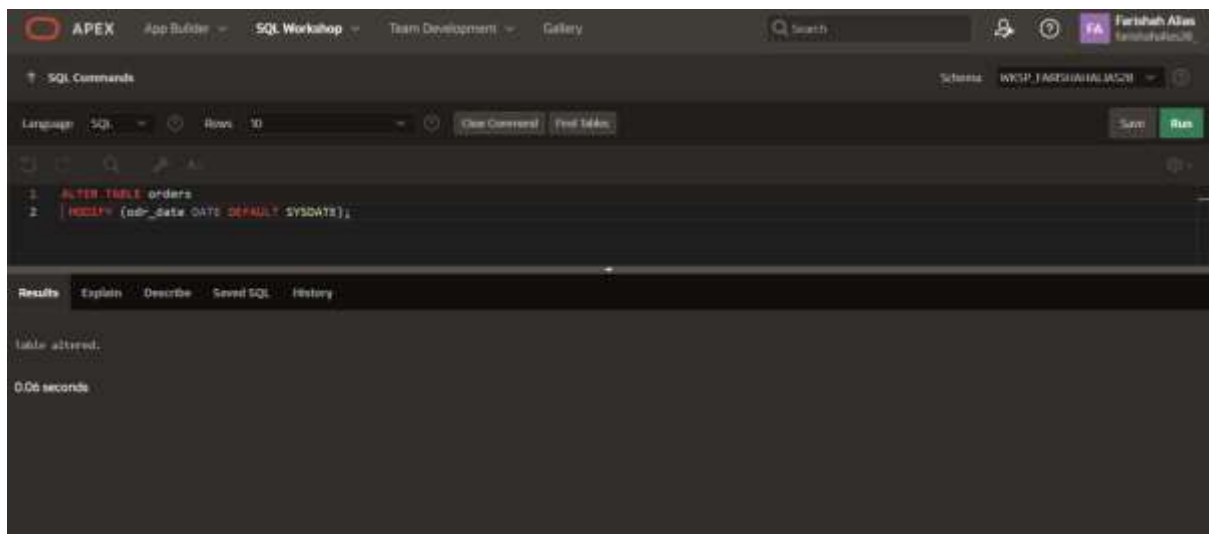
1. Run the DESCRIBE command on the orders table to view its structure.



The screenshot shows the APEX SQL Workshop interface. The 'SQL Commands' tab is active, and the command 'DESCRIBE orders' has been executed. The results are displayed in a table format under the 'Describe' tab.

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	8						

2. 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 following command has been executed:

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

The results show 'table altered.' and '0.06 seconds'.

### 3. Run the DESCRIBE command again

The screenshot shows the APEX SQL Workshop interface. The SQL Commands panel has the command `DESC orders` entered. The Results tab is active, displaying the structure of the `ORDERS` table. The table has five columns: `ID` (VARCHAR2, 4, Primary Key), `ORD_DATE` (DATE, 7, Default SYSDATE), `ORD_TIME` (DATE, 7), `NUMBER_OF_UNITS` (NUMBER, 2, 0), and `CTR_NUMBER` (VARCHAR2, 6).

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ORDERS	ID	VARCHAR2	4			1			
	ORD_DATE	DATE	7					SYSDATE	
	ORD_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.

The screenshot shows the APEX SQL Workshop interface. The SQL Commands panel has the command `DESC customers` entered. The Results tab is active, displaying the structure of the `CUSTOMERS` table. The table has six columns: `CTR_NUMBER` (VARCHAR2, 6, Primary Key), `EMAIL` (VARCHAR2, 50), `FIRST_NAME` (VARCHAR2, 20), `LAST_NAME` (VARCHAR2, 30), `PHONE_NUMBER` (VARCHAR2, 15), `CURRENT_BALANCE` (NUMBER, 8, 2), and `SSN_ID` (VARCHAR2, 4).

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	15						
	CURRENT_BALANCE	NUMBER		8	2				
	SSN_ID	VARCHAR2	4						

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

The screenshot shows the APEX SQL Workshop interface. The SQL command entered is:

```
1 ALTER TABLE customers
2 ADD CONSTRAINT check_current_balance CHECK (current_balance >= 0);
3
```

The command was executed successfully, resulting in the message: "Table altered." and a duration of "0.03 seconds".

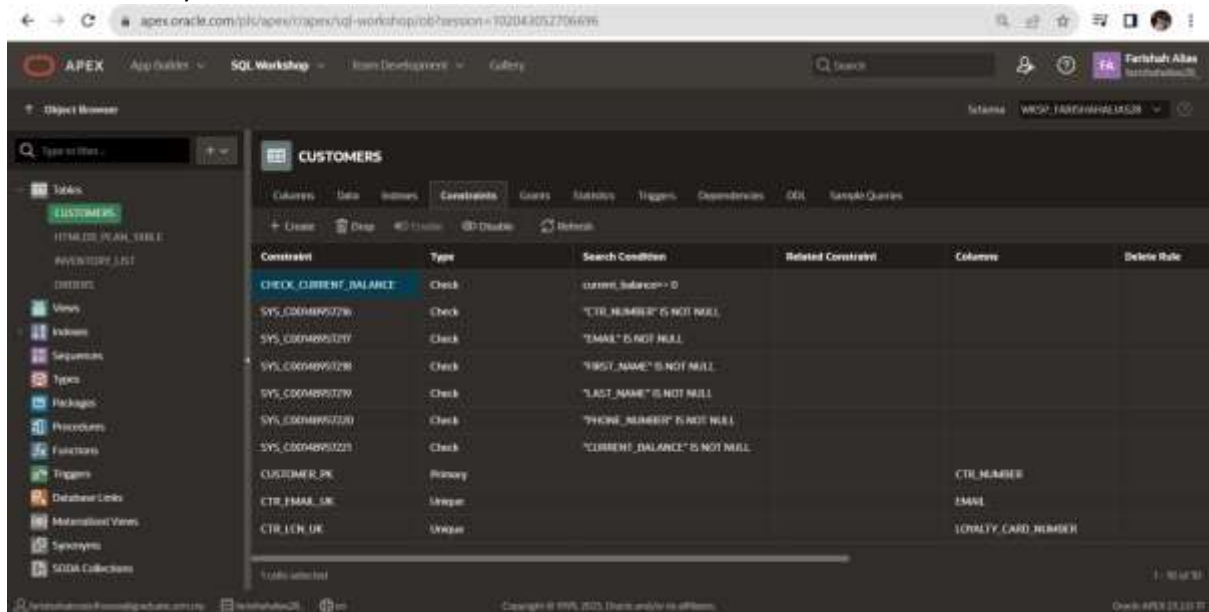
3. Run the DESCRIBE command again to verify the command was successful.

The screenshot shows the APEX SQL Workshop interface with the command `DESC customers` entered. The results are displayed in a table format, showing the structure of the `customers` table.

CUSTOMER	COL	TYPE	PK	FK	REF	PK	FK	REF
CUSTOMERS	CUSTOMER_ID	NUMBER	6			1		
	EMAIL	VARCHAR2	50					
	FIRST_NAME	VARCHAR2	30					
	LAST_NAME	VARCHAR2	30					
	PHONE_NUMBER	VARCHAR2	15					
	CURRENT_BALANCE	NUMBER	8	2				
	SIB_ID	VARCHAR2	4				✓	
	TEM_ID	VARCHAR2	4				✓	
	LOYALTY_CARD_NUMBER	VARCHAR2	6				✓	

4. check constraint is not shown in the results of a describe command.

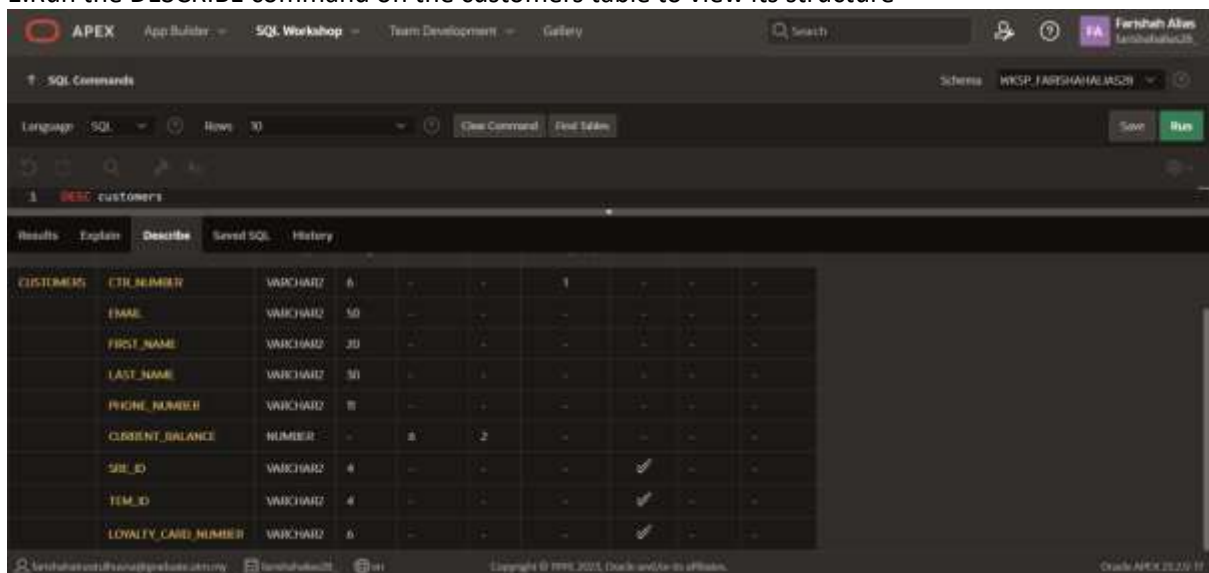
- Go to the Object Browser
- Select the customers table.
- Click on the CONSTRAINTS tab.
- You will see your constraint here.



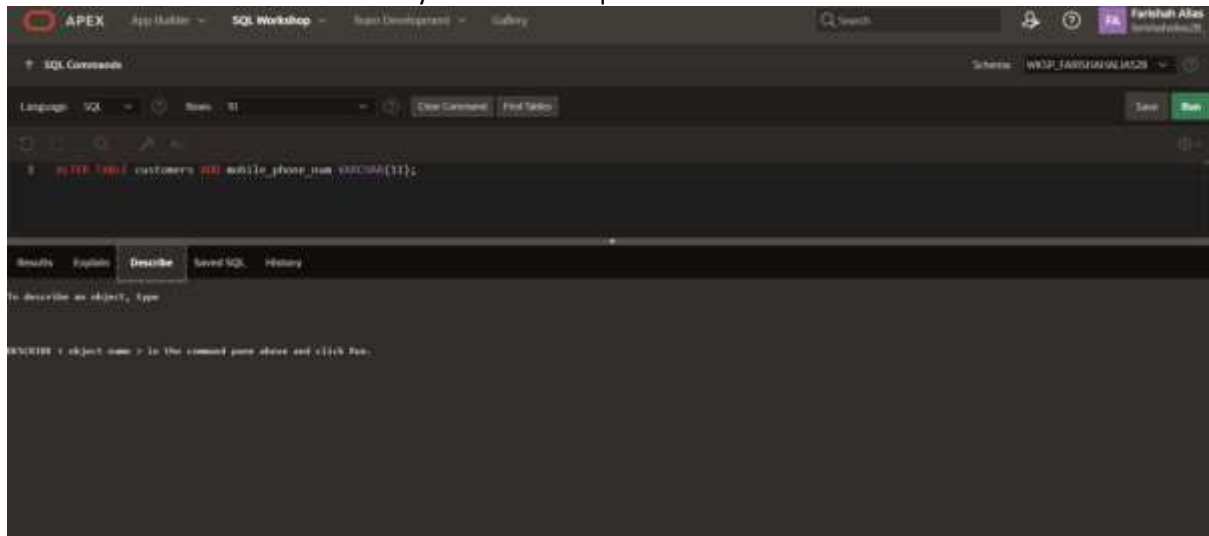
## Adding a column

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.

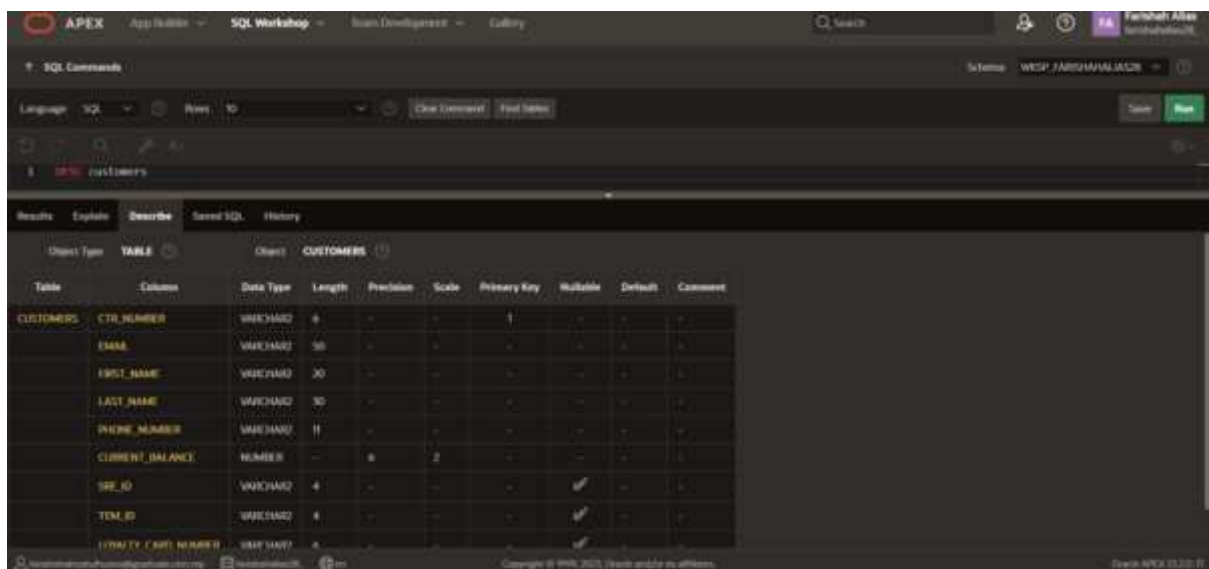
1.Run the DESCRIBE command on the customers table to view its structure



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



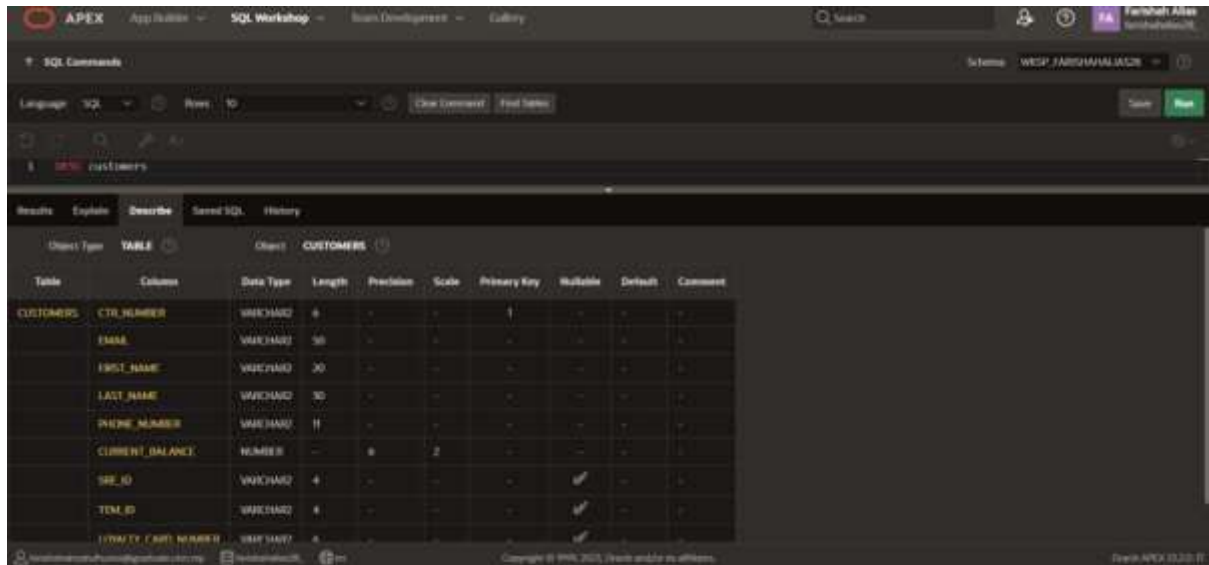
## 3. Run the DESCRIBE command on the customers table to view its structure



## 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.

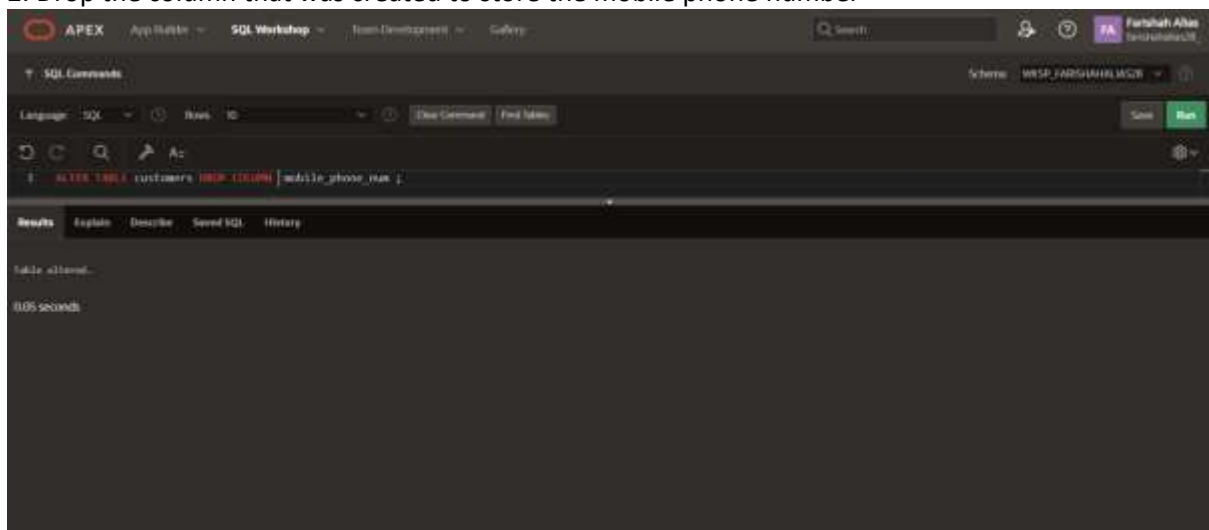
1. Run the DESCRIBE command on the customers table to view its structure.



The screenshot shows the APEX SQL Workshop interface. The 'SQL Commands' tab is active, and the 'DESCRIBE' command has been executed on the 'customers' table. The results are displayed in a table format.

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CUSTOMER_ID	NUMBER	4			✓	✓		
	EMAIL	VARCHAR2	50			✓	✓		
	FIRST_NAME	VARCHAR2	30			✓	✓		
	LAST_NAME	VARCHAR2	30			✓	✓		
	PHONE_NUMBER	VARCHAR2	15			✓	✓		
	CURRENT_BALANCE	NUMBER		8	2	✓	✓		
	SEX_ID	VARCHAR2	4			✓	✓		
	TEN_ID	VARCHAR2	4			✓	✓		
	CITY_ID (NOT NULL)	VARCHAR2	4			✓	✓		

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



The screenshot shows the APEX SQL Workshop interface. The 'SQL Commands' tab is active, and the 'ALTER TABLE' command has been executed to drop the 'mobile\_phone' column from the 'customers' table. The results are displayed in a table format.

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CUSTOMER_ID	NUMBER	4			✓	✓		
	EMAIL	VARCHAR2	50			✓	✓		
	FIRST_NAME	VARCHAR2	30			✓	✓		
	LAST_NAME	VARCHAR2	30			✓	✓		
	PHONE_NUMBER	VARCHAR2	15			✓	✓		
	CURRENT_BALANCE	NUMBER		8	2	✓	✓		
	SEX_ID	VARCHAR2	4			✓	✓		
	TEN_ID	VARCHAR2	4			✓	✓		
	CITY_ID (NOT NULL)	VARCHAR2	4			✓	✓		

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

The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. A search bar is on the right. Below the navigation bar, the 'SQL Commands' tab is active, showing a command prompt with 'DESCRIBE customers' entered. The 'Run' button is highlighted. The results pane shows the table structure for 'CUSTOMERS'.

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CUSTOMER_ID	NUMBER	4			✓	✓		
	EMAIL	VARCHAR2	50				✓		
	FIRST_NAME	VARCHAR2	35				✓		
	LAST_NAME	VARCHAR2	35				✓		
	PHONE_NUMBER	VARCHAR2	15				✓		
	CURRENT_BALANCE	NUMBER		9	2		✓		
	SEX_ID	VARCHAR2	4				✓		
	TEN_ID	VARCHAR2	4				✓		
	LOYALTY_CARD_NUMBER	VARCHAR2	4				✓		

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