



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

SECD2523-01 - DATABASE  
SEMESTER 1 (2023/2024)  
LAB 1 : DATA DEFINITION LANGUAGE

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## 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\\_fk](#)

5. What are the lowest and highest values that can be stored in the commission\_rate column for the sales\_representatives table?

[Highest value = 99](#)

[Lowest value = -99](#)

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

[Highest value = 99.99](#)

[Lowest value = -99.99](#)

7. What are the 3 columns that make up the primary key for the price\_history table?

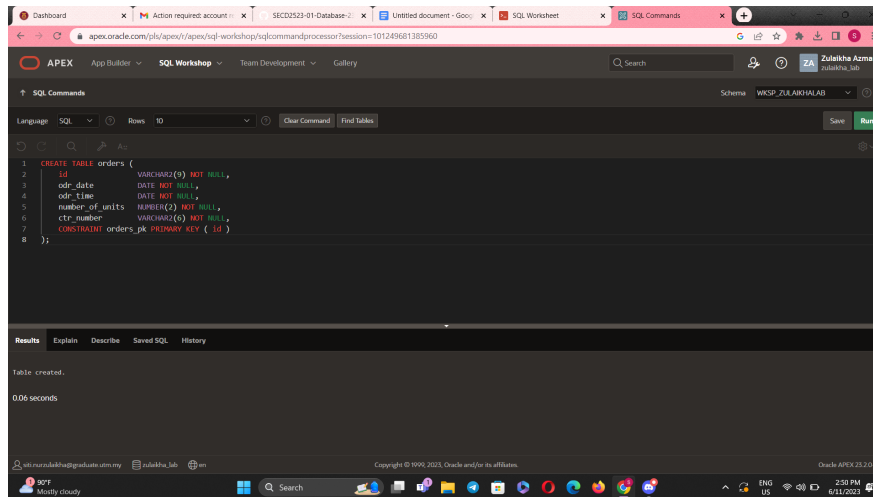
[itm\\_number, start\\_date, start\\_time](#)

## 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.

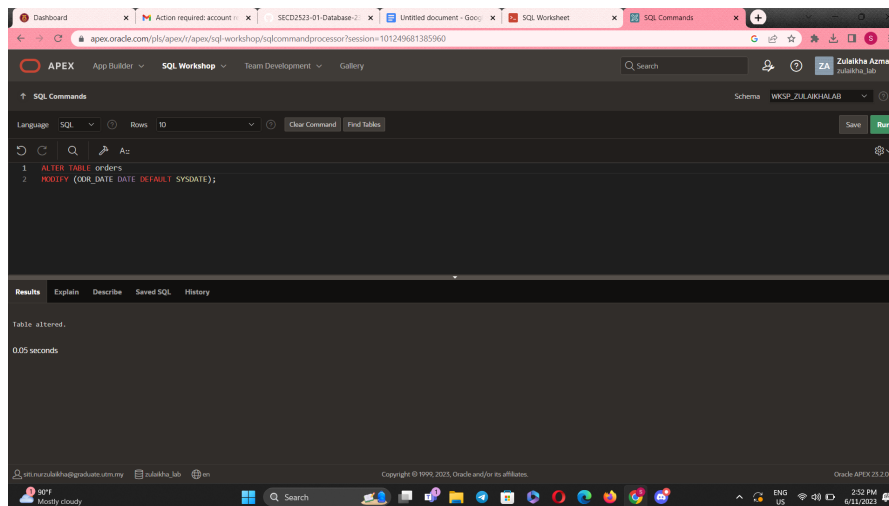


The screenshot shows the APEX SQL Commands interface. The SQL command entered is:

```
1 CREATE TABLE orders (  
2   id VARCHAR2(8) NOT NULL,  
3   odr_date DATE NOT NULL,  
4   odr_time DATE NOT NULL,  
5   number_of_units NUMBER(2) NOT NULL,  
6   ctr_number VARCHAR2(6) NOT NULL,  
7   CONSTRAINT orders_pk PRIMARY KEY ( id )  
8 );
```

The results pane shows: "Table created." and "0.06 seconds".

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 interface. The SQL command entered is:

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

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

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

The screenshot shows the Oracle APEX SQL Workshop interface. The SQL Commands pane contains the command `DESC orders;`. The Results pane displays the structure of the `ORDERS` table:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ORDERS	ID	VARCHAR2	9	-	-	1	-	-	-
	ORD_DATE	DATE	7	-	-	-	-	SYSDATE	-
	ORD_TIME	DATE	7	-	-	-	-	-	-
	NUMBER_OF_UNITS	NUMBER	-	2	0	-	-	-	-
	CTR_NUMBER	VARCHAR2	6	-	-	-	-	-	-

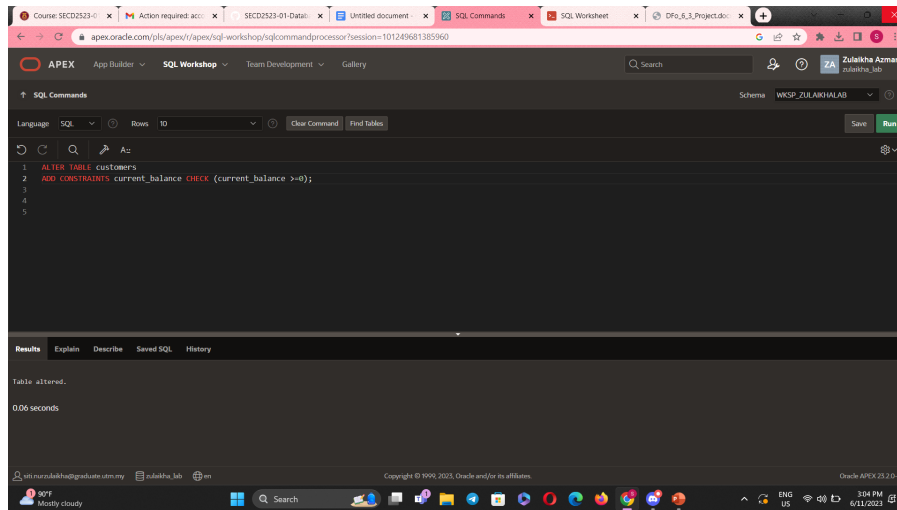
## Adding a check constraint

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

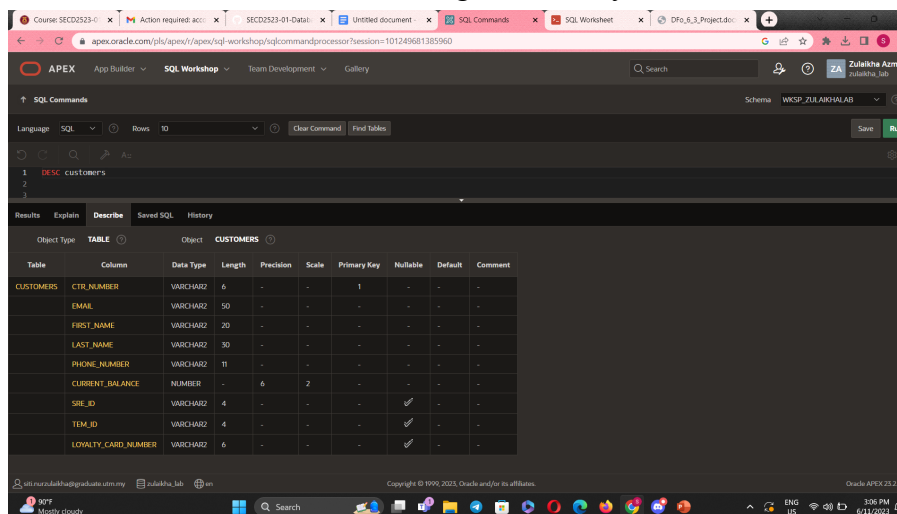
The screenshot shows the Oracle APEX SQL Workshop interface. The SQL Commands pane contains the command `DESC customers;`. The Results pane displays the structure of the `CUSTOMERS` table:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	ID	VARCHAR2	9	-	-	1	-	-	-
	first_name	VARCHAR2	20	-	-	-	-	-	-
	last_name	VARCHAR2	30	-	-	-	-	-	-
	phone_number	VARCHAR2	15	-	-	-	-	-	-
	current_balance	NUMBER	6,2	-	-	-	-	-	-
	sre_id	VARCHAR2	4	-	-	-	-	-	-

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

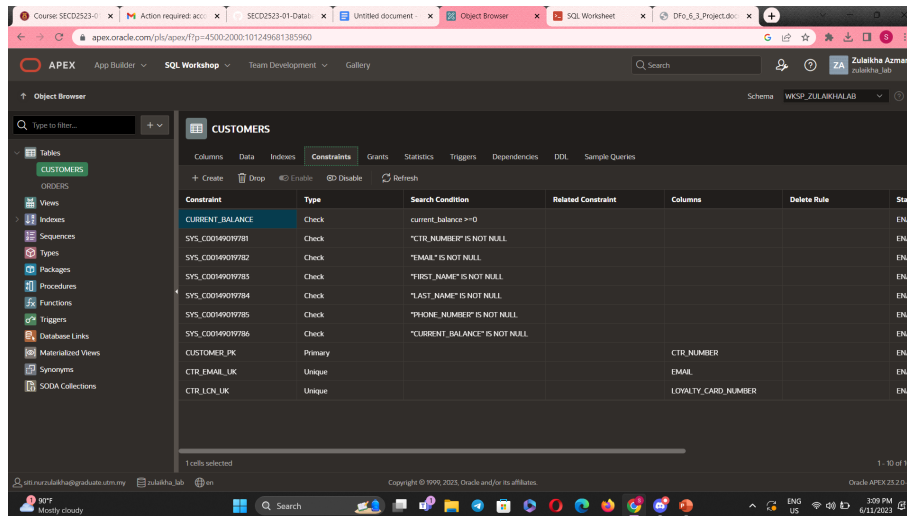


3. Run the DESCRIBE command again to verify the command was successful.



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

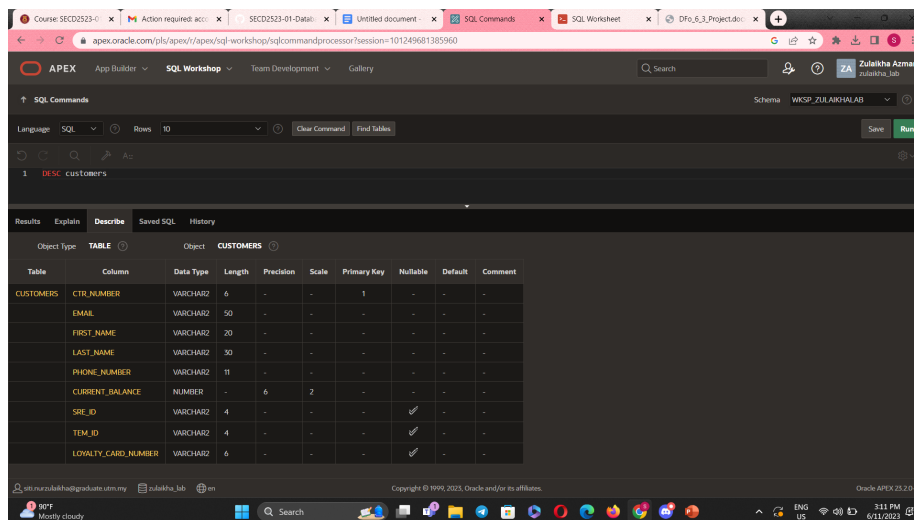
- Go to the Object Browser
- Select the customers table.
- Click on the CONSTRAINTS tab.
- You will see your constraint here.



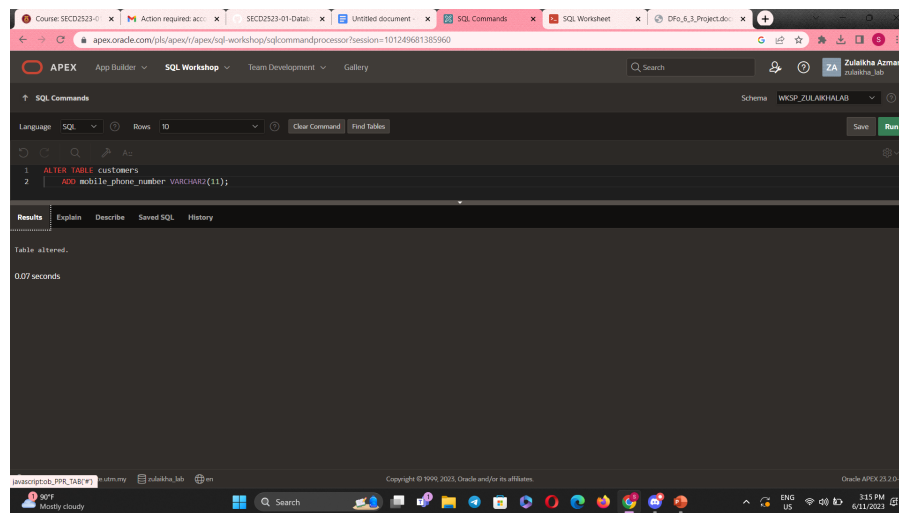
## Adding a column

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.

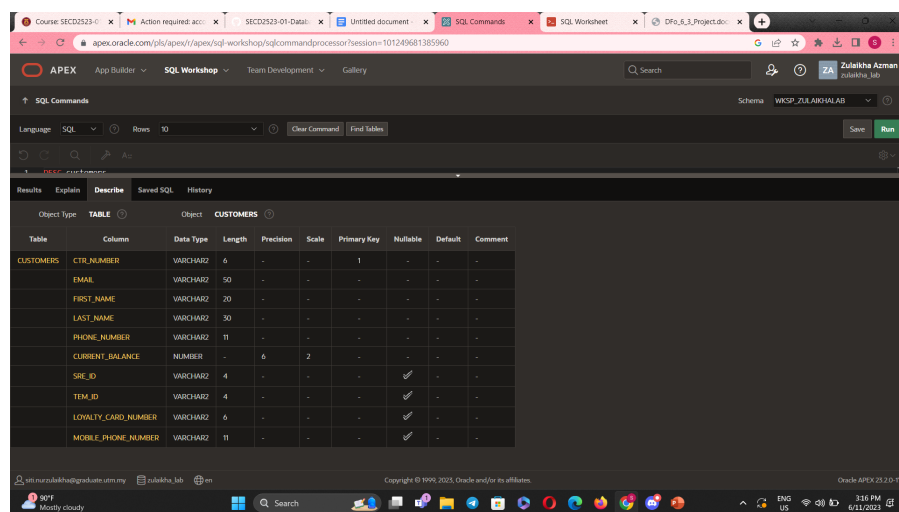
1. Run the DESCRIBE command on the customers table to view its structure.



## 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.

Course: SEC2523-2

Action required: a

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SQL Commands

Dfco\_6\_3\_Project

apex.oracle.com/pls/apex/f/apex-workshop/sqlcommandprocessor/session=101249681385960

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SQL Commands

Schema

WZSP\_ZLR.AKH.HALABI

Save

Run

Language

SQL

Rows

10

Clear Command

Find Tables

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	-	-	-	-
	SSE_ID	VARCHAR2	4	-	-	-	✓	-	-
	TEM_ID	VARCHAR2	4	-	-	-	✓	-	-
	LOYALTY_CARD_NUMBER	VARCHAR2	6	-	-	-	✓	-	-
	MOBILE_PHONE_NUMBER	VARCHAR2	11	-	-	-	✓	-	-

Get our new zuleika.azman@graduate.com.my

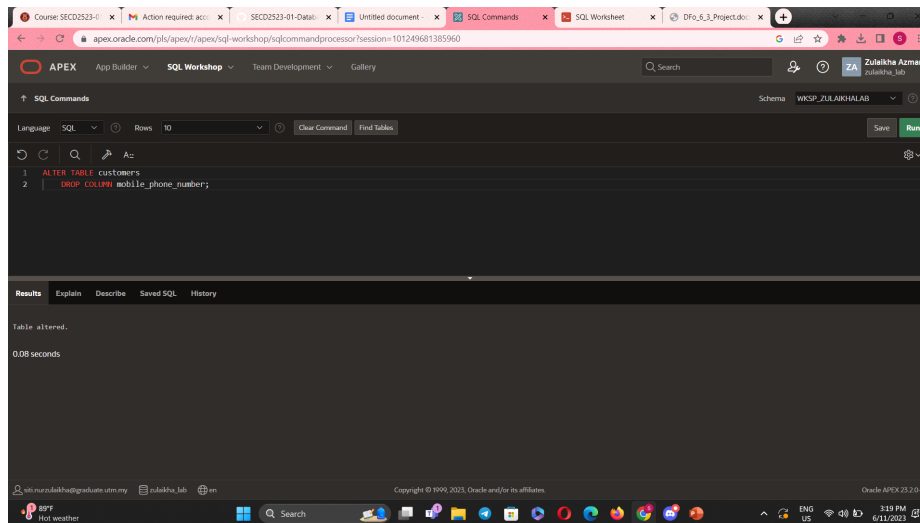
zuleika.azm

en

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Oracle APEX 23.2.0

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



The screenshot shows the Oracle APEX SQL Workshop interface. The 'SQL Commands' tab is active, and the 'Results' sub-tab is selected. The command 'ALTER TABLE customers DROP COLUMN mobile\_phone\_number;' has been executed, and the results are displayed in a table format.

Results	Explain	Describe	Saved SQL	History
Table altered.				
0.08 seconds				



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

The screenshot shows the Oracle APEX SQL Workshop interface. The SQL Command area contains the text `DESC customers`. The Results tab is active, displaying the structure of the **CUSTOMERS** table. The table has 10 columns: CTR\_NUMBER, EMAIL, FIRST\_NAME, LAST\_NAME, PHONE\_NUMBER, CURRENT\_BALANCE, SIE\_ID, TEM\_ID, LOWLY\_CARD\_NUMBER, and an unnamed primary key column. The data types and constraints are as follows:

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	-	-	-	-
	SIE_ID	VARCHAR2	4	-	-	-	✓	-	-
	TEM_ID	VARCHAR2	4	-	-	-	✓	-	-
	LOWLY_CARD_NUMBER	VARCHAR2	6	-	-	-	✓	-	-

The interface also shows the user **Zulakha Azman** and the schema **WKSP\_ZULAKHALAB**. The bottom status bar indicates the user is logged in from **en** and the system time is **3:20 PM 6/11/2023**.