

NAME: NUR HIDAYAH BINTI ROSMADE
MATRIC NO: A22EC0246

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?
[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 and 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 top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. A search bar and user profile 'Nur Hidayah ndayah15' are on the right. Below the navigation bar, the 'SQL Commands' section is active, showing a schema dropdown set to 'WKSP_NDAYAH15'. The command area contains the text 'desc orders'. The results pane below shows the 'Describe' tab selected, displaying 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 with the 'SQL Commands' section. The command area contains the following SQL code:

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

The results pane below shows the 'Results' tab selected, displaying the message 'Table altered.' and the execution time '0.06 seconds'.

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

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 and user profile 'Nur Hidayah ndayah15' are on the right. The 'SQL Commands' section shows the command 'desc orders' entered. The 'Describe' tab is active, displaying 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	-	-	-	-	SYSDATE	-
	ODR_TIME	DATE	7	-	-	-	-	-	-
	NUMBER_OF_UNITS	NUMBER	-	2	0	-	-	-	-
	CTR_NUMBER	VARCHAR2	6	-	-	-	-	-	-

The footer shows the user 'nrhidayh2003@gmail.com', session 'ndayah15', and 'Oracle APEX 23.2.0-17'.

Adding a check constraint

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

The screenshot shows the APEX SQL Workshop interface. The top navigation bar is the same as the previous screenshot. The 'SQL Commands' section shows the command 'desc customers' entered. The 'Describe' tab is active, displaying the structure of 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	-	-	-	✓	-	-

The footer shows the user 'nrhidayh2003@gmail.com', session 'ndayah15', and 'Oracle APEX 23.2.0-17'.

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

The screenshot shows the Oracle APEX SQL Workshop interface. The 'SQL Commands' tab is active, displaying the following SQL command:

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

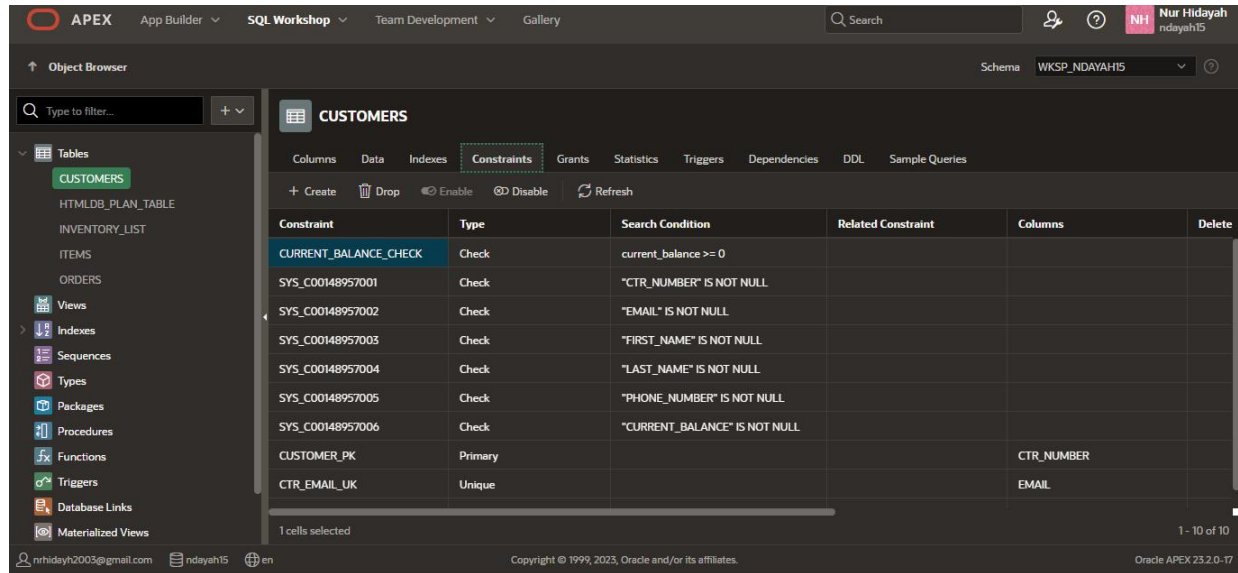
The 'Run' button is highlighted in green. Below the command editor, the 'Results' tab is selected, showing the message 'Table altered.' and the execution time '0.04 seconds'.

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

The screenshot shows the Oracle APEX SQL Workshop interface with the 'DESCRIBE' command executed. The 'Results' tab is active, displaying a table with the following 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	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	-	-	-	✓	-	-

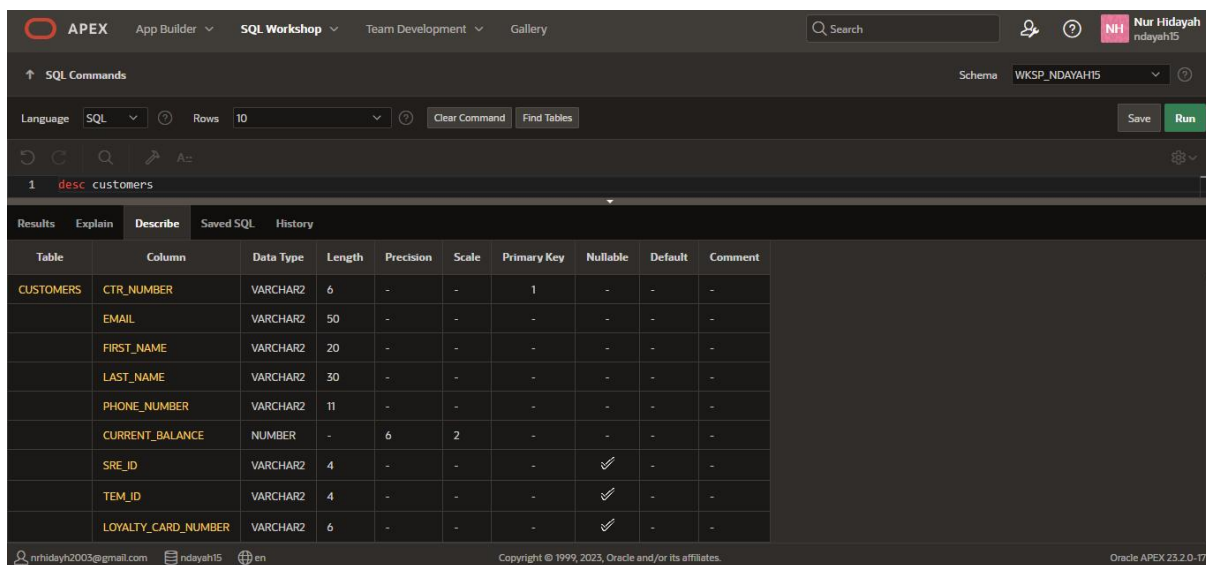
4. A check constraint is not shown in the results of a describe command.
 - a. Go to the Object Browser
 - b. Select the customers table.
 - c. Click on the CONSTRAINTS tab.
 - d. You will see your constraint here.



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

APEX

App Builder

SQL Workshop

Team Development

Gallery

Search

NH

Nur Hidayah

ndayah15

SQL Commands

SchemaWKSP_NDAYAH15

LanguageSQL

Rows10

Clear Command

Find Tables

Save

Run

1ALTER TABLE customers

2Add mobile_phone_number VARCHAR(11);

Results

Explain

Describe

Saved SQL

History

Table altered.

0.07 seconds

nrhdayh2003@gmail.com

ndayah15

en

Copyright © 1999, 2023, Oracle and/or its affiliates.

Oracle APEX 23.2.0-17

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

APEX

App Builder

SQL Workshop

Team Development

Gallery

Search

NH

Nur Hidayah

ndayah15

SQL Commands

SchemaWKSP_NDAYAH15

LanguageSQL

Rows10

Clear Command

Find Tables

Save

Run

1desc customers

Results

Explain

Describe

Saved SQL

History

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	-	-	-	✓	-	-

nrhdayh2003@gmail.com

ndayah15

en

Copyright © 1999, 2023, Oracle and/or its affiliates.

Oracle APEX 23.2.0-17

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 panel at the top contains the command `desc customers`. The Results panel below shows the table structure for the `CUSTOMERS` table. The table has 10 columns: `CTR_NUMBER`, `EMAIL`, `FIRST_NAME`, `LAST_NAME`, `PHONE_NUMBER`, `CURRENT_BALANCE`, `SRE_ID`, `TEM_ID`, `LOYALTY_CARD_NUMBER`, and `MOBILE_PHONE_NUMBER`. The data types and constraints are listed for each column.

CUSTOMERS	CTR_NUMBER	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBER	CURRENT_BALANCE	SRE_ID	TEM_ID	LOYALTY_CARD_NUMBER	MOBILE_PHONE_NUMBER
	VARCHAR2	VARCHAR2	VARCHAR2	VARCHAR2	VARCHAR2	NUMBER	VARCHAR2	VARCHAR2	VARCHAR2	VARCHAR2
	6	50	20	30	11	-	4	4	6	11
	-	-	-	-	-	6	-	-	-	-
	-	-	-	-	-	2	-	-	-	-
	-	-	-	-	-	-	✓	✓	✓	✓
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-

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

The screenshot shows the APEX SQL Workshop interface. The SQL Commands panel at the top contains the command `ALTER TABLE customers DROP COLUMN mobile_phone_number`. The Results panel below shows the message "Table altered." and the execution time "0.06 seconds".

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

APEX

App Builder

SQL Workshop

Team Development

Gallery

Search

NH

Nur Hidayah

ndayah15

SQL Commands

Schema WKSP_NDAYAH15

Language SQL Rows 10 Clear Command Find Tables Save Run

1 desc customers

Results Explain Describe Saved SQL History

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	-	-	-	✓	-	-

nurhidayah2005@gmail.com

ndayah15

en

Copyright © 1999, 2023, Oracle and/or its affiliates.

Oracle APEX 23.2.0-17

