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LAB 1 DDL

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Course Code	SECD2523
Section	08

Section 6 Lesson 3 Exercise : Data Definition Language

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” 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 : -99

Highest: 99

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

Lowest : -99999.99

Highest : 99999.99

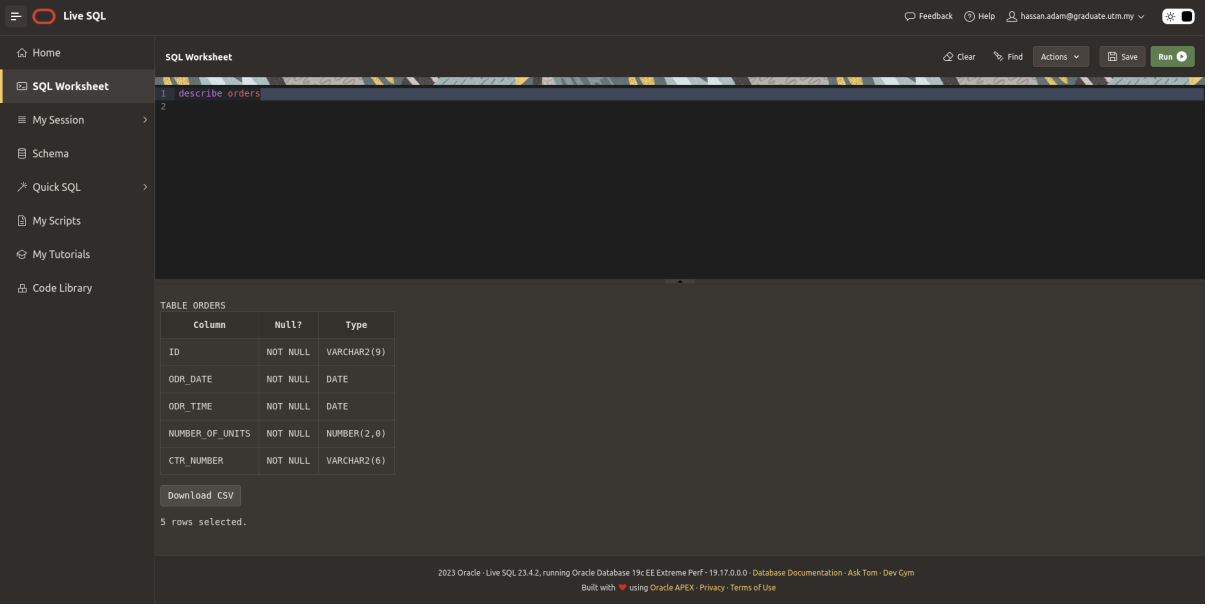
7. What are the 3 columns that make up the primary key for the price_history table?

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 Oracle Live SQL interface. The SQL Worksheet contains the command `describe orders`. Below the worksheet, the structure of the ORDERS table is displayed as a table with 5 rows selected.

Column	Null?	Type
ID	NOT NULL	VARCHAR2(9)
ODR_DATE	NOT NULL	DATE
ODR_TIME	NOT NULL	DATE
NUMBER_OF_UNITS	NOT NULL	NUMBER(2,0)
CTR_NUMBER	NOT NULL	VARCHAR2(6)

Download CSV
5 rows selected.

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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_TIME DATE DEFAULT SYSDATE;
```

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

The screenshot shows the 'Live SQL' web application interface. The left sidebar contains navigation links: Home, SQL Worksheet, My Session, Schema, Quick SQL, My Scripts, My Tutorials, and Code Library. The main area is titled 'SQL Worksheet' and contains a text editor with the command `DESCRIBE orders`. Below the editor, the results of the command are displayed as a table:

Column	Null?	Type
ID	NOT NULL	VARCHAR2(9)
ODR_DATE	NOT NULL	DATE
ODR_TIME	NOT NULL	DATE
NUMBER_OF_UNITS	NOT NULL	NUMBER(2,0)
CTR_NUMBER	NOT NULL	VARCHAR2(6)

Below the table, there is a 'Download CSV' button and the text '5 rows selected.' At the bottom of the interface, a footer line reads: '2023 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym Built with using Oracle APEX - Privacy - Terms of Use'.

Adding a check constraint

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

The screenshot shows the 'Live SQL' web application interface. The left sidebar contains navigation links: Home, SQL Worksheet, My Session, Schema, Quick SQL, My Scripts, My Tutorials, and Code Library. The main area is titled 'SQL Worksheet' and contains a text editor with the command `DESCRIBE customers`. Below the editor, the results of the command are displayed as a table:

Column	Null?	Type
CTR_NUMBER	NOT NULL	VARCHAR2(6)
EMAIL	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(30)
PHONE_NUMBER	NOT NULL	VARCHAR2(11)
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)
SRE_ID	-	VARCHAR2(4)
TER_ID	-	VARCHAR2(4)
LOYALTY_CARD_NUMBER	-	VARCHAR2(6)

Below the table, there is a 'Download CSV' button and the text '9 rows selected.' At the bottom of the interface, a footer line reads: '2023 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym Built with using Oracle APEX - Privacy - Terms of Use'.

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

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

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

The screenshot shows the Live SQL interface with the SQL Worksheet tab active. The command `DESCRIBE customers` has been executed, and the results are displayed in a table format. The table has three columns: Column, Null?, and Type. The rows list the columns of the customers table: CTR_NUMBER, EMAIL, FIRST_NAME, LAST_NAME, PHONE_NUMBER, CURRENT_BALANCE, SRE_ID, TEN_ID, and LOYALTY_CARD_NUMBER. The CURRENT_BALANCE column is highlighted in blue. Below the table, there is a 'Download CSV' button and a message '9 rows selected.'.

Column	Null?	Type
CTR_NUMBER	NOT NULL	VARCHAR2(6)
EMAIL	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(30)
PHONE_NUMBER	NOT NULL	VARCHAR2(11)
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)
SRE_ID	-	VARCHAR2(4)
TEN_ID	-	VARCHAR2(4)
LOYALTY_CARD_NUMBER	-	VARCHAR2(6)

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

Live SQL

Schema: CUSTOMERS

Show All Columns Constraints Related Constraints Triggers Indexes Code

9 LOYALTY_CARD_NUMBER VARCHAR2 6 Yes Byte

Constraints

Constraint	Type	Condition	Related Constraint	Related Table	Constraint Columns	On Delete	Status	Last Change	Invalid?
MIRL_CURRENT_BALANCE	Check	current_balance >= 0	-	-	-	-	ENABLED	3 minutes ago	-
SYS_C00143906715	Check	"CTR_NUMBER" IS NOT NULL	-	-	-	-	ENABLED	37 minutes ago	-
SYS_C00143906716	Check	"EMAIL" IS NOT NULL	-	-	-	-	ENABLED	37 minutes ago	-
SYS_C00143906717	Check	"FIRST_NAME" IS NOT NULL	-	-	-	-	ENABLED	37 minutes ago	-
SYS_C00143906718	Check	"LAST_NAME" IS NOT NULL	-	-	-	-	ENABLED	37 minutes ago	-
SYS_C00143906719	Check	"PHONE_NUMBER" IS NOT NULL	-	-	-	-	ENABLED	37 minutes ago	-
SYS_C00143906720	Check	"CURRENT_BALANCE" IS NOT NULL	-	-	-	-	ENABLED	37 minutes ago	-
CUSTOMER_SALES_REP_FK	Foreign Key	-	SALES_REPRESENTATIVE_PK	SALES_REPRESENTATIVES	SRE_ID	NO ACTION	ENABLED	37 minutes ago	-
CUSTOMER_TEAM_FK	Foreign Key	-	TEAM_PK	TEAMS	TEM_ID	NO ACTION	ENABLED	37 minutes ago	-
CUSTOMER_PK	Primary Key	-	-	-	CUSTOMER_ID	-	ENABLED	37 minutes ago	-
CTR_EMAIL_UK	Unique Key	-	-	-	EMAIL	-	ENABLED	37 minutes ago	-
CTR_LCN_UK	Unique Key	-	-	-	LOYALTY_CARD_NUMBER	-	ENABLED	37 minutes ago	-

Related Constraints

Table	Constraint	Type	Column
CUSTOMERS_ADDRESSES	CUSTOMER_ADDRESS_CUSTOMER_FK	Foreign Key	CTR_NUMBER
ORDERS	ORDER_CUSTOMER_FK	Foreign Key	CTR_NUMBER

Triggers

No triggers defined.

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.

Live SQL

SQL Worksheet

1 DESCRIBE customers

2

TABLE CUSTOMERS

Column	Null?	Type
CTR_NUMBER	NOT NULL	VARCHAR2(6)
EMAIL	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(30)
PHONE_NUMBER	NOT NULL	VARCHAR2(11)
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)
SRE_ID	-	VARCHAR2(4)
TEM_ID	-	VARCHAR2(4)
LOYALTY_CARD_NUMBER	-	VARCHAR2(6)

Download CSV

9 rows selected.

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

```
ALTER TABLE customers ADD cust_phone_num VARCHAR2(11);
```

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

Live SQL

FeedbackHelphassan.adam@graduate.utm.my

Home

SQL Worksheet

ClearFindActionsSaveRun

SQL Worksheet

1DESCRIBE customers

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

TABLE CUSTOMERS

Column	Null?	Type
CTR_NUMBER	NOT NULL	VARCHAR2(6)
EMAIL	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(30)
PHONE_NUMBER	NOT NULL	VARCHAR2(11)
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)
SRE_ID	-	VARCHAR2(4)
TEH_ID	-	VARCHAR2(4)
LOYALTY_CARD_NUMBER	-	VARCHAR2(6)
CUST_PHONE_NUM	-	VARCHAR2(11)

Download CSV

10 rows selected.

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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.

Live SQL

FeedbackHelphassan.adam@graduate.utm.my

Home

SQL Worksheet

ClearFindActionsSaveRun

SQL Worksheet

1DESCRIBE customers

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

TABLE CUSTOMERS

Column	Null?	Type
CTR_NUMBER	NOT NULL	VARCHAR2(6)
EMAIL	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(30)
PHONE_NUMBER	NOT NULL	VARCHAR2(11)
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)
SRE_ID	-	VARCHAR2(4)
TEH_ID	-	VARCHAR2(4)
LOYALTY_CARD_NUMBER	-	VARCHAR2(6)
CUST_PHONE_NUM	-	VARCHAR2(11)

Download CSV

10 rows selected.

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

```
ALTER TABLE customers DROP (cust_phone_num)
```

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

The screenshot shows the Live SQL web application interface. The top navigation bar includes 'Home', 'SQL Worksheet', 'My Session', 'Schema', 'Quick SQL', 'My Scripts', 'My Tutorials', and 'Code Library'. The 'SQL Worksheet' tab is active, displaying the command 'DESCRIBE customers'. Below the command, the results of the DESCRIBE command are shown in a table format.

Column	Null?	Type
CTR_NUMBER	NOT NULL	VARCHAR2(6)
EMAIL	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(20)
LAST_NAME	NOT NULL	VARCHAR2(30)
PHONE_NUMBER	NOT NULL	VARCHAR2(11)
CURRENT_BALANCE	NOT NULL	NUMBER(6,2)
SRE_ID	-	VARCHAR2(4)
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LOYALTY_CARD_NUMBER	-	VARCHAR2(6)

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