



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Faculty of
Computer Science
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Systems

UNIVERSITI TEKNOLOGI MALAYSIA, JOHOR BAHRU

FACULTY OF COMPUTING

SECD2523-08 DATABASE

Lab 1: Data Definition Language (DDL)

Name	Matric Number
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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

2. How many columns are created for the price history table?

6

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: -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

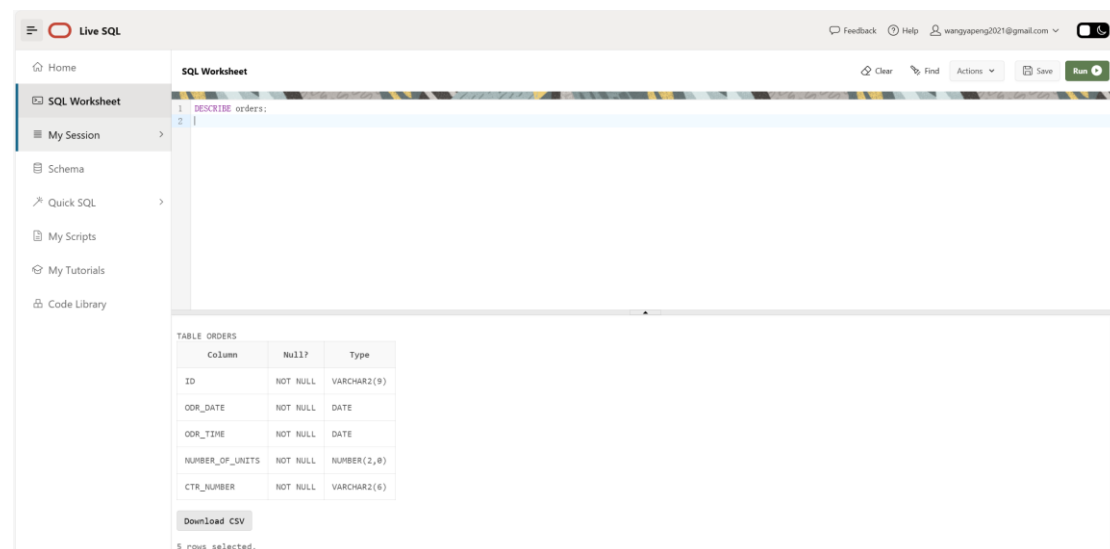
7. What are the 3 columns that make up the primary key for the price_history table?

itm_number, start_date, start_time

Part 2 : Updating Constraints

Modifying a column

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



The screenshot shows the 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.

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;`

SQL Worksheet

```

1 DESCRIBE orders;
2 ALTER TABLE orders
3   MODIFY odr_date DATE DEFAULT SYSDATE;
4

```

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.
Table altered.

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

SQL Worksheet

```

1 DESCRIBE orders;
2 ALTER TABLE orders
3   MODIFY odr_date DATE DEFAULT SYSDATE;
4 DESCRIBE orders;
5

```

Table altered.

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.

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

Adding a check constraint

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

Columns								
#	Column	Type	Length	Precision	Scale	Nullable	Semantics	Comment
1	CTR_NUMBER	VARCHAR2	6			No	Byte	
2	EMAIL	VARCHAR2	50			No	Byte	
3	FIRST_NAME	VARCHAR2	20			No	Byte	
4	LAST_NAME	VARCHAR2	30			No	Byte	
5	PHONE_NUMBER	VARCHAR2	11			No	Byte	
6	CURRENT_BALANCE	NUMBER	22	6	2	No		
7	SRE_ID	VARCHAR2	4			Yes	Byte	
8	TEM_ID	VARCHAR2	4			Yes	Byte	
9	LOYALTY_CARD_NUMBER	VARCHAR2	6			Yes	Byte	

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);

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

Table/View Finder

Table	CUSTOMERS				
Column	Type	Length	Precision	Scale	Nullable
CTR_NUMBER	VARCHAR2	6			No
EMAIL	VARCHAR2	50			No
FIRST_NAME	VARCHAR2	20			No
LAST_NAME	VARCHAR2	30			No
PHONE_NUMBER	VARCHAR2	11			No
CURRENT_BALANCE	NUMBER	22	6	2	No
SRE_ID	VARCHAR2	4			Yes
TEM_ID	VARCHAR2	4			Yes
LOYALTY_CARD_NUMBER	VARCHAR2	6			Yes

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.

Schema \ CUSTOMERS

Show All Columns Constraints Related Constraints Triggers Indexes Code

Constraint	Type	Condition	Related Constraint	Related Table	Constraint Columns	On Delete	Status	Last Change	Invalid?
CHECK_BALANCE	Check	current_balance >= 0	-	-	-	-	ENABLED	99 seconds ago	-
SYS_C00143900796	Check	"CTR_NUMBER" IS NOT NULL	-	-	-	-	ENABLED	27 minutes ago	-
SYS_C00143900797	Check	"EMAIL" IS NOT NULL	-	-	-	-	ENABLED	27 minutes ago	-
SYS_C00143900798	Check	"FIRST_NAME" IS NOT NULL	-	-	-	-	ENABLED	27 minutes ago	-
SYS_C00143900799	Check	"LAST_NAME" IS NOT NULL	-	-	-	-	ENABLED	27 minutes ago	-
SYS_C00143900800	Check	"PHONE_NUMBER" IS NOT NULL	-	-	-	-	ENABLED	27 minutes ago	-
SYS_C00143900801	Check	"CURRENT_BALANCE" IS NOT NULL	-	-	-	-	ENABLED	27 minutes ago	-
CUSTOMER_SALES_REP_FK	Foreign Key	-	SALES_REPRESENTATIVE_PK	SALES_REPRESENTATIVES	SRE_ID	NO ACTION	ENABLED	27 minutes ago	-
CUSTOMER_TEAM_FK	Foreign Key	-	TEAM_PK	TEAMS	TEM_ID	NO ACTION	ENABLED	27 minutes ago	-
CUSTOMER_PK	Primary Key	-	-	-	CUSTOMER_ID	-	ENABLED	27 minutes ago	-
CTR_EMAIL_UK	Unique Key	-	-	-	EMAIL	-	ENABLED	27 minutes ago	-
CTR_LCN_UK	Unique Key	-	-	-	LOYALTY_CARD_NUMBER	-	ENABLED	27 minutes ago	-

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.

#	Column	Type	Length	Precision	Scale	Nullable	Semantics	Comment
1	CTR_NUMBER	VARCHAR2	6			No	Byte	
2	EMAIL	VARCHAR2	50			No	Byte	
3	FIRST_NAME	VARCHAR2	20			No	Byte	
4	LAST_NAME	VARCHAR2	30			No	Byte	
5	PHONE_NUMBER	VARCHAR2	11			No	Byte	
6	CURRENT_BALANCE	NUMBER	22	6	2	No		
7	SRE_ID	VARCHAR2	4			Yes	Byte	
8	TEM_ID	VARCHAR2	4			Yes	Byte	
9	LOYALTY_CARD_NUMBER	VARCHAR2	6			Yes	Byte	

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

`ALTER TABLE customers`

`ADD mobile_number VARCHAR2(11);`

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

```

1 DESCRIBE customers;
2 ALTER TABLE customers
3 ADD mobile_number VARCHAR2(11);
4 DESCRIBE customers;

```

Table/View Finder

Table **CUSTOMERS**

Column	Type	Length	Precision	Scale	Nullable
CTR_NUMBER	VARCHAR2	6			No
EMAIL	VARCHAR2	50			No
FIRST_NAME	VARCHAR2	20			No
LAST_NAME	VARCHAR2	30			No
PHONE_NUMBER	VARCHAR2	11			No
CURRENT_BALANCE	NUMBER	22	6	2	No
SRE_ID	VARCHAR2	4			Yes
TEM_ID	VARCHAR2	4			Yes
LOYALTY_CARD_NUMBER	VARCHAR2	6			Yes
MOBILE_NUMBER	VARCHAR2	11			Yes

< All Objects

Copy Query

TABLE CUSTOMERS

Column	Null?
CTR_NUMBER	NOT NULL
EMAIL	NOT NULL
FIRST_NAME	NOT NULL
LAST_NAME	NOT NULL
PHONE_NUMBER	NOT NULL

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.

```

1 DESCRIBE customers;
2 ALTER TABLE customers
3 ADD mobile_number VARCHAR2(11)
4 DESCRIBE customers;

```

Table/View Finder

Table **CUSTOMERS**

Column	Type	Length	Precision	Scale	Nullable
CTR_NUMBER	VARCHAR2	6			No
EMAIL	VARCHAR2	50			No
FIRST_NAME	VARCHAR2	20			No
LAST_NAME	VARCHAR2	30			No
PHONE_NUMBER	VARCHAR2	11			No
CURRENT_BALANCE	NUMBER	22	6	2	No
SRE_ID	VARCHAR2	4			Yes
TEM_ID	VARCHAR2	4			Yes
LOYALTY_CARD_NUMBER	VARCHAR2	6			Yes
MOBILE_NUMBER	VARCHAR2	11			Yes

< All Objects

Copy Query

TABLE CUSTOMERS

Column	Null?
CTR_NUMBER	NOT NULL
EMAIL	NOT NULL
FIRST_NAME	NOT NULL
LAST_NAME	NOT NULL
PHONE_NUMBER	NOT NULL

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

`ALTER TABLE customers`

`DROP COLUMN mobile_number;`

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

SQL Worksheet

```

1 DESCRIBE customers;
2 ALTER TABLE customers
3 DROP COLUMN mobile_number;
4 DESCRIBE customers;

```

Table/View Finder

Table **CUSTOMERS**

Column	Type	Length	Precision	Scale	Nullable
CTR_NUMBER	VARCHAR2	6			No
EMAIL	VARCHAR2	50			No
FIRST_NAME	VARCHAR2	20			No
LAST_NAME	VARCHAR2	30			No
PHONE_NUMBER	VARCHAR2	11			No
CURRENT_BALANCE	NUMBER	22	6	2	No
SRE_ID	VARCHAR2	4			Yes
TEM_ID	VARCHAR2	4			Yes
LOYALTY_CARD_NUMBER	VARCHAR2	6			Yes

TABLE CUSTOMERS

Column	Null?
CTR_NUMBER	NOT NULL
EMAIL	NOT NULL
FIRST_NAME	NOT NULL
LAST_NAME	NOT NULL