

UNIVERSITI TEKNOLOGI MALAYSIA SEMESTER 1, SESSION 2023/2024

EXERCISE 1

SECD2523 : DATABASE SECTION 10

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Marks:

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?
- = -99 to 99
- 6. What are the lowest and highest values that can be stored in the price column for the price history table?
- = -99999.99 to 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
- 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.
- 3. Run the DESCRIBE command again to verify the command was successful.

```
1 CREATE TABLE orders (
2 id VARCHAR2(9) 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 );

Table created.
```

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

Table altered.
```



Adding a check constraint

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

```
SQL Worksheet

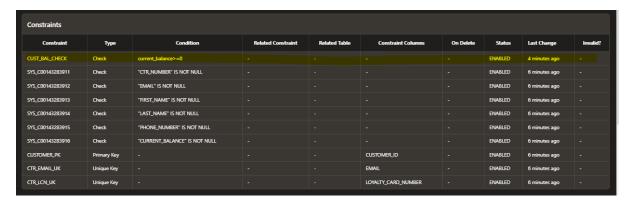
1 V CREATE TABLE customers (
2 ctr_number VARCHAR2(6) NOT NULL,
3 email VARCHAR2(50) NOT NULL,
4 first_name VARCHAR2(20) NOT NULL,
5 last_name VARCHAR2(30) NOT NULL,
6 phone_number VARCHAR2(11) NOT NULL,
7 current_balance NUMBER(6,2) NOT NULL,
8 sre_id VARCHAR2(4),
9 tem_id VARCHAR2(4),
10 loyalty_card_number VARCHAR2(4),
11 CONSTRAINT customer_pk PRIMARY KEY ( ctr_number ),
12 CONSTRAINT ctr_email_uk UNIQUE (email),
13 CONSTRAINT ctr_lcn_uk UNIQUE (loyalty_card_number)
14 );

Table created.
```

```
1 VALTER TABLE customers
2 ADD CONSTRAINT cust_bal_check
3 CHECK(current_balance>=0);
4

Table altered.
```





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
- = Solution:

ALTER TABLE customers

ADD customers mobile number NUMBER (11);

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

```
SQL Worksheet

1 CREATE TABLE Customers (
2 ctr_number VARCHAR2(6) NOT NULL,
3 email VARCHAR2(50) NOT NULL,
4 first_name VARCHAR2(20) NOT NULL,
5 last_name VARCHAR2(30) NOT NULL,
6 phone_number VARCHAR2(11) NOT NULL,
7 current_balance NuMBER(6,2) NOT NULL,
8 sre_id VARCHAR2(4),
9 tem_id VARCHAR2(4),
10 loyalty_card_number VARCHAR2(6),
11 CONSTRAINT customer_pk PRIMARY KEY ( ctr_number ),
12 CONSTRAINT ctr_email_uk UNIQUE (email),
13 CONSTRAINT ctr_lcn_uk UNIQUE (loyalty_card_number)
14 );

Table created.
```

```
TABLE CUSTOMERS

COLUMN

Null?

Type

CTR_NLMBER

NOT NULL

VARCHAR2(6)

EMAIL

NOT NULL

VARCHAR2(50)

FIRST_NAME

NOT NULL

VARCHAR2(20)

LAST_NAME

NOT NULL

VARCHAR2(30)

PHONE_NLMBER

NOT NULL

VARCHAR2(11)

CURRENT_BALANCE

NOT NULL

NUMBER(6,2)

SRE_ID

-

VARCHAR2(4)

TEM_ID

-

VARCHAR2(4)

LOYALTY_CARD_NLMBER

-

VARCHAR2(6)
```

```
18 ALTER TABLE customers;
19 ADD customers_mobile_number NUMBER (11);
```

CTR NUMBER			
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)	
CUSTOMERS_MOBILE_NUMBER		NUMBER(11,0)	

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

ALTER TABLE customers

DROP COLUMN customers mobile number;

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





