UNIVERSITI TEKNOLOGI MALAYSIA

SEMESTER 1, SESSION 2023/2024

LAB 1

SECD2523 : DATABASE

SECTION 10

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LAB 1: SQL1-DDL

Part 1: Reading information from a script

Open the "obl Sports.ddl" in a text editor.

1. How many tables have been created using the CREATE TABLE statement?

   There is 10 table has been created.

2. How many columns are created for the **price_history table**?

   There is 6 columns for price_history table.

3. What statement is used to enforce the constraint that the category column of the **items table** must have a value?

   Category column statement is 'NOT NULL'.

4. What is the name of the foreign key constraint between the **customers** and **customer addresses tables**?

   ctr_number is the foreign key constraint.

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, 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.

TABLE ORDERS

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)

2. Task: Add a default constraint that will use todays 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;

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

   No, there is no change made as the output is the same in question 1.

```
TABLE ORDERS
```

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)

Adding a check constraint

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

```
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)

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

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

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

    No, there is no change made as the output is the same in question 1.

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)

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.

Constraint	Type	Condition	Related Constraint	Related Table	Constraint Columns	On Delete	Status
CUSTOMER_BALANCE_CHECK	Check	current_balance >= 0	-	-	-	-	ENABLED

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.

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)

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.

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)
MOBILE_NUMBER	-	VARCHAR2(11)

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.

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)
MOBILE_NUMBER	-	VARCHAR2(11)

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

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)