



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING
UTM Johor Bahru

SECD2523
SECTION 10

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PROJECT TITLE:
SQL LAB1
(DDL)

| NAME | MATRIC NUMBER |
|--------------------------------|----------------------|
| NADIA SYAHADAH BINTI SAHARUDIN | A22EC0225 |

Part 1. Reading information from a script.

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?

0-99

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

000000.00-999999.99

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.

DESCRIBE orders;

| Name | Null? | Type |
|-----------------|----------|-------------|
| ID | NOT NULL | VARCHAR2(9) |
| ODR_DATE | NOT NULL | DATE |
| ODR_TIME | NOT NULL | DATE |
| NUMBER_OF_UNITS | NOT NULL | NUMBER(2) |
| CTR_NUMBER | NOT NULL | 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.

ALTER TABLE orders
MODIFY odr_date DEFAULT SYSDATE;

```
Table ORDERS altered.  
|
```

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

DESCRIBE orders;

| Name | Null? | Type |
|-----------------|----------|-------------|
| ID | NOT NULL | VARCHAR2(9) |
| ODR_DATE | NOT NULL | DATE |
| ODR_TIME | NOT NULL | DATE |
| NUMBER_OF_UNITS | NOT NULL | NUMBER(2) |
| CTR_NUMBER | NOT NULL | VARCHAR2(6) |

Adding a check constraint

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

DESCRIBE customers;

| Name | 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 check_bals CHECK (current_balance >= 0);

Table CUSTOMERS altered.

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

DESCRIBE customers;

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_NAME | CONSTRAINT_TYPE | SEARCH_CONDITION | R_OWNER | R_TABLE_NAME | R_CONSTRAINT_NAME | DELETE_RULE | STATUS | DEFERRABLE | VALIDATED | GENERATED | BAD | RELY | LAST_CHANGE |
|-------------------------|-----------------|-------------------------------|---------|-----------------------|-------------------------|-------------|---------|----------------|-----------|----------------|--------|--------|-------------|
| 1 CHECKBALANCE | Check | current_balance >= 0 | (null) | (null) | (null) | (null) | ENABLED | NOT DEFERRABLE | VALIDATED | USER NAME | (null) | (null) | 14/11/2023 |
| 2 CTR_EMAIL_UK | Unique | (null) | (null) | (null) | (null) | (null) | ENABLED | NOT DEFERRABLE | VALIDATED | USER NAME | (null) | (null) | 14/11/2023 |
| 3 CTR_LCN_UK | Unique | (null) | (null) | (null) | (null) | (null) | ENABLED | NOT DEFERRABLE | VALIDATED | USER NAME | (null) | (null) | 14/11/2023 |
| 4 CUSTOMER_FK | Primary_Key | (null) | (null) | (null) | (null) | (null) | ENABLED | NOT DEFERRABLE | VALIDATED | USER NAME | (null) | (null) | 14/11/2023 |
| 5 CUSTOMER_SALES_REP_FK | Foreign_Key | (null) | SYSTEM | SALES_REPRESENTATIVES | SALES_REPRESENTATIVE_FK | NO ACTION | ENABLED | NOT DEFERRABLE | VALIDATED | USER NAME | (null) | (null) | 14/11/2023 |
| 6 CUSTOMER_TEAM_FK | Foreign_Key | (null) | SYSTEM | TEAMS | TEAM_FK | NO ACTION | ENABLED | NOT DEFERRABLE | VALIDATED | USER NAME | (null) | (null) | 14/11/2023 |
| 7 SYS_C008288 | Check | "CTR_NUMBER" IS NOT NULL | (null) | (null) | (null) | (null) | ENABLED | NOT DEFERRABLE | VALIDATED | GENERATED NAME | (null) | (null) | 14/11/2023 |
| 8 SYS_C008289 | Check | "EMAIL" IS NOT NULL | (null) | (null) | (null) | (null) | ENABLED | NOT DEFERRABLE | VALIDATED | GENERATED NAME | (null) | (null) | 14/11/2023 |
| 9 SYS_C008290 | Check | "FIRST_NAME" IS NOT NULL | (null) | (null) | (null) | (null) | ENABLED | NOT DEFERRABLE | VALIDATED | GENERATED NAME | (null) | (null) | 14/11/2023 |
| 10 SYS_C008291 | Check | "LAST_NAME" IS NOT NULL | (null) | (null) | (null) | (null) | ENABLED | NOT DEFERRABLE | VALIDATED | GENERATED NAME | (null) | (null) | 14/11/2023 |
| 11 SYS_C008292 | Check | "PHONE_NUMBER" IS NOT NULL | (null) | (null) | (null) | (null) | ENABLED | NOT DEFERRABLE | VALIDATED | GENERATED NAME | (null) | (null) | 14/11/2023 |
| 12 SYS_C008293 | Check | "CURRENT_BALANCE" IS NOT NULL | (null) | (null) | (null) | (null) | ENABLED | NOT DEFERRABLE | VALIDATED | GENERATED NAME | (null) | (null) | 14/11/2023 |

continue....

| INDEX_OWNER | INDEX_NAME | INVALID | VIEW_RELATED |
|-------------|--------------|---------|--------------|
| (null) | (null) | (null) | (null) |
| SYSTEM | CTR_EMAIL_UK | (null) | (null) |
| SYSTEM | CTR_LCN_UK | (null) | (null) |
| SYSTEM | CUSTOMER_PK | (null) | (null) |
| (null) | (null) | (null) | (null) |
| (null) | (null) | (null) | (null) |
| (null) | (null) | (null) | (null) |
| (null) | (null) | (null) | (null) |
| (null) | (null) | (null) | (null) |
| (null) | (null) | (null) | (null) |
| (null) | (null) | (null) | (null) |
| (null) | (null) | (null) | (null) |

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.

DESCRIBE customers;

| Name | 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);

Table CUSTOMERS altered.

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

DESCRIBE customers;

| Name | 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.

DESCRIBE customers;

| Name | 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;

Table CUSTOMERS altered.

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

DESCRIBE customers;

| Name | 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) |