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LAB1 DB

Section 6 Lesson 3 Exercise : Data Definition Language

Use DDL to build and maintain database tables (S6L3 Objective 3)

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.

- How many tables have been created using the CREATE TABLE statement? 10
- How many columns are created for the price history table?
6
- What statement is used to enforce the constraint that the category column of the items table must have a value? Not null
- What is the name of the foreign key constraint between the customers and customer addresses tables?
customer_address_customer_fk
- What are the lowest and highest values that can be stored in the commission_rate column for the sales_representatives table? Lowest = 0
Highest = 99
- What are the lowest and highest values that can be stored in the price column for the price_history table? Lowest = -99999.9
Highest = 99999.9
- 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.

```
1 DESC orders;
```

| SQL Worksheet | | |
|-----------------|----------|-------------|
| 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 today's date to assign a value to the `odr_date` column of the `orders` table if no date is provided.

```
SQL Worksheet
```

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

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

```
DESC orders;
```

```
SQL Worksheet
```

| 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.

```
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) |

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

Schema \

CUSTOMERS

[Show All](#) [Columns](#) [Constraints](#) [Related Constraints](#) [Triggers](#) [Indexes](#) [Code](#)

Constraints

| Constraint | Type | Condition | Related Constraint | Related Table |
|-----------------------|-------------|-------------------------------|-------------------------|-----------------------|
| CHK_CURRENT_BALANCE | Check | current_balance >= 0 | - | - |
| SYS_C00145307845 | Check | "CTR_NUMBER" IS NOT NULL | - | - |
| SYS_C00145307846 | Check | "EMAIL" IS NOT NULL | - | - |
| SYS_C00145307847 | Check | "FIRST_NAME" IS NOT NULL | - | - |
| SYS_C00145307848 | Check | "LAST_NAME" IS NOT NULL | - | - |
| SYS_C00145307849 | Check | "PHONE_NUMBER" IS NOT NULL | - | - |
| SYS_C00145307850 | Check | "CURRENT_BALANCE" IS NOT NULL | - | - |
| CUSTOMER_SALES_REP_FK | Foreign Key | - | SALES_REPRESENTATIVE_PK | SALES_REPRESENTATIVES |
| CUSTOMER_TEAM_FK | Foreign Key | - | TEAM_PK | TEAMS |
| CUSTOMER_PK | Primary Key | - | - | - |
| CTR_EMAIL_UK | Unique Key | - | - | - |
| CTR_LCN_UK | Unique Key | - | - | - |

SQL Worksheet

Clear



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

```
2
```

```
3
```

```
4
```

```
5
```

Table altered.

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

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) |

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.

| Constraints | | | | | |
|-----------------------|-------------|-------------------------------|-------------------------|-----------------------|---------------------|
| Constraint | Type | Condition | Related Constraint | Related Table | Constraint Columns |
| CHK_CURRENT_BALANCE | Check | current_balance >= 0 | - | - | - |
| SYS_C00145307845 | Check | "CTR_NUMBER" IS NOT NULL | - | - | - |
| SYS_C00145307846 | Check | "EMAIL" IS NOT NULL | - | - | - |
| SYS_C00145307847 | Check | "FIRST_NAME" IS NOT NULL | - | - | - |
| SYS_C00145307848 | Check | "LAST_NAME" IS NOT NULL | - | - | - |
| SYS_C00145307849 | Check | "PHONE_NUMBER" IS NOT NULL | - | - | - |
| SYS_C00145307850 | Check | "CURRENT_BALANCE" IS NOT NULL | - | - | - |
| CUSTOMER_SALES_REP_FK | Foreign Key | - | SALES_REPRESENTATIVE_PK | SALES_REPRESENTATIVES | SRE_ID |
| CUSTOMER_TEAM_FK | Foreign Key | - | TEAM_PK | TEAMS | TEM_ID |
| CUSTOMER_PK | Primary Key | - | - | - | CUSTOMER_ID |
| CTR_EMAIL_UK | Unique Key | - | - | - | EMAIL |
| CTR_LCN_UK | Unique Key | - | - | - | LOYALTY_CARD_NUMBER |

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.

SQL Worksheet

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

```

1 ALTER TABLE customers ADD mobile_phone_number VARCHAR2(11) NULL;
2
3

```

Table altered.

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

| 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_PHONE_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_PHONE_NUMBER | - | VARCHAR2(11) |

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

```
1 ALTER TABLE customers DROP COLUMN mobile_phone_number;
2
3
4
5
```

Table altered.

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

| 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) |