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FACULTY OF COMPUTING
UTM Johor Bahru

SECD2523

SECTION 10

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TITLE:

SQL LAB1
(DDL)

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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)