Sem.1 2023/2024

SECD 2523 DATABASE

Section 08

LAB 1: DDL

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SUBMISSION DATA: 12 DECEMBER 2023

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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" statement

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?
   The lowest value is -99. The highest value is 99.

6. What are the lowest and highest values that can be stored in the price column for the price_history table?
   The lowest value is -99999.99. The highest value is 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

Modifying a column

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

SQL Commands

Language SQL Rows 10 Clear Command Find Tables

```
1  DESCRIBE orders
```

Results Explain Describe Saved SQL History

Object Type TABLE Object ORDERS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ORDERS	ID	VARCHAR2	9	-	-	1	-	-	-
	ODR_DATE	DATE	7	-	-	-	-	-	-
	ODR_TIME	DATE	7	-	-	-	-	-	-
	NUMBER_OF_UNITS	NUMBER	-	2	0	-	-	-	-
	CTR_NUMBER	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.

SQL Commands

Language SQL Rows 10 Clear Command Find Tables

```
1  ALTER TABLE orders
2  MODIFY odr_date DATE DEFAULT SYSDATE
```

Results Explain Describe Saved SQL History

```
Table altered.
```

0.05 seconds

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

SQL Commands

Language SQL Rows 10 Clear Command Find Tables

```
1 DESCRIBE orders
```

Results Explain Describe Saved SQL History

Object Type TABLE Object ORDERS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ORDERS	ID	VARCHAR2	9	-	-	1	-	-	-
	ODR_DATE	DATE	7	-	-	-	-	SYSDATE	-
	ODR_TIME	DATE	7	-	-	-	-	-	-
	NUMBER_OF_UNITS	NUMBER	-	2	0	-	-	-	-
	CTR_NUMBER	VARCHAR2	6	-	-	-	-	-	-

Adding a check constraint

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

SQL Commands

Language SQL Rows 10 Clear Command Find Tables

```
1 DESCRIBE customers
```

Results Explain Describe Saved SQL History

Object Type TABLE Object CUSTOMERS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	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.

SQL Commands

Language SQL Rows 10 Clear Command Find Tables

```
1  ALTER TABLE customers
2  ADD CONSTRAINT cust_bal_ckeck
3  CHECK (current_balance >= 0);
```

Results Explain Describe Saved SQL History

```
Table altered.
```

0.06 seconds

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

SQL Commands

Language SQL Rows 10 Clear Command Find Tables

```
1  DESCRIBE customers
```

Results Explain Describe Saved SQL History

Object Type TABLE Object CUSTOMERS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	NUMBER	-	6	2	-	-	-	-
	SRE_ID	VARCHAR2	4	-	-	-	✓	-	-
	TEM_ID	VARCHAR2	4	-	-	-	✓	-	-
	LOYALTY_CARD_NUMBER	VARCHAR2	6	-	-	-	✓	-	-

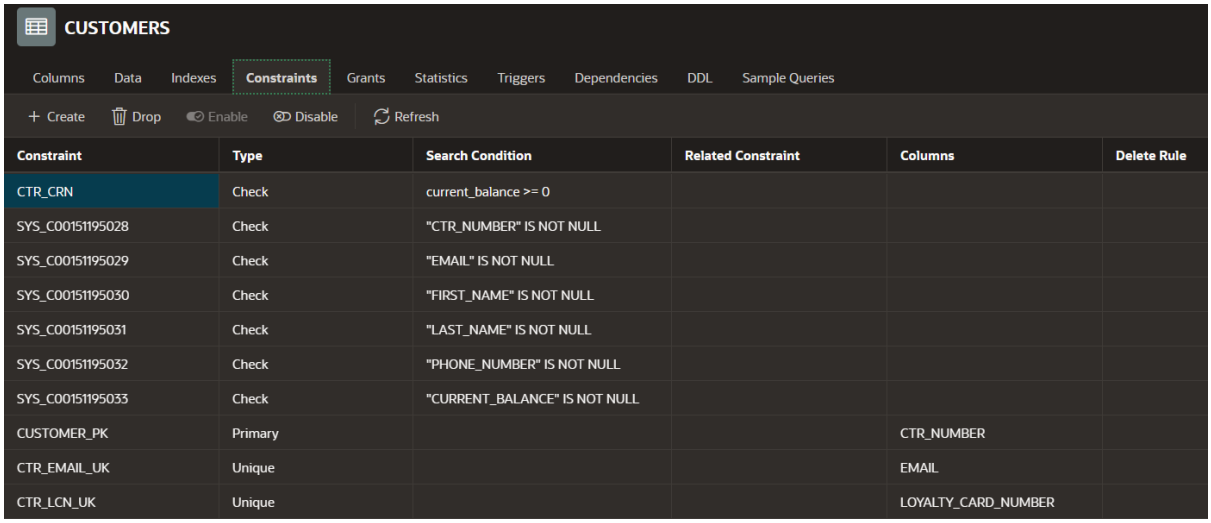
4. A check constraint is not shown in the results of a describe command.

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	Search Condition	Related Constraint	Columns	Delete Rule
CTR_CRN	Check	current_balance >= 0			
SYS_C00151195028	Check	"CTR_NUMBER" IS NOT NULL			
SYS_C00151195029	Check	"EMAIL" IS NOT NULL			
SYS_C00151195030	Check	"FIRST_NAME" IS NOT NULL			
SYS_C00151195031	Check	"LAST_NAME" IS NOT NULL			
SYS_C00151195032	Check	"PHONE_NUMBER" IS NOT NULL			
SYS_C00151195033	Check	"CURRENT_BALANCE" IS NOT NULL			
CUSTOMER_PK	Primary			CTR_NUMBER	
CTR_EMAIL_UK	Unique			EMAIL	
CTR_LCN_UK	Unique			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.

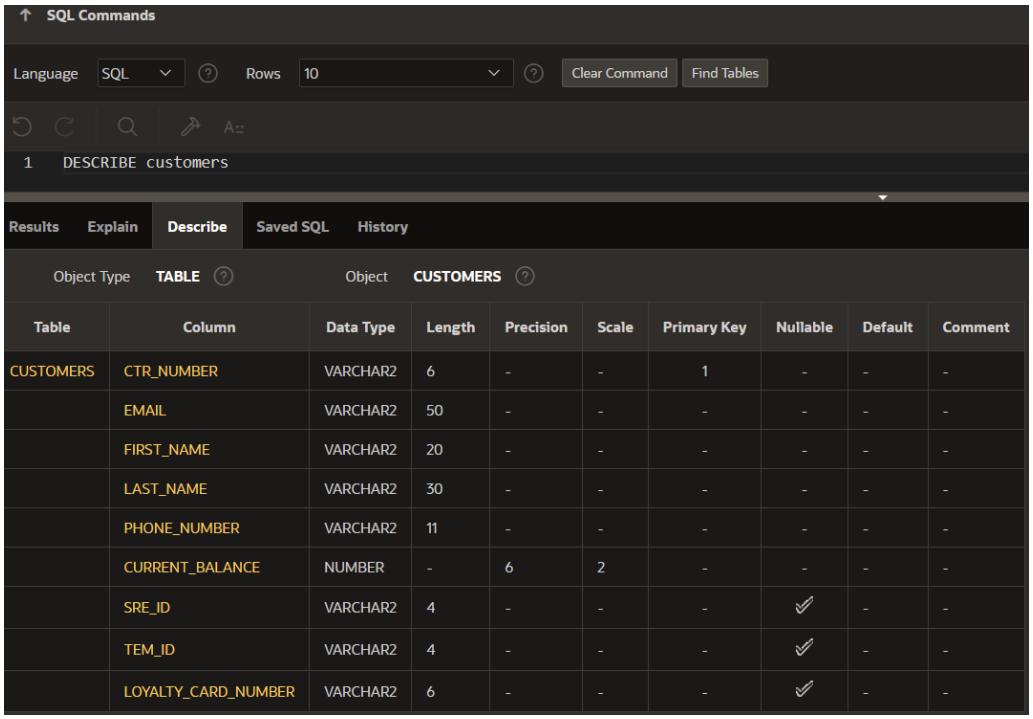


Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	NUMBER	-	6	2	-	-	-	-
	SRE_ID	VARCHAR2	4	-	-	-	✓	-	-
	TEM_ID	VARCHAR2	4	-	-	-	✓	-	-
	LOYALTY_CARD_NUMBER	VARCHAR2	6	-	-	-	✓	-	-

2. Task: Add column that will satisfy the clients requirements.

SQL Commands

Language SQL Rows 10 Clear Command Find Tables

```
1  ALTER TABLE customers
2  ADD mobile_phone_number VARCHAR (11);
```

Results Explain Describe Saved SQL History

```
Table altered.
```

0.06 seconds

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

SQL Commands

Language SQL Rows 10 Clear Command Find Tables

```
1  DESCRIBE customers
```

Results Explain Describe Saved SQL History

Object Type TABLE Object CUSTOMERS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	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.

SQL Commands

Language SQL Rows 10 Clear Command Find Tables

```
1  DESCRIBE customers
```

Results Explain Describe Saved SQL History

Object Type TABLE Object CUSTOMERS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	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.

SQL Commands

Language SQL Rows 10 Clear Command Find Tables

```
1  ALTER TABLE customers
2  DROP (mobile_phone_number);
```

Results Explain Describe Saved SQL History

```
Table altered.
```

0.05 seconds

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

SQL Commands

Language SQL Rows 10 Clear Command Find Tables

```
1  DESCRIBE customers
```

Results Explain Describe Saved SQL History

Object Type TABLE Object CUSTOMERS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMERS	CTR_NUMBER	VARCHAR2	6	-	-	1	-	-	-
	EMAIL	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	-	-	-
	LAST_NAME	VARCHAR2	30	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	11	-	-	-	-	-	-
	CURRENT_BALANCE	NUMBER	-	6	2	-	-	-	-
	SRE_ID	VARCHAR2	4	-	-	-	✓	-	-
	TEM_ID	VARCHAR2	4	-	-	-	✓	-	-
	LOYALTY_CARD_NUMBER	VARCHAR2	6	-	-	-	✓	-	-