



SECD2523

SQL LAB 1 DDL

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SECTION: 10

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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.

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?

ctr_number

5. What are the lowest and highest values that can be stored in the commission_rate column for the sales_representatives table?

Lowest value: 0

Highest value: 99

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

Lowest value: 0

Highest value: 9999999.99

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.

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 today's date to assign a value to the odr_date column of the orders table if no date is provided.

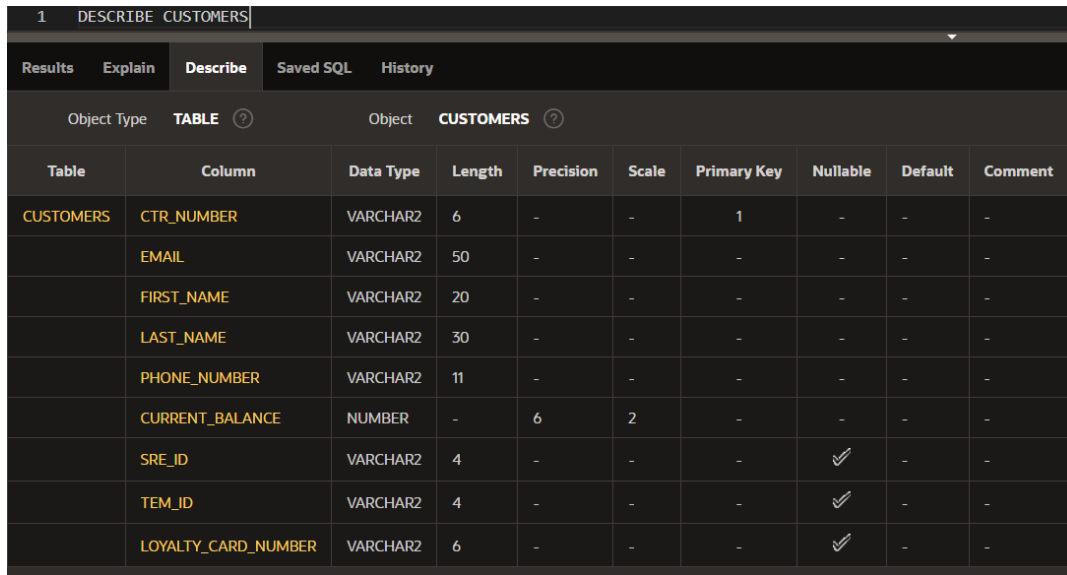
1 ALTER TABLE ORDERS									
2 MODIFY odr_date DEFAULT SYSDATE;									
Results Explain Describe Saved SQL History									
Table altered.									
0.05 seconds									

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

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

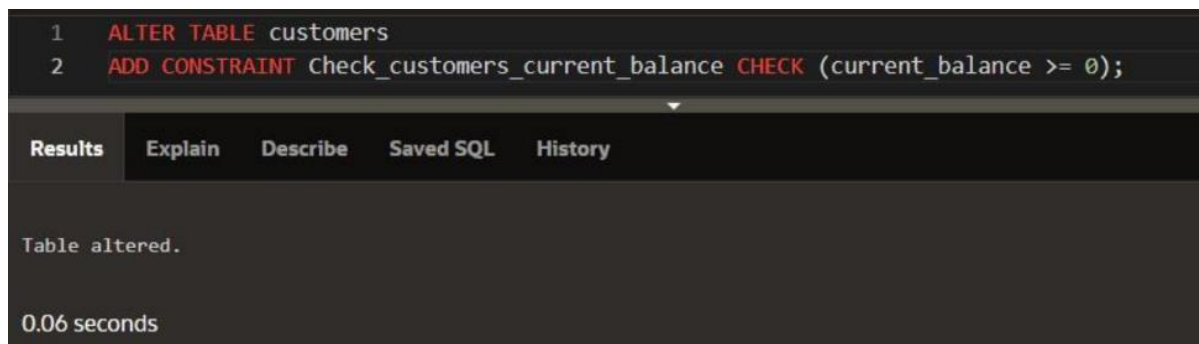
1. Run the DESCRIBE command on the customers table to view its structure.



The screenshot shows the SQL Developer interface with the command `DESCRIBE CUSTOMERS` entered in the SQL window. The 'Describe' tab is selected, displaying the table structure for '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.

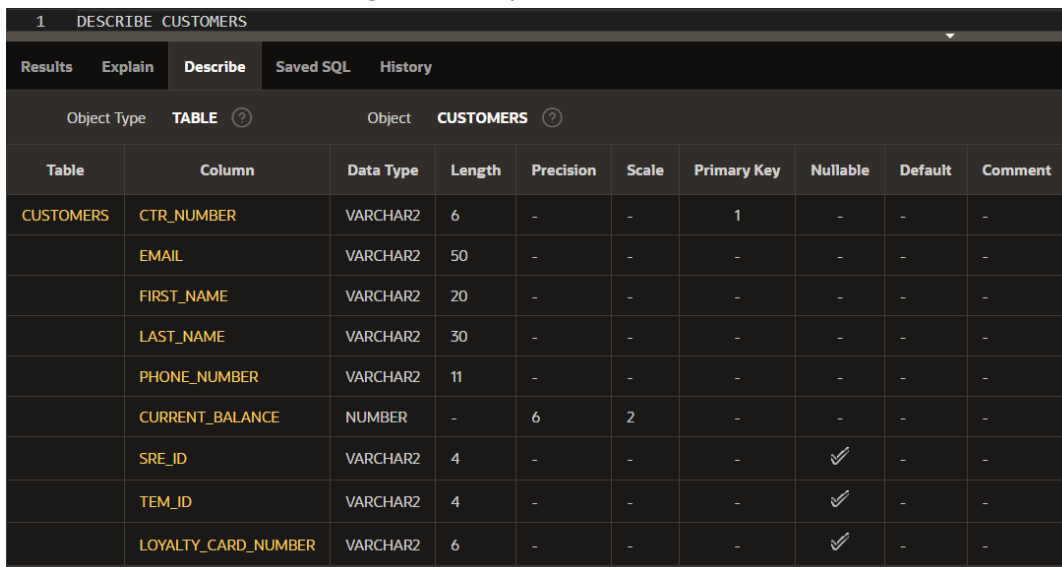


The screenshot shows the SQL Developer interface with the following SQL commands entered:

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

The 'Results' tab is selected, showing the message 'Table altered.' and the execution time '0.06 seconds'.

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



The screenshot shows the SQL Developer interface with the command `DESCRIBE CUSTOMERS` entered. The 'Describe' tab is selected, displaying the table structure for '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.

CUSTOMERS								
Columns Data Indexes Constraints Grants Statistics Triggers Dependencies DDL Sample Queries								
+ Create Drop Enable Disable Refresh								
Constraint	Type	Search Condition	Related Constraint	Columns	Delete Rule	Status	Last Change	Index
CHECK_CUSTOMERS_CURRE...	Check	current_balance>=0				ENABLED	12/03/2023	
SYS_C00150525784	Check	"CTR_NUMBER" IS NOT NULL				ENABLED	12/02/2023	
SYS_C00150525785	Check	"EMAIL" IS NOT NULL				ENABLED	12/02/2023	
SYS_C00150525786	Check	"FIRST_NAME" IS NOT NULL				ENABLED	12/02/2023	
SYS_C00150525787	Check	"LAST_NAME" IS NOT NULL				ENABLED	12/02/2023	
SYS_C00150525788	Check	"PHONE_NUMBER" IS NOT NULL				ENABLED	12/02/2023	
SYS_C00150525789	Check	"CURRENT_BALANCE" IS NOT NULL				ENABLED	12/02/2023	
CUSTOMER_SALES_REP_FK	Foreign		SALES_REPRESENTATIVE_PK ...	SRE_ID	NO ACTION	ENABLED	12/02/2023	
CUSTOMER_TEAM_FK	Foreign		TEAM_PK (WKSP_YEWEON...	TEM_ID	NO ACTION	ENABLED	12/02/2023	
CUSTOMER_PK	Primary			CTR_NUMBER		ENABLED	12/02/2023	CUSTOMER_PK
CTR_EMAIL_UK	Unique			EMAIL		ENABLED	12/02/2023	CTR_EMAIL_UK
CTR_LCN_UK	Unique			LOYALTY_CARD_NUMBER		ENABLED	12/02/2023	CTR_LCN_UK

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.

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 column that will satisfy the clients requirements

```
1 ALTER TABLE CUSTOMERS
2 ADD mobile_number VARCHAR2(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.

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_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.

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_NUMBER	VARCHAR2	11	-	-	-	✓	-	-

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

1 ALTER TABLE CUSTOMERS	
2 DROP COLUMN mobile_number;	
Results Explain Describe Saved SQL History	
Table altered.	
0.08 seconds	

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

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	-	-	-	✓	-	-