

Database Design Project

Oracle Baseball League Store Database

Project Scenario:

You are a small consulting company specializing in database development. You have just been awarded the contract to develop a data model for a database application system for a small retail store called Oracle Baseball League (OBL).

The Oracle Baseball League store serves the entire surrounding community selling baseball kit. The OBL has two types of customer, there are individuals who purchase items like balls, cleats, gloves, shirts, screen printed t-shirts, and shorts. Additionally customers can represent a team when they purchase uniforms and equipment on behalf of the team.

Teams and individual customers are free to purchase any item from the inventory list, but teams get a discount on the list price depending on the number of players. When a customer places an order we record the order items for that order in our database.

OBL has a team of three sales representatives that officially only call on teams but have been known to handle individual customer complaints.

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?
2. How many columns are created for the price history table?
3. What statement is used to enforce the constraint that the category column of the items table must have a value?
4. What is the name of the foreign key constraint between the customers and customer addresses tables?
5. What are the lowest and highest values that can be stored in the commission_rate column for the sales_representatives table?
6. What are the lowest and highest values that can be stored in the price column for the price_history table?
7. What are the 3 columns that make up the primary key for the price_history table?

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

Adding a check constraint

1. Run the DESCRIBE command on the customers table to view its structure.
2. **Task:** Add a check constraint that will not allow the customers current balance to go below zero.
3. Run the DESCRIBE command again to verify the command was successful.
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.

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.
2. **Task:** Add column that will satisfy the clients requirements
3. Run the DESCRIBE command on the customers table to view its structure.

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.
2. **Task:** Drop the column that was created to store the mobile phone number.
3. Run the DESCRIBE command on the customers table to view its structure.

Part 1

1. 10
2. 6
3. NOT NULL
4. ctr_number
5. lowest : - 99.99
highest : 99.99
6. lowest : - 99999.99
highest : 99999.99
7. start_date , start_time , itm_number

Part 2

Modifying a column :

1.

The screenshot shows the Oracle SQL Developer interface. The left pane displays the database schema with tables like AQ\$_INTERNET_AGENT_PRIVS, AQ\$_INTERNET_AGENTS, AQ\$_KEY_SHARD_MAP, AQ\$_QUEUE_TABLES, AQ\$_QUEUES, AQ\$_SCHEDULES, CUSTOMERS, and ORDERS. The ORDERS table is selected, showing its columns: CTR_NUMBER, EMAIL, FIRST_NAME, LAST_NAME, PHONE_NUMBER, and CURRENT_BALANCE. The main pane shows the SQL Worksheet with the following SQL code:

```
ALTER TABLE ordered_items ADD CONSTRAINT ordered_item_order_fk FOREIGN KEY ( odr_id )
REFERENCES orders ( id );

ALTER TABLE sales_rep_addresses ADD CONSTRAINT sales_rep_add_sales_rep_fk FOREIGN KEY ( id )
REFERENCES sales_representatives ( id );

ALTER TABLE sales_representatives ADD CONSTRAINT sales_rep_sales_rep_fk FOREIGN KEY ( supervisor_id ) REFERENCES sales_representatives ( id );

CREATE OR REPLACE TRIGGER fntm_orders BEFORE
UPDATE OF ctr_number ON orders
BEGIN
raise_application_error(
-20225,
'Mon Transferable FK constraint on table orders is violated'
);
END;
```

The Script Output pane shows the results of the SQL execution:

Name	Null?	Type
ID	NOT NULL	VARCHAR2(9)
ORD_DATE	NOT NULL	DATE
ORD_TIME	NOT NULL	DATE
NUMBER_OF_UNITS	NOT NULL	NUMBER(2)
CTR_NUMBER	NOT NULL	VARCHAR2(6)

2.

The screenshot shows the Oracle SQL Developer interface. The left pane displays the database schema with tables like AQ\$_INTERNET_AGENT_PRIVS, AQ\$_INTERNET_AGENTS, AQ\$_KEY_SHARD_MAP, AQ\$_QUEUE_TABLES, AQ\$_QUEUES, AQ\$_SCHEDULES, CUSTOMERS, and ORDERS. The ORDERS table is selected, showing its columns: CTR_NUMBER, EMAIL, FIRST_NAME, LAST_NAME, PHONE_NUMBER, and CURRENT_BALANCE. The main pane shows the SQL Worksheet with the following SQL code:

```
ALTER TABLE sales_rep_addresses ADD CONSTRAINT sales_rep_add_sales_rep_fk FOREIGN KEY ( id )
REFERENCES sales_representatives ( id );

ALTER TABLE sales_representatives ADD CONSTRAINT sales_rep_sales_rep_fk FOREIGN KEY ( supervisor_id ) REFERENCES sales_representatives ( id );

CREATE OR REPLACE TRIGGER fntm_orders BEFORE
UPDATE OF ctr_number ON orders
BEGIN
raise_application_error(
-20225,
'Mon Transferable FK constraint on table orders is violated'
);
END;
```

The Script Output pane shows the results of the SQL execution:

Name	Null?	Type
ID	NOT NULL	VARCHAR2(9)
ORD_DATE	NOT NULL	DATE
ORD_TIME	NOT NULL	DATE
NUMBER_OF_UNITS	NOT NULL	NUMBER(2)
CTR_NUMBER	NOT NULL	VARCHAR2(6)

Table ORDERS altered.

3.

The screenshot shows the Oracle SQL Developer interface with a SQL script being executed. The script includes the following SQL commands:

```

ALTER TABLE sales_rep_addresses ADD CONSTRAINT sales_rep_add_sales_rep_fk FOREIGN KEY ( id )
REFERENCES sales_representatives ( id );

ALTER TABLE sales_representatives ADD CONSTRAINT sales_rep_sales_rep_fk FOREIGN KEY ( supervisor_id ) REFERENCES sales_representatives ( id );

CREATE OR REPLACE TRIGGER fntm_orders BEFORE
UPDATE OF ctr_number ON orders
BEGIN
    raise_application_error(
        -20225,
        'Non Transferable FK constraint on table orders is violated'
    );
END;
/

describe orders;
alter table orders
modify (odr_date DATE DEFAULT SYSDATE);
describe orders;

```

The Script Output window shows the following table structure for the **ORDERS** table:

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.

The screenshot shows the Oracle SQL Developer interface with a SQL script being executed. The script includes the following SQL commands:

```

ALTER TABLE sales_rep_addresses ADD CONSTRAINT sales_rep_add_sales_rep_fk FOREIGN KEY ( id )
REFERENCES sales_representatives ( id );

ALTER TABLE sales_representatives ADD CONSTRAINT sales_rep_sales_rep_fk FOREIGN KEY ( supervisor_id ) REFERENCES sales_representatives ( id );

CREATE OR REPLACE TRIGGER fntm_orders BEFORE
UPDATE OF ctr_number ON orders
BEGIN
    raise_application_error(
        -20225,
        'Non Transferable FK constraint on table orders is violated'
    );
END;
/

describe orders;
alter table orders
modify (odr_date DATE DEFAULT SYSDATE);
describe orders;

describe customers;

```

The Script Output window shows the following table structure for the **CUSTOMERS** table:

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.

Oracle SQL Developer: C:\Users\Asus\AppData\Roaming\SQL Developer\DB_1AB1.sql

File Edit View Navigate Run Source Team Tools Window Help

Connections

Tables (Filtered)

- AQS_INTERNET_AGENT_PRIVS
- AQS_INTERNET_AGENTS
- AQS_KEY_SHARD_MAP
- AQS_QUEUE_TABLES
- AQS_QUEUES
- AQS_SCHEDULES
- CUSTOMERS
 - CTR_NUMBER
 - EMAIL
 - FIRST_NAME
 - LAST_NAME
 - PHONE_NUMBER
 - CURRENT_BALANCE
 - SRE_ID
 - TEM_ID
 - LOYALTY_CARD_NUMBER

Reports

- All Reports
- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

SQL Worksheet: History

Worksheet Query Builder

0.25999999 seconds

```

ALTER TABLE sales_representatives ADD CONSTRAINT sales_rep_sales_rep_fk FOREIGN KEY ( supervisor_id ) REFERENCES sales_representatives ( id );

CREATE OR REPLACE TRIGGER fntm_orders BEFORE
UPDATE OF ctr_number ON orders
BEGIN
    raise_application_error(
        -20215,
        'Non Transferable FK constraint on table orders is violated'
    );
END;

describe orders;
alter table orders
modify (odr_date DATE DEFAULT SYSDATE);
describe orders;

describe customers;
alter table customers
add constraint cus_current_balance check (current_balance >= 0);

```

Script Output

Task completed in 0.26 seconds

Column Name	Data Type	Nullable
FIRST_NAME	NOT NULL VARCHAR2(20)	NO
LAST_NAME	NOT NULL VARCHAR2(30)	NO
PHONE_NUMBER	NOT NULL VARCHAR2(11)	NO
CURRENT_BALANCE	NOT NULL NUMBER(6,2)	NO
SRE_ID	VARCHAR2(4)	YES
TEM_ID	VARCHAR2(4)	YES
LOYALTY_CARD_NUMBER	VARCHAR2(6)	YES

Table CUSTOMERS altered.

Click on an identifier with the Control key down to perform "Go to Declaration"

Line 138 Column 65 | Insert | Modified | Windows: C

26°C Mostly cloudy 11:11 PM

3.

Oracle SQL Developer: C:\Users\Asus\AppData\Roaming\SQL Developer\DB_1AB1.sql

File Edit View Navigate Run Source Team Tools Window Help

Connections

Tables (Filtered)

- AQS_INTERNET_AGENT_PRIVS
- AQS_INTERNET_AGENTS
- AQS_KEY_SHARD_MAP
- AQS_QUEUE_TABLES
- AQS_QUEUES
- AQS_SCHEDULES
- CUSTOMERS
 - CTR_NUMBER
 - EMAIL
 - FIRST_NAME
 - LAST_NAME
 - PHONE_NUMBER
 - CURRENT_BALANCE
 - SRE_ID
 - TEM_ID
 - LOYALTY_CARD_NUMBER

Reports

- All Reports
- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

SQL Worksheet: History

Worksheet Query Builder

Task completed in 0.03 seconds

```

ALTER TABLE sales_representatives ADD CONSTRAINT sales_rep_sales_rep_fk FOREIGN KEY ( supervisor_id ) REFERENCES sales_representatives ( id );

CREATE OR REPLACE TRIGGER fntm_orders BEFORE
UPDATE OF ctr_number ON orders
BEGIN
    raise_application_error(
        -20215,
        'Non Transferable FK constraint on table orders is violated'
    );
END;

describe orders;
alter table orders
modify (odr_date DATE DEFAULT SYSDATE);
describe orders;

describe customers;
alter table customers
add constraint cus_current_balance check (current_balance >= 0);
describe customers;

```

Script Output

Task completed in 0.03 seconds

Column Name	Data Type	Nullable
CTR_NUMBER	NOT NULL VARCHAR2(6)	NO
EMAIL	NOT NULL VARCHAR2(50)	NO
FIRST_NAME	NOT NULL VARCHAR2(20)	NO
LAST_NAME	NOT NULL VARCHAR2(30)	NO
PHONE_NUMBER	NOT NULL VARCHAR2(11)	NO
CURRENT_BALANCE	NOT NULL NUMBER(6,2)	NO
SRE_ID	VARCHAR2(4)	YES
TEM_ID	VARCHAR2(4)	YES
LOYALTY_CARD_NUMBER	VARCHAR2(6)	YES

Click on an identifier with the Control key down to perform "Go to Declaration"

Line 139 Column 20 | Insert | Modified | Windows: C

26°C Mostly cloudy 11:11 PM

Oracle SQL Developer: Table SYSTEM.CUSTOMERS@System

File Edit View Navigate Run Team Tools Window Help

Connections

Tables (Filtered)

- AQS_INTERNET_AGENT_PRIVS
- AQS_INTERNET_AGENTS
- AQS_KEY_SHARD_MAP
- AQS_QUEUE_TABLES
- AQS_QUEUES
- AQS_SCHEDULES
- CUSTOMERS
 - CTR_NUMBER
 - EMAIL
 - FIRST_NAME
 - LAST_NAME
 - PHONE_NUMBER
 - CURRENT_BALANCE
 - SRE_ID
 - TEM_ID
 - LOYALTY_CARD_NUMBER

Reports

- All Reports
- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

Columns | Data | Model | Constraints | Grants | Statistics | Triggers | Flashback | Dependencies | Details | Partitions | Indexes | SQL

Columns

CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION	R_OWNER	R_TABLE_NAME	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	VALIDATED	G
1 CTR_EMAIL_UK	Unique	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	VALIDATED	USE
2 CTR_LCN_UK	Unique	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	VALIDATED	USE
3 CUSTOMER_PK	Primary_Key	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	VALIDATED	USE
4 CUSTOMER_SALES_REP_FK	Foreign_Key	(null)	SYSTEM	SALES_REPRESENTATIVES	SALES_REPRESENTATIVE_FK	NO ACTION	ENABLED	NOT DEFERRABLE	VALIDATED	USE
5 CUSTOMER_TEAM_FK	Foreign_Key	(null)	SYSTEM	TEAMS	TEAM_FK	NO ACTION	ENABLED	NOT DEFERRABLE	VALIDATED	USE
6 CUS_CURRENT_BALANCE	Check	current_balance >= 0	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	VALIDATED	USE
7 SYS_C000254	Check	"CTR_NUMBER" IS NOT NULL	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	VALIDATED	GEN
8 SYS_C000255	Check	"EMAIL" IS NOT NULL	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	VALIDATED	GEN
9 SYS_C000256	Check	"FIRST_NAME" IS NOT NULL	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	VALIDATED	GEN
10 SYS_C000257	Check	"LAST_NAME" IS NOT NULL	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	VALIDATED	GEN
11 SYS_C000258	Check	"PHONE_NUMBER" IS NOT NULL	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	VALIDATED	GEN
12 SYS_C000259	Check	"CURRENT_BALANCE" IS NOT NULL	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	VALIDATED	GEN

Columns

Columns: CTR_NUMBER, EMAIL, FIRST_NAME, LAST_NAME, PHONE_NUMBER, CURRENT_BALANCE, SRE_ID, TEM_ID, LOYALTY_CARD_NUMBER

System | SYSTEM | CUSTOMER

26°C Mostly cloudy 11:11 PM

Adding a column :

1.

Oracle SQL Developer: C:\Users\Asus\AppData\Roaming\SQL Developer\DS_LAB1.sql

File Edit View Navigate Run Source Team Tools Window Help

Connections

Tables (Filtered)

- AQS_INTERNET_AGENT_PRIVS
- AQS_INTERNET_AGENTS
- AQS_KEY_SHARD_MAP
- AQS_QUEUE_TABLES
- AQS_QUEUES
- AQS_SCHEDULES
- CUSTOMERS
 - CTR_NUMBER
 - EMAIL
 - FIRST_NAME
 - LAST_NAME
 - PHONE_NUMBER
 - CURRENT_BALANCE
 - SRE_ID
 - TEM_ID
 - LOYALTY_CARD_NUMBER

Reports

- All Reports
- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

SQL Worksheet: History

Worksheet

```

CREATE OR REPLACE TRIGGER fmrtr_orders BEFORE
UPDATE OF ctr_number ON orders
BEGIN
    raise_application_error(
        -20225,
        'Non Transferable FK constraint on table orders is violated'
    );
END;
/

describe orders;
alter table orders
modify (odr_date DATE DEFAULT SYSDATE);
describe orders;

describe customers;
alter table customers
add constraint cus_current_balance check (current_balance >= 0);
describe customers;
describe customers;
  
```

Script Output

Task completed in 0.041 seconds

```

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)
  
```

Line 161 Column 20 | Insert | Modified | Windows | C

26°C Mostly cloudy 11:12 PM

2.

Oracle SQL Developer: C:\Users\Asus\AppData\Roaming\SQL Developer\DB_1AB1.sql

File Edit View Navigate Run Source Team Tools Window Help

Connections

Tables (Filtered)

- AQS_INTERNET_AGENT_PRIVS
- AQS_INTERNET_AGENTS
- AQS_KEY_SHARD_MAP
- AQS_QUEUE_TABLES
- AQS_QUEUES
- AQS_SCHEDULES
- CUSTOMERS
 - CTR_NUMBER
 - EMAIL
 - FIRST_NAME
 - LAST_NAME
 - PHONE_NUMBER
 - CURRENT_BALANCE
 - SRE_ID
 - TEM_ID
 - LOYALTY_CARD_NUMBER

Reports

- All Reports
- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

SQL Worksheet: History

0.2860001 seconds

Worksheet Query Builder

```

BEGIN
  raise_application_error(
    -20225,
    'Non Transferable FK constraint on table orders is violated'
  );
END;

describe orders;
alter table orders
modify (odr_date DATE DEFAULT SYSDATE);
describe orders;

describe customers;
alter table customers
add constraint cus_current_balance check (current_balance >= 0);
describe customers;

describe customers;
alter table customers
add mobile_phone_number number(11);

```

Script Output

Task completed in 0.286 seconds

```

raise_application_error(-20225, 'Non Transferable FK constraint on table orders is violated')
END;
describe orders;
alter table orders
modify (odr_date DATE DEFAULT SYSDATE);
describe orders;
describe customers;
alter table customers
add constraint cus_current_balance check (current_balance >= 0);
describe customers;
describe customers;
alter table customers
add mobile_phone_number number(11);
describe customers;

```

Column Name	Data Type	Nullable
FIRST_NAME	VARCHAR2(20)	NOT NULL
LAST_NAME	VARCHAR2(30)	NOT NULL
PHONE_NUMBER	VARCHAR2(11)	NOT NULL
CURRENT_BALANCE	NUMBER(6,2)	NOT NULL
SRE_ID	VARCHAR2(4)	
TEM_ID	VARCHAR2(4)	
LOYALTY_CARD_NUMBER	VARCHAR2(6)	

Table CUSTOMERS altered.

Line 163 Column 26 | Insert | Modified | Windows: C

26°C Mostly cloudy | 11:12 PM

3.

Oracle SQL Developer: C:\Users\Asus\AppData\Roaming\SQL Developer\DB_1AB1.sql

File Edit View Navigate Run Source Team Tools Window Help

Connections

Tables (Filtered)

- AQS_INTERNET_AGENT_PRIVS
- AQS_INTERNET_AGENTS
- AQS_KEY_SHARD_MAP
- AQS_QUEUE_TABLES
- AQS_QUEUES
- AQS_SCHEDULES
- CUSTOMERS
 - CTR_NUMBER
 - EMAIL
 - FIRST_NAME
 - LAST_NAME
 - PHONE_NUMBER
 - CURRENT_BALANCE
 - SRE_ID
 - TEM_ID
 - LOYALTY_CARD_NUMBER

Reports

- All Reports
- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

SQL Worksheet: History

0.033 seconds

Worksheet Query Builder

```

raise_application_error(
  -20225,
  'Non Transferable FK constraint on table orders is violated'
);
END;

describe orders;
alter table orders
modify (odr_date DATE DEFAULT SYSDATE);
describe orders;

describe customers;
alter table customers
add constraint cus_current_balance check (current_balance >= 0);
describe customers;

describe customers;
alter table customers
add mobile_phone_number number(11);
describe customers;

```

Script Output

Task completed in 0.033 seconds

```

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 NUMBER(11)

```

Line 164 Column 26 | Insert | Modified | Windows: C

26°C Mostly cloudy | 11:12 PM

Dropping a column :

1.

The screenshot shows the Oracle SQL Developer interface. On the left, the 'Tables (Filtered)' pane lists various tables, including 'CUSTOMERS'. The 'Script Output' pane at the bottom displays the results of a task completed in 0.029 seconds. The output shows the structure of the 'CUSTOMERS' table with columns: CTR_NUMBER, EMAIL, FIRST_NAME, LAST_NAME, PHONE_NUMBER, CURRENT_BALANCE, SRE_ID, TEM_ID, LOYALTY_CARD_NUMBER, and MOBILE_PHONE_NUMBER.

```
SQL Worksheet: DB_LAB1.sql

--Mon Transferable FK constraint on table orders is violated--
END;
/

describe orders;
alter table orders
modify (odr_date DATE DEFAULT SYSDATE);
describe orders;

describe customers;
alter table customers
add constraint cus_current_balance check (current_balance >= 0);
describe customers;

describe customers;
alter table customers
add mobile_phone_number number(11);
describe customers;

describe customers;
```

Column Name	Data Type	Nullable	Length
CTR_NUMBER	NUMBER	NOT NULL	6
EMAIL	VARCHAR2	NOT NULL	50
FIRST_NAME	VARCHAR2	NOT NULL	20
LAST_NAME	VARCHAR2	NOT NULL	30
PHONE_NUMBER	NUMBER	NOT NULL	11
CURRENT_BALANCE	NUMBER	NOT NULL	6,2
SRE_ID	NUMBER	NOT NULL	4
TEM_ID	NUMBER	NOT NULL	4
LOYALTY_CARD_NUMBER	NUMBER	NOT NULL	6
MOBILE_PHONE_NUMBER	NUMBER	NOT NULL	11

2.

The screenshot shows the Oracle SQL Developer interface after dropping the 'MOBILE_PHONE_NUMBER' column. The 'Script Output' pane at the bottom displays the results of a task completed in 0.347 seconds. The output shows the structure of the 'CUSTOMERS' table with columns: LAST_NAME, PHONE_NUMBER, CURRENT_BALANCE, SRE_ID, TEM_ID, LOYALTY_CARD_NUMBER, and MOBILE_PHONE_NUMBER. The 'MOBILE_PHONE_NUMBER' column is now marked as 'DROPPED'.

```
SQL Worksheet: DB_LAB1.sql

END;
/

describe orders;
alter table orders
modify (odr_date DATE DEFAULT SYSDATE);
describe orders;

describe customers;
alter table customers
add constraint cus_current_balance check (current_balance >= 0);
describe customers;

describe customers;
alter table customers
add mobile_phone_number number(11);
describe customers;

describe customers;
alter table customers
drop (MOBILE_PHONE_NUMBER);
```

Column Name	Data Type	Nullable	Length
LAST_NAME	VARCHAR2	NOT NULL	30
PHONE_NUMBER	NUMBER	NOT NULL	11
CURRENT_BALANCE	NUMBER	NOT NULL	6,2
SRE_ID	NUMBER	NOT NULL	4
TEM_ID	NUMBER	NOT NULL	4
LOYALTY_CARD_NUMBER	NUMBER	NOT NULL	6
MOBILE_PHONE_NUMBER	NUMBER	NOT NULL	11

Table CUSTOMERS altered.

3.

Oracle SQL Developer: C:\Users\Asus\AppData\Roaming\SQL Developer\DB_LAB1.sql

File Edit View Navigate Run Source Team Tools Window Help

Connections

Tables (Filtered)

- AQS_INTERNET_AGENT_PRIVS
- AQS_INTERNET_AGENTS
- AQS_KEY_SHARD_MAP
- AQS_QUEUE_TABLES
- AQS_QUEUES
- AQS_SCHEDULES
- CUSTOMERS
 - CTR_NUMBER
 - EMAIL
 - FIRST_NAME
 - LAST_NAME
 - PHONE_NUMBER
 - CURRENT_BALANCE
 - SRE_ID
 - TEM_ID
 - LOYALTY_CARD_NUMBER

Reports

- All Reports
- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

SQL Worksheet: History

Worksheet Query Builder

```
describe orders;
alter table orders
modify (odr_date DATE DEFAULT SYSDATE);
describe orders;

describe customers;
alter table customers
add constraint cus_current_balance check (current_balance >= 0);
describe customers;

describe customers;
alter table customers
add mobile_phone_number number(11);
describe customers;

describe customers;
alter table customers
drop (MOBILE_PHONE_NUMBER);
describe customers;
```

Script Output

Task completed in 0.029 seconds

NAME	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)

Unit: 169 Column: 20 | Insert | Modified | Windows: C

25°C Mostly cloudy 11:13 PM