

e-commerce store for coffee beans and tools

Group number 6 Section 3

group Members :

name	Student ID
leader : Munirah Alduraibi	441010672
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1.Project report

Tasks	Munirah	Dhi	Elham	Raghad	Hanan	Leena
1. writing business rules <phase 1>	✓	✓				
2. chen's notation			✓	✓		
3. UML notation					✓	✓
4. ER to Schema Step 1-2 <phase 2>			✓	✓		
5. ER to Schema Step 3-5					✓	✓
6.normalization 2 entity	✓	✓				
8. normalization 2 entity			✓	✓		
9. normalization 2 entity	✓	✓				
10. definition commands → creation of schema & tables <phase 3>	✓	✓				
11. manipulation commands → insertion of all tables	✓	✓				
12. manipulation commands → 1 "update" AND 1 "delete" commands	✓	✓				
13. queries commands → 2 "select" commands include "where" clause			✓	✓		
14. queries commands → 2 "select" commands include "order by" clause			✓	✓		
15. queries commands → 2 "select" commands include "group by" clause					✓	✓
16. queries commands → 2 "select" commands include "having" clause					✓	✓
17. queries commands → 1 "select" command using "subqueries"			✓	✓		
18. queries commands → 1 "select" command using "join operations"					✓	✓

Business rules

the online store sells different PRODUCTS of coffee beans and tools each product has a name, and a unique product serial number, each product has the following additional attributes: a product_price. and the product production_date, and expiry_date, and product quantity which used with the product serial number to distinguish which products is ordered and which is in the inventory.

the online store keeps records of all previous customers, for marketing reasons, therefore each customer may or may not submit an order and may or may not issue an invoice, The identifier for CUSTOMER is customer_id and other attributes are name and address, each customer has one address, each CUSTOMER can place one or many ORDERS,

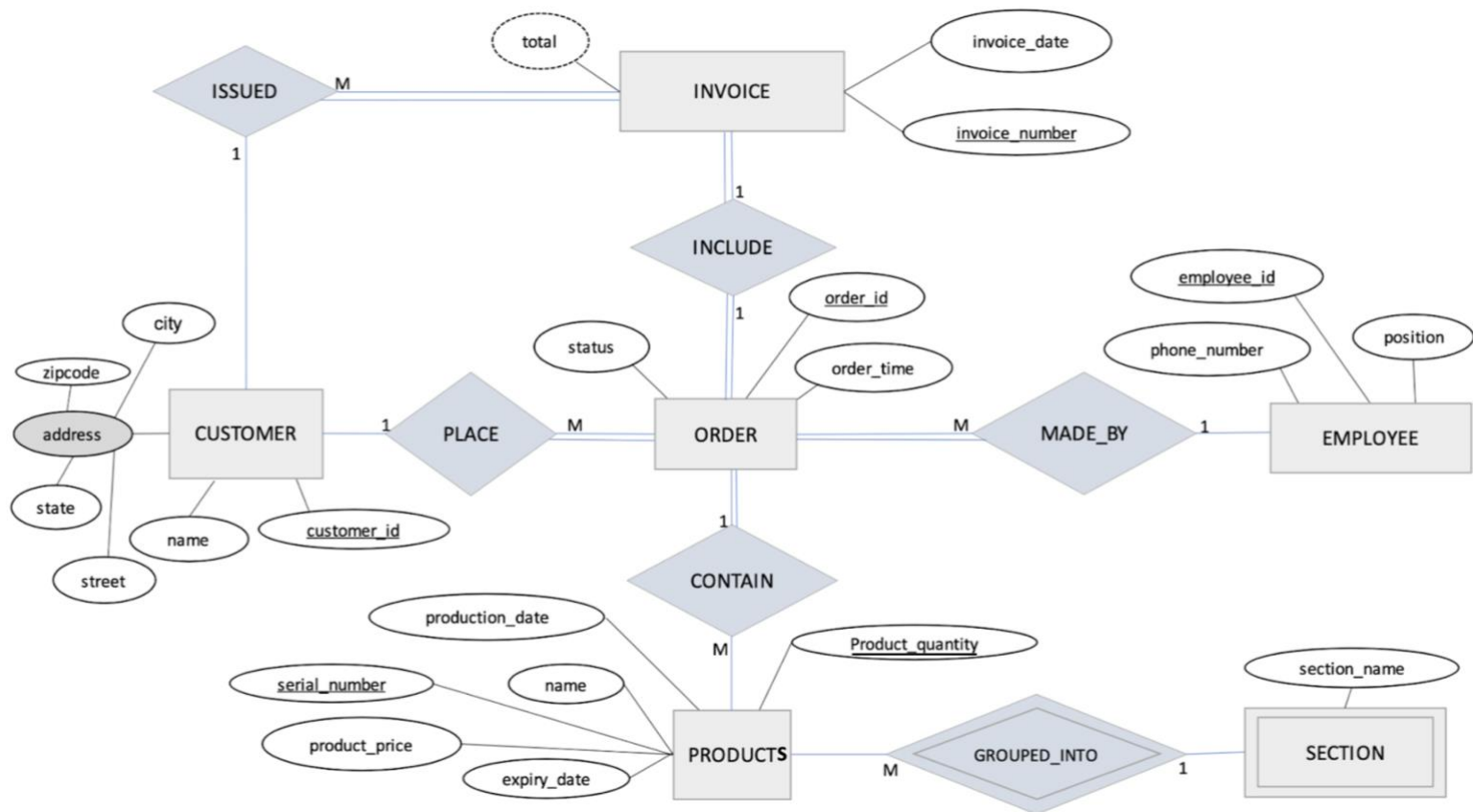
the identifier for an order is order_id ,and other attributes are order_time and order status, each ORDER contain one or more PRODUCTS, many ORDERS is made by one EMPLOYEE .

the identifier for INVOICE is the invoice number, and other attributes are invoice_date, and the total, each INVOICE include one ORDER, and one or more INVOICE is issued for one CUSTOMER

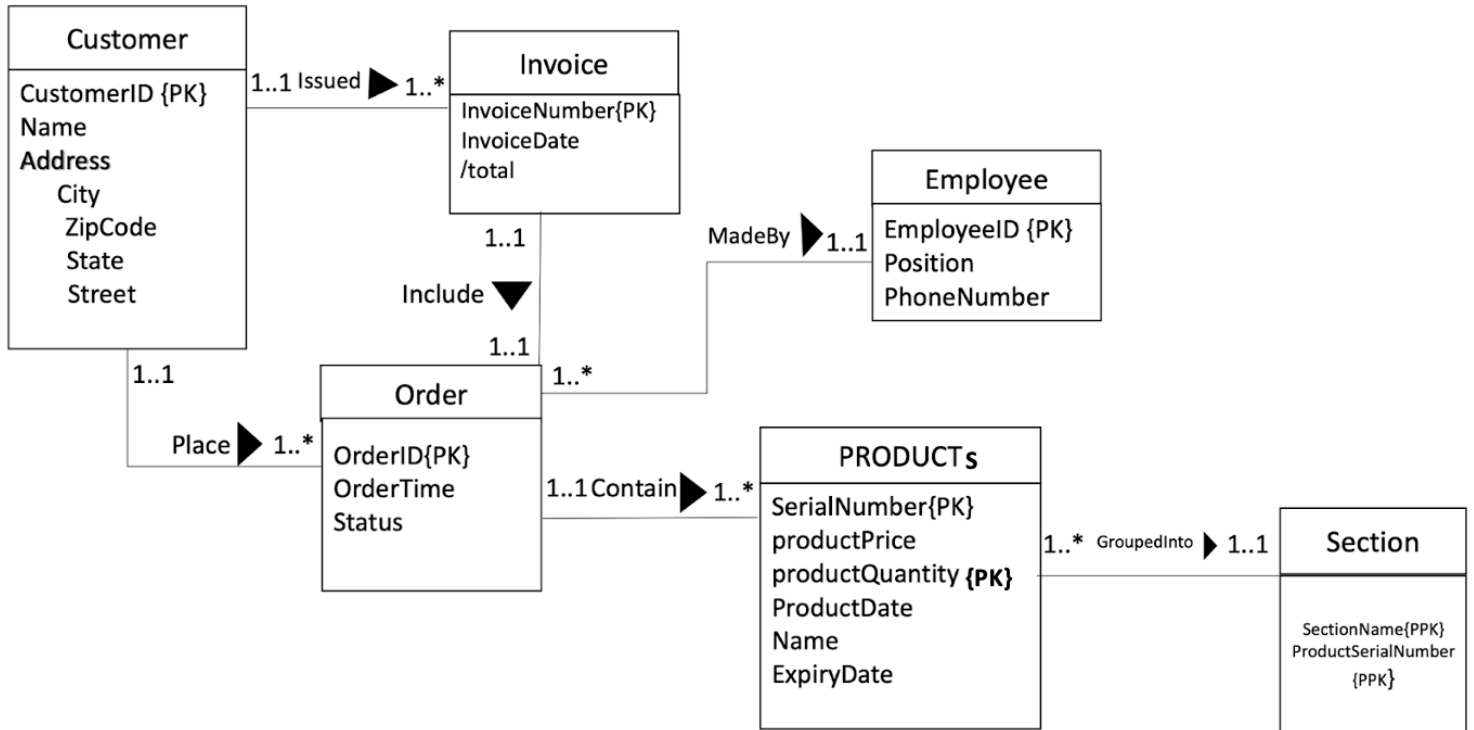
the online coffee store has several EMPLOYEEs the identifier for an employee is employee_id , other attributes include a specific position, phone number.

The identifier for SECTIONs is a section_name, and every SECTION consists of products.

Chen's Notation



UML Notation



Schema

Step 1: Mapping of regular entity types

Invoice

<u>invoice_number</u>	invoice_date
-----------------------	--------------

Customer

<u>customer_id</u>	customer_Name	addr_city	addr_zipcode	addr_state	addr_street
--------------------	---------------	-----------	--------------	------------	-------------

Order

<u>order_id</u>	order_time	status
-----------------	------------	--------

Employee

<u>employee_id</u>	phone_number	position
--------------------	--------------	----------

Products

<u>Product serial number</u>	name	<u>quantity</u>	price	production_date	expiry_date
------------------------------	------	-----------------	-------	-----------------	-------------

Step 2 : Mapping of weak entity into relation

Section

<u>product serial number</u>	<u>section_name</u>
------------------------------	---------------------

Step 3: Mapping of Binary 1:1

Order

<u>order_id</u>	order_time	status
-----------------	------------	--------

Invoice

invoice-date	<u>invoice_number</u>	order_id
--------------	-----------------------	----------

Step 4: Mapping of binary 1:N

Customer

<u>customer_id</u>	customer_Name	addr_city	addr_zipcode	addr_state	addr_street
--------------------	---------------	-----------	--------------	------------	-------------

Employee

<u>employee_id</u>	Phone_number	Position
--------------------	--------------	----------

Order

<u>order_id</u>	order_time	status	employee_id	customer_id
-----------------	------------	--------	-------------	-------------

Invoice

invoice_date	<u>invoice_number</u>	order_id	customer_id
--------------	-----------------------	----------	-------------

Products

<u>Product_serial_number</u>	name	<u>quantity</u>	price	production_date	expiry_date	order_id
------------------------------	------	-----------------	-------	-----------------	-------------	----------

Section

<u>product_serial_number</u>	<u>section_name</u>
------------------------------	---------------------

Step 5: Mapping of M:N

there's No m:n

Step 6: Mapping of Multivalued attributes

there's no multivalued attributes

Step 7: Mapping of N-ary Relationship Types

there's no N-ray relationship

Final mapping

Customer

<u>customer_id</u>	customer_Name	addr_city	addr_zipcode	addr_state	addr_street
--------------------	---------------	-----------	--------------	------------	-------------

Employee

<u>employee_id</u>	Phone_number	Position
--------------------	--------------	----------

Order

<u>order_id</u>	order_time	status	employee_id	customer_id
-----------------	------------	--------	-------------	-------------

Invoice

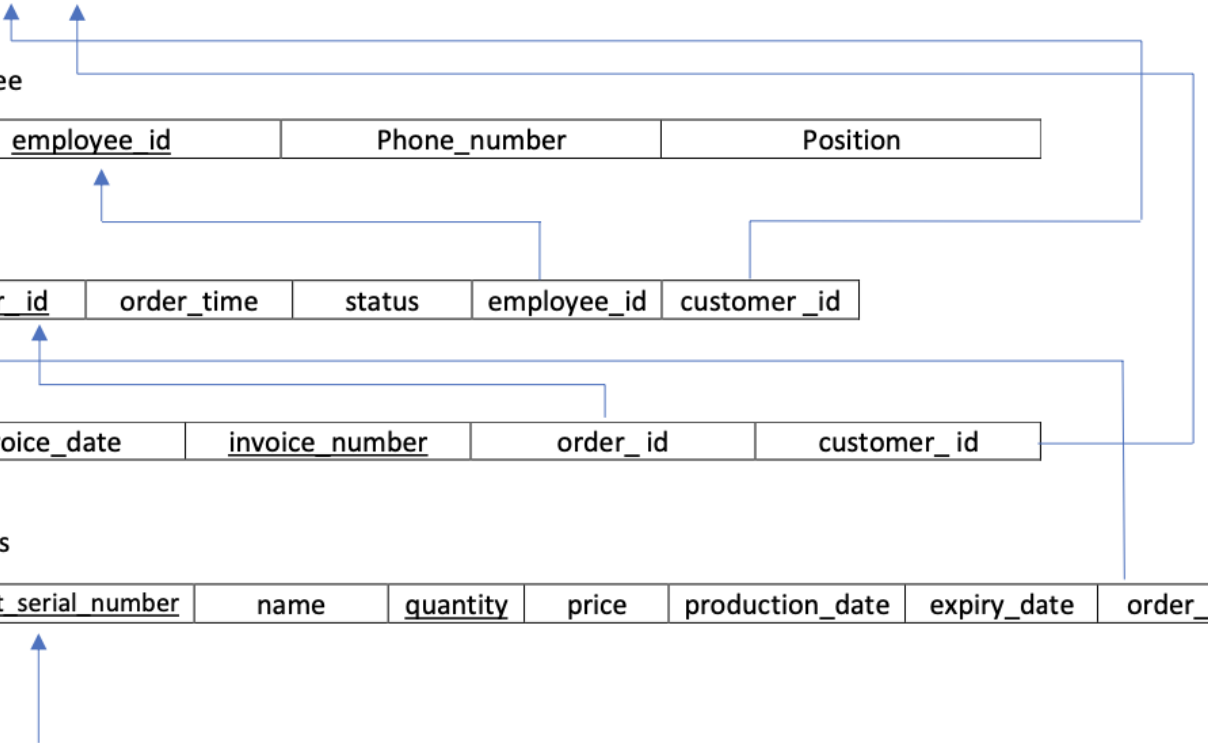
invoice_date	<u>invoice_number</u>	order_id	customer_id
--------------	-----------------------	----------	-------------

Products

<u>Product_serial_number</u>	name	<u>quantity</u>	price	production_date	expiry_date	order_id
------------------------------	------	-----------------	-------	-----------------	-------------	----------

Section

<u>product_serial_number</u>	<u>section_name</u>
------------------------------	---------------------



Normalization

1.Customer

<u>customer_id</u>	customer_Name	addr_state	addr_city	addr_zipcode	addr_street
2345	hind	makkah	makkah	33945	alessa
6538	sarah	riyadh	almuzahmiyah	68909	alfraa
7832	saleh	makkah	taif	89441	qouraish
4732	maram	riyadh	riyadh	32456	Othman
7898	abdullah	damam	damam	56794	fisaleh

First normal form (1NF) :-

No multivalued attributes

Second normal form (2NF) :-

No Partial Dependency.

Third normal form (3NF) :-

No transitive dependencies

Final for customer

Customer (customer_id, customer_Name , addr_state, addr_city, addr_zipcode, addr_street)

2. Order

<u>order_id</u>	order_time	status	employee_id	customer_id
0101	11:00pm	processing	1111	2345
0102	01:16pm	Not started	1112	6538
0103	07:31pm	done	1113	7832
0104	1:00am	Not started	1114	4732
0105	3:00am	Not started	1115	7898

First normal form (1NF) :-

No multivalued attributes

Second normal form (2NF) :-

No Partial Dependency.

Third normal form (3NF) :-

No transitive dependencies

Final for order

Order (order_id , order_time , status , employee_id , customer_id)

3. Invoice

<u>invoice_number</u>	invoice_date	order_id	customer_id
1	9/11/2021	0101	2345
2	10/11/2021	0102	6538
3	11/11/2021	0103	7832
4	12/11/2021	0104	4732
5	13/11/2021	0105	7898

First normal form (1NF) :-

No multivalued attributes

Second normal form (2NF) :-

No Partial Dependency.

Third normal form (3NF) :-

No transitive dependencies

Final for Invoice

Invoice (invoice_number , invoice_date , order_id , customer_id)

4. Employee

<u>employee_id</u>	phone_number	position
1111	56783746	seller
1112	58374658	assistant
1113	50378575	manger
1114	55384950	seller
1115	54384562	marketer

First normal form (1NF) :-

No multivalued attributes

Second normal form (2NF) :-

No Partial Dependency.

Third normal form (3NF) :-

No transitive dependencies

Final for employee

Employee (employee_id , Phone_number, position)

5. Products

<u>serial_number</u>	name	<u>quantity</u>	price	production_date	expiry_date	order_id
1234	Coffee beans A	1	58	12-oct-2021	1-nov-2022	0101
1235	grinder	3	200			0102
1234	Coffee beans A	8	58	1-sep-2021	1-oct-2022	
1237	Water heater	4	300			
1238	Coffee beans b	1	40	3-dec-2021	3-dec-2022	0105

First normal form (1NF) :-

Products (Product_serial_number, name, quantity, price, order_id)

Product_date (Product_serial_number, production_date, expiry_date)

Second normal form (2NF) :-

No Partial Dependency.

Third normal form (3NF) :-

No transitive dependencies

Final for Product

Products (Product_serial_number, name, quantity, price, order_id)

Product_date (Product_serial_number, production_date, expiry_date)

6. Section

<u>product_serial_number</u>	<u>section_name</u>
1234	beans
1235	tools
1234	beans
1237	tools
1238	beans

First normal form (1NF) :-

No multivalued attributes

Second normal form (2NF) :-

No Partial Dependency.

Third normal form (3NF) :-

No transitive dependencies

Final for Section

Section (product_serial_number, section_name)

Visual see of the tables

Customer

<u>customer_id</u>	customer_Name	addr_state	addr_city	addr_zipcode	addr_street
2345	hind	makkah	makkah	33945	alessa
6538	sarah	riyadh	almuzahmiyah	68909	alfraa
7832	saleh	makkah	taif	89441	qouraish
4732	maram	riyadh	riyadh	32456	Othman
7898	abdullah	damam	damam	56794	fisaleh

Employee

<u>employee_id</u>	phone_number	position
1111	56783746	seller
1112	58374658	assistant
1113	50378575	manger
1114	55384950	seller
1115	54384562	marketer

Order

<u>order_id</u>	order_time	status	employee_id	customer_id
0101	11:00pm	processing	1111	2345
0102	01:16pm	Not started	1112	6538
0103	07:31pm	done	1113	7832
0104	1:00am	Not started	1114	4732
0105	3:00am	Not started	1111	7898

Invoice

<u>invoice_number</u>	invoice_date	order_id	customer_id
1	9/11/2021	0101	2345
2	10/11/2021	0102	6538
3	11/11/2021	0103	7832
4	12/11/2021	0104	4732
5	13/11/2021	0105	7898

Products

<u>Product_serial_number</u>	name	<u>quantity</u>	price	order_id
1234	Coffee beans A	1	58	0101
1235	grinder	3	200	0102
1234	Coffee beans A	8	58	
1237	Water heater	4	300	
1238	Coffee beans b	1	40	0105
1239	Coffee beans c	4	32	

Product_date

<u>Product_serial_number</u>	<u>production_date</u>	expiry_date
1234	12-oct-2021	1-nov-2022
1235	9-aug-2021	9-aug-2026
1234	1-sep-2021	1-oct-2022
1237	5-april-2020	5-april-2021
1238	3-dec-2021	3-dec-2022
1239	1-jan-2021	1-jan-2022

Section

<u>product_serial_number</u>	<u>section_name</u>
1234	beans
1235	tools
1237	tools
1238	beans
1239	beans

SQL

Creation of schema and tables

The screenshot shows the SQL Developer interface with the 'e_commerce' schema selected. The SQL editor contains the following code:

```
1 CREATE SCHEMA e_commerce ;
2
3 # creation of tables
4 CREATE TABLE customer (
5     customer_id CHAR(4) NOT NULL,
6     customer_name VARCHAR(20),
7     addr_state VARCHAR(20),
8     addr_city VARCHAR(20),
9     addr_zipcode INT(5),
10    addr_street VARCHAR(20),
11    CONSTRAINT customer_PK PRIMARY KEY (customer_id)
12 );
13
14 CREATE TABLE employee (
15     employee_id CHAR(4) NOT NULL,
16     phone_number VARCHAR(10),
17     positions VARCHAR(20) CHECK( positions IN ('seller', 'assistant', 'manger','marketer')),
18    CONSTRAINT employee_PK PRIMARY KEY (employee_id)
19 );
20
21 CREATE TABLE orders (
22     order_id CHAR(4) NOT NULL,
23     order_time VARCHAR(6),
24     order_status VARCHAR(20),
25     employee_id CHAR(4),
26     customer_id CHAR(4),
27    CONSTRAINT order_PK PRIMARY KEY (order_id),
28    CONSTRAINT orders_FK1 FOREIGN KEY (employee_id) REFERENCES employee(employee_id) ON DELETE SET NULL ON UPDATE CASCADE,
29    CONSTRAINT orders_FK2 FOREIGN KEY (customer_id) REFERENCES customer(customer_id) ON DELETE SET NULL ON UPDATE CASCADE
30 );
31
32
```

The Action Output window shows the execution results:

	Time	Action	Response	Duration / Fetch Time
2	19:14:57	CREATE TABLE customer (customer_id CHAR(4) NOT NULL, customer_name VARCHAR(20), addr_state...	0 row(s) affected	0.0080 sec
3	19:15:01	CREATE TABLE employee (employee_id CHAR(4) NOT NULL, phone_number VARCHAR(10), positions...	0 row(s) affected	0.0054 sec
4	19:15:11	CREATE TABLE orders (order_id CHAR(4) NOT NULL, order_time VARCHAR(6), order_status VARCHAR...	0 row(s) affected	0.0091 sec

The screenshot shows the SQL Developer interface with the 'e_commerce' schema selected. The SQL editor contains the following code:

```
31
32
33
34
35
36 CREATE TABLE invoice (
37     invoice_number CHAR(4) NOT NULL,
38     invoice_date VARCHAR(20),
39     order_id CHAR(4),
40     customer_id CHAR(4),
41    CONSTRAINT invoice_PK PRIMARY KEY (invoice_number),
42    CONSTRAINT invoice_FK1 FOREIGN KEY (order_id) REFERENCES orders(order_id) ON DELETE CASCADE ON UPDATE CASCADE,
43    CONSTRAINT invoice_FK2 FOREIGN KEY (customer_id) REFERENCES customer(customer_id) ON DELETE SET NULL ON UPDATE CASCADE
44 );
45
46 CREATE TABLE products (
47     product_serial_number CHAR(4) NOT NULL,
48     product_name VARCHAR(20),
49     quantity INT(4) NOT NULL,
50     price INT(5),
51     order_id CHAR(4),
52    CONSTRAINT products_PK PRIMARY KEY (product_serial_number, quantity),
53    CONSTRAINT products_FK1 FOREIGN KEY (order_id) REFERENCES orders(order_id) ON DELETE SET NULL ON UPDATE CASCADE
54 );
55
56
57
58
59
60 CREATE TABLE product_date (
61     product_serial_number CHAR(4) NOT NULL,
62     production_date VARCHAR(20) NOT NULL,
63 )
64
```

The Action Output window shows the execution results:

	Time	Action	Response	Duration / Fetch Time
4	19:15:11	CREATE TABLE orders (order_id CHAR(4) NOT NULL, order_time VARCHAR(6), order_status VARCHAR...	0 row(s) affected	0.0091 sec
5	19:17:27	CREATE TABLE invoice (invoice_number CHAR(4) NOT NULL, invoice_date VARCHAR(20), order_id C...	0 row(s) affected	0.0099 sec
6	19:17:31	CREATE TABLE products (product_serial_number CHAR(4) NOT NULL, product_name VARCHAR(20), q...	0 row(s) affected	0.0081 sec

AdministrationSchemase_commerce

SCHEMAS

Filter objects

> courseDB

> e_commerce

Tables

Views

Stored Procedures

Functions

> Lab6

> sys

Object InfoSession

Schemas: e_commerce

Limit to 1000 rows

product_name VARCHAR(20),
49 quantity INT(4) NOT NULL,
50 price INT(5),
51 order_id CHAR(4),
52 CONSTRAINT products_PK PRIMARY KEY (product_serial_number, quantity),
53 CONSTRAINT products_FK1 FOREIGN KEY (order_id) REFERENCES orders(order_id) ON DELETE SET NULL ON UPDATE CASCADE
54);
55
56
57
58
59
60 CREATE TABLE product_date (
61 product_serial_number CHAR(4) NOT NULL,
62 production_date VARCHAR(20) NOT NULL,
63 expiry_date VARCHAR(20),
64 CONSTRAINT product_date_PK PRIMARY KEY (product_serial_number , production_date),
65 CONSTRAINT product_date_FK1 FOREIGN KEY (product_serial_number) REFERENCES products(product_serial_number) ON DELETE CASCADE ON UPDATE
66);
67
68 CREATE TABLE section (
69 product_serial_number CHAR(4) NOT NULL,
70 section_name VARCHAR(20) NOT NULL,
71 CONSTRAINT section_PK PRIMARY KEY (product_serial_number , section_name),
72 CONSTRAINT section_FK1 FOREIGN KEY (product_serial_number) REFERENCES products(product_serial_number) ON DELETE CASCADE ON UPDATE CASC
73);
74
75
76
77
78
79

100% 1:60

Action Output

	Time	Action	Response	Duration / Fetch Time
6	19:17:31	CREATE TABLE products (product_serial_number CHAR(4) NOT NULL, product_name VARCHAR(20), q...	0 row(s) affected	0.0081 sec
7	19:23:26	CREATE TABLE product_date (product_serial_number CHAR(4) NOT NULL, production_date VARCHAR...	0 row(s) affected	0.0069 sec
8	19:23:29	CREATE TABLE section (product_serial_number CHAR(4) NOT NULL, section_name VARCHAR(20) NO...	0 row(s) affected	0.0066 sec

Inserting in tables

[illegible][illegible]

[illegible]

The screenshot shows the DBeaver SQL editor interface. On the left, the 'Schemas' tree displays the database hierarchy: Administration, Schemas, e_commerce, courseDB, e_commerce (selected), Tables, Views, Stored Procedures, Functions, Lab6, and sys. The main editor area contains a SQL script with five INSERT statements into the 'invoice' table, followed by a SELECT statement to verify the data. The status bar at the bottom indicates '100%' zoom and '1:125' rows affected.

```

124
125  ■ INSERT INTO invoice
126    VALUES ('1','9/11/2021','0101','2345');
127  ■ INSERT INTO invoice
128    VALUES ('2','10/11/2021','0102','6538');
129  ■ INSERT INTO invoice
130    VALUES ('3','11/11/2021','0103','7832');
131  ■ INSERT INTO invoice
132    VALUES ('4','12/11/2021','0104','4732');
133  ■ INSERT INTO invoice
134    VALUES ('5','13/11/2021','0105','7898');
135    # show the whole table
136  ■ SELECT *
137    FROM invoice;
138
139
140

```

Below the SQL editor, the 'Result Grid' tab is active, displaying the results of the last executed query (SELECT * FROM invoice). The grid shows 5 rows of data:

invoice_num...	invoice_date	order_id	customer_id
1	9/11/2021	0101	2345
2	10/11/2021	0102	6538
3	11/11/2021	0103	7832
4	12/11/2021	0104	4732
5	13/11/2021	0105	7898

At the bottom, the 'Object Info' tab is selected, showing details for the 'invoice' table in the 'e_commerce' schema. It includes columns like 'id', 'date', 'order_id', 'customer_id', etc., and their respective data types.

Administration Schemas e_commerce

SCHEMAS

Filter objects

courseDB

e_commerce

Tables

Views

Stored Procedures

Functions

Lab6

sys

Limit to 1000 rows

```
141
142 INSERT INTO products
143 VALUES ('1234','Coffee beans A','1','58','0101');
144 INSERT INTO products
145 VALUES ('1235','grinder','3','200','0102');
146 INSERT INTO products
147 VALUES ('1234','Coffee beans A','8','58', NULL);
148 INSERT INTO products
149 VALUES ('1237','Water heater','4','300', NULL);
150 INSERT INTO products
151 VALUES ('1238','Coffee beans b','1','40','0105');
152 INSERT INTO products
153 VALUES ('1239','Coffee beans c','4','32',NULL);
154 # show the whole table
155 SELECT *
156 FROM products;
157
```

100% 1:142

Result Grid Filter Rows: Search Edit: Export/Import:

product_serial_num...	product_name	quantity	price	order_id
1234	Coffee beans A	1	58	0101
1234	Coffee beans A	8	58	NULL
1235	grinder	3	200	0102
1237	Water heater	4	300	NULL
1238	Coffee beans b	1	40	0105
1239	Coffee beans c	4	32	NULL
NULL	NULL	NULL	NULL	NULL

products 6 Apply Revert

Action Output

	Time	Action	Response	Duration / Fetch Time
38	19:32:50	INSERT INTO products VALUES ('1238','Coffee beans b','1','40','0105')	1 row(s) affected	0.00077 sec
39	19:32:54	INSERT INTO products VALUES ('1239','Coffee beans c','4','32',NULL)	1 row(s) affected	0.00088 sec
40	19:32:58	SELECT * FROM products LIMIT 0, 1000	6 row(s) returned	0.00029 sec / 0.0000...

Administration Schemas e_commerce

SCHEMAS

Filter objects

courseDB

e_commerce

Tables

Views

Stored Procedures

Functions

Lab6

sys

Limit to 1000 rows

```
157
158 INSERT INTO product_date
159 VALUES ('1234','12-oct-2021','1-nov-2022');
160 INSERT INTO product_date
161 VALUES ('1235','9-aug-2021','9-aug-2026');
162 INSERT INTO product_date
163 VALUES ('1234','1-sep-2021','1-oct-2022');
164 INSERT INTO product_date
165 VALUES ('1237','5-april-2020','5-april-2021');
166 INSERT INTO product_date
167 VALUES ('1238','3-dec-2021','3-dec-2022');
168 INSERT INTO product_date
169 VALUES ('1239','1-jan-2021','1-jan-2022');
170 # show the whole table
171 SELECT *
172 FROM product_date;
173
```

100% 1:158

Result Grid Filter Rows: Search Edit: Export/Import:

product_serial_number	production_d...	expiry_date
1234	1-sep-2021	1-oct-2022
1234	12-oct-2021	1-nov-2022
1235	9-aug-2021	9-aug-2026
1237	5-april-2020	5-april-2021
1238	3-dec-2021	3-dec-2022
1239	1-jan-2021	1-jan-2022
NULL	NULL	NULL

product_date 7 Apply Revert

Action Output

	Time	Action	Response	Duration / Fetch Time
45	19:34:02	INSERT INTO product_date VALUES ('1238','3-dec-2021','3-dec-2022')	1 row(s) affected	0.0011 sec
46	19:34:06	INSERT INTO product_date VALUES ('1239','1-jan-2021','1-jan-2022')	1 row(s) affected	0.00090 sec
47	19:34:10	SELECT * FROM product_date LIMIT 0, 1000	6 row(s) returned	0.00028 sec / 0.0000...

Update and delete commands

[illegible]

The screenshot shows the DBeaver IDE interface. On the left, the 'Schemas' panel displays a tree view with 'courseDB' expanded under 'e_commerce'. The main editor window contains a SQL script:

```
-- delete product number 1239 because it has been expired
DELETE FROM products
WHERE product_serial_number = '1238';

SELECT *
FROM products;
```

Below the editor, the 'Result Grid' tab is active, displaying the output of the last executed query (SELECT * FROM products). The grid shows columns: product_serial_num..., product_name, quantity, price, and order_id. The data rows are as follows:

product_serial_num...	product_name	quantity	price	order_id
1234	Coffee beans A	1	58	0101
1234	Coffee beans A	8	58	NULL
1235	grinder	3	200	0102
1237	Water heater	4	300	NULL
1239	Coffee beans C	4	32	NULL
NULL	NULL	NULL	NULL	NULL

At the bottom, the 'Action Output' pane shows the execution log:

	Time	Action	Response	Duration / Fetch Time
✓	57 19:41:41	SELECT * FROM orders LIMIT 0, 1000	5 row(s) returned	0.00027 sec / 0.0000...
✓	58 19:44:54	DELETE FROM products WHERE product_serial_number = '1238'	1 row(s) affected	0.0013 sec
✓	59 19:44:57	SELECT * FROM products LIMIT 0, 1000	5 row(s) returned	0.00033 sec / 0.0000...

select commands

e_commerce*

Limit to 1000 rows

```
207 FROM products;
208
209
210 # 1. show inventory "not ordered"
211 SELECT product_serial_number, product_name, quantity
212 FROM products
213 WHERE order_id IS NULL;
214
215
```

100% 1:211

Result Grid Filter Rows: Search Edit: Export/Import:

product_serial_num...	product_name	quantity
1294	Coffee beans A	8
1237	Water heater	4
1239	Coffee beans c	4
NULL	NULL	NULL

Result Grid Form Editor

e_commerce*

Limit to 1000 rows

```
213 WHERE order_id IS NULL;
214
215
216 # 2. show all info about the employee's who has a positions as seller
217 SELECT employee_id , phone_number
218 FROM employee
219 WHERE positions ='seller';
220
221
```

100% 1:217

Result Grid Filter Rows: Search Edit: Export/Import:

employee_id	phone_number
1111	56783746
1114	55384950
NULL	NULL

Result Grid Form Editor

e_commerce*

Limit to 1000 rows

```
219 WHERE positions ='seller';
220
221
222 # 3. list the invoice's as latest added in descending order
223 SELECT invoice_number,order_id
224 FROM invoice
225 ORDER BY invoice_number DESC;
226
227
```

100% 1:223

Result Grid Filter Rows: Search Edit: Export/Import:

invoice_numb...	order_id
5	0105
4	0104
3	0103
2	0102
1	0101
NULL	NULL

Result Grid Form Editor

e_commerce*

Limit to 1000 rows

```

225 ORDER BY invoice_number DESC;
226
227
228 # 4. show all the customers info in ascending order depdenig on their names
229 SELECT *
230 FROM customer
231 ORDER BY customer_name;
232
233

```

100% 1:229

Result Grid Filter Rows: Search Edit: Export/Import:

customer_id	customer_name	addr_state	addr_city	addr_zipcode	addr_street
7898	abdullah	damam	damam	56794	fisaleh
2345	hind	makkah	makkah	33945	alessa
4732	maram	riyadh	riyadh	32456	Othman
7832	saleh	makkah	taif	89441	qpuraish
6538	sarah	riyadh	almuzahmiyah	68909	alfraa
NULL	NULL	NULL	NULL	NULL	NULL

Result Grid Form Editor

e_commerce*

Limit to 1000 rows

```

231 ORDER BY customer_name;
232
233
234 # 5. show all orders that are not started
235 SELECT *
236 FROM orders
237 WHERE order_status = 'Not started';
238
239

```

100% 1:235

Result Grid Filter Rows: Search Edit: Export/Import:

order_id	order_time	order_status	employee_id	customer_id
0102	13:16	Not started	1112	6538
0104	01:00	Not started	1114	4732
0105	03:00	Not started	1111	7898
NULL	NULL	NULL	NULL	NULL

Result Grid Form Editor

e_commerce*

Limit to 1000 rows

```

237 WHERE order_status = 'Not started';
238
239
240 # 6. show products serial number in the tools section
241 SELECT product_serial_number
242 FROM section
243 WHERE section_name = 'tools';
244
245

```

100% 1:241

Result Grid Filter Rows: Search Export:

product_serial_num...
1235
1237

Result Grid Form Editor

e_commerce*

Limit to 1000 rows

```
243 WHERE section_name ='tools';
244
245
246 # 7. show all products in the invotery "not ordered" and thier price should be less than 200
247 ■ SELECT product_name, SUM(quantity) as all_quantity
248 FROM products
249 WHERE order_id IS NULL
250 GROUP BY product_name
251 HAVING SUM(price)<200;
252
253
```

100% 1:247

Result Grid Filter Rows: Search Export:

product_name	all_quantity
Coffee beans A	8
Coffee beans c	4

Result Grid Form Editor

e_commerce*

Limit to 1000 rows

```
251 HAVING SUM(price)<200;
252
253
254 # 8. show employee that has repated positions "more than 1"
255 ■ SELECT positions,COUNT(employee_id)AS count
256 FROM employee
257 GROUP BY positions
258 HAVING COUNT(employee_id)>1;
259
260
261
```

100% 1:255

Result Grid Filter Rows: Search Export:

positions	count
seller	2

Result Grid Form Editor

e_commerce*

Limit to 1000 rows

```
259
260
261
262 # 9. show the empolyee info that worked on order number 0102
263 SELECT *
264 FROM employee
265 WHERE employee_id = ( SELECT employee_id
266                       FROM orders
267                       WHERE order_id='0102' );
268
269
```

100% 1:263

Result Grid Filter Rows: Search Edit: Export/Import:

employee_id	phone_number	positions
1112	58374658	assistant
NULL	NULL	NULL

Result Grid Form Editor

e_commerce*

Limit to 1000 rows

```
268
269
270
271 # 10. show customers id and names and all info about thier orders
272 SELECT c.customer_id , customer_name , order_id , order_time , order_status , employee_id , o.customer_id
273 FROM customer c , orders o
274 WHERE c.customer_id = o.customer_id
275 ORDER BY order_time;
276
277
```

100% 1:272

Result Grid Filter Rows: Search Export:

customer_id	customer_name	order_id	order_time	order_status	employee_id	customer_id
4732	maram	0104	01:00	Not started	1114	4732
7898	abdullah	0105	03:00	Not started	1111	7898
6538	sarah	0102	13:16	Not started	1112	6538
7832	saleh	0103	20:31	done	1113	7832
2345	hind	0101	23:00	done	1111	2345

Result Grid Form Editor

Difficulties we encountered

First we need to start by showing our appreciation for this course, we think that this course is crucial and so important for our educational journey also our career journey.

Second there is no major difficulties we faced, and we do think that the time we had was more than enough, the other good thing is the review on each phase which is allow us to modify a lot, along the semester, eventually we appreciate the process and the experience, it have added a lot to us, so thank you dr.asma