e-commerce store

for coffee beans and tools

Group number 6 Section 3

group Members :

name	Student ID
leader : Munirah Alduraibi	441010672
Dhai Alqahtani	441007728
Lenah Babkair	441014154
Hanan Alharbi	441014380
Elham Haji	441005947
Raghad alharbi	441013745

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,

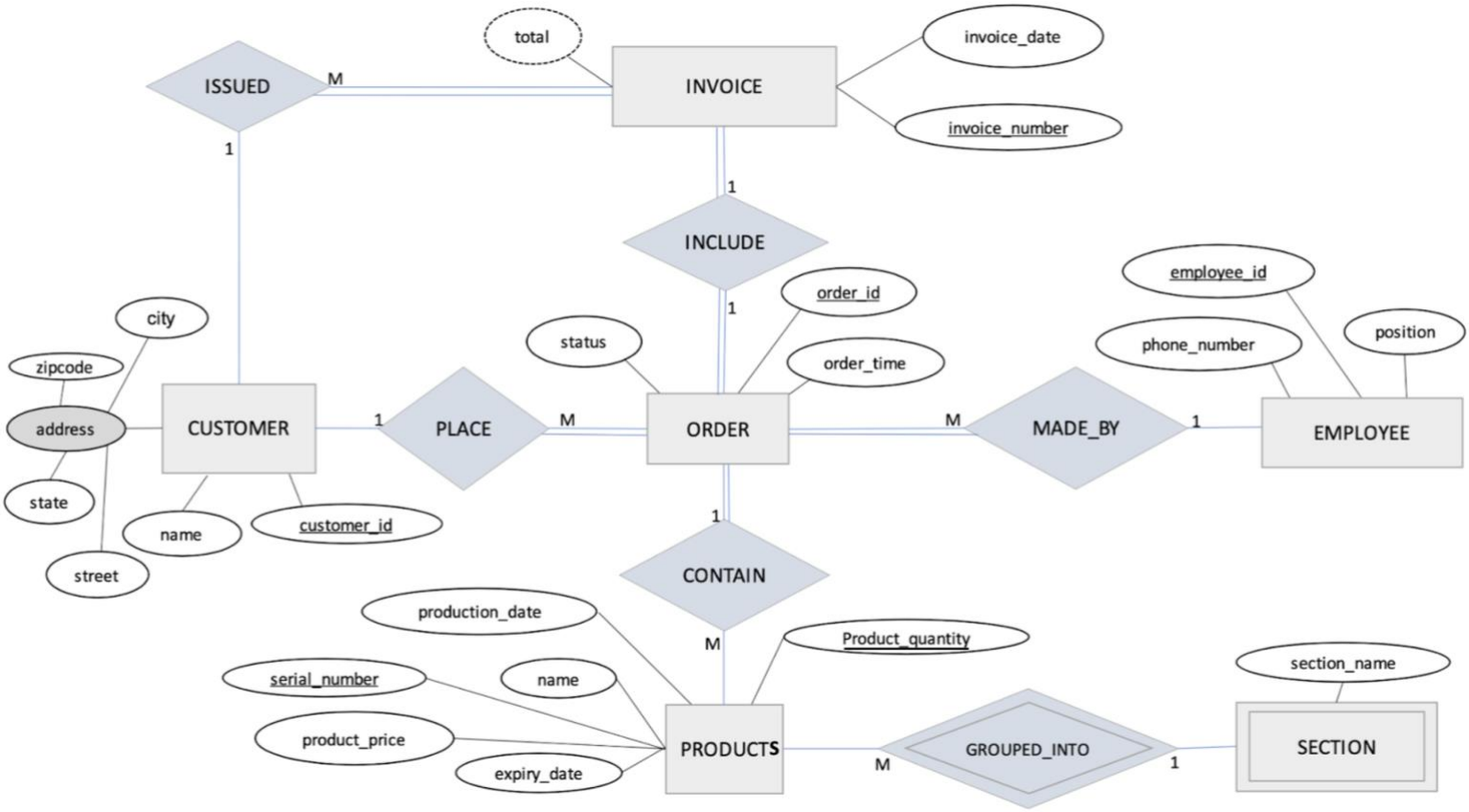
the identifier for an order is order_id ,and other attributes are order_time and order status, each ORDER contain one or more PRODUCTs,
many ORDERs is made by one EMPLOYEE .

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

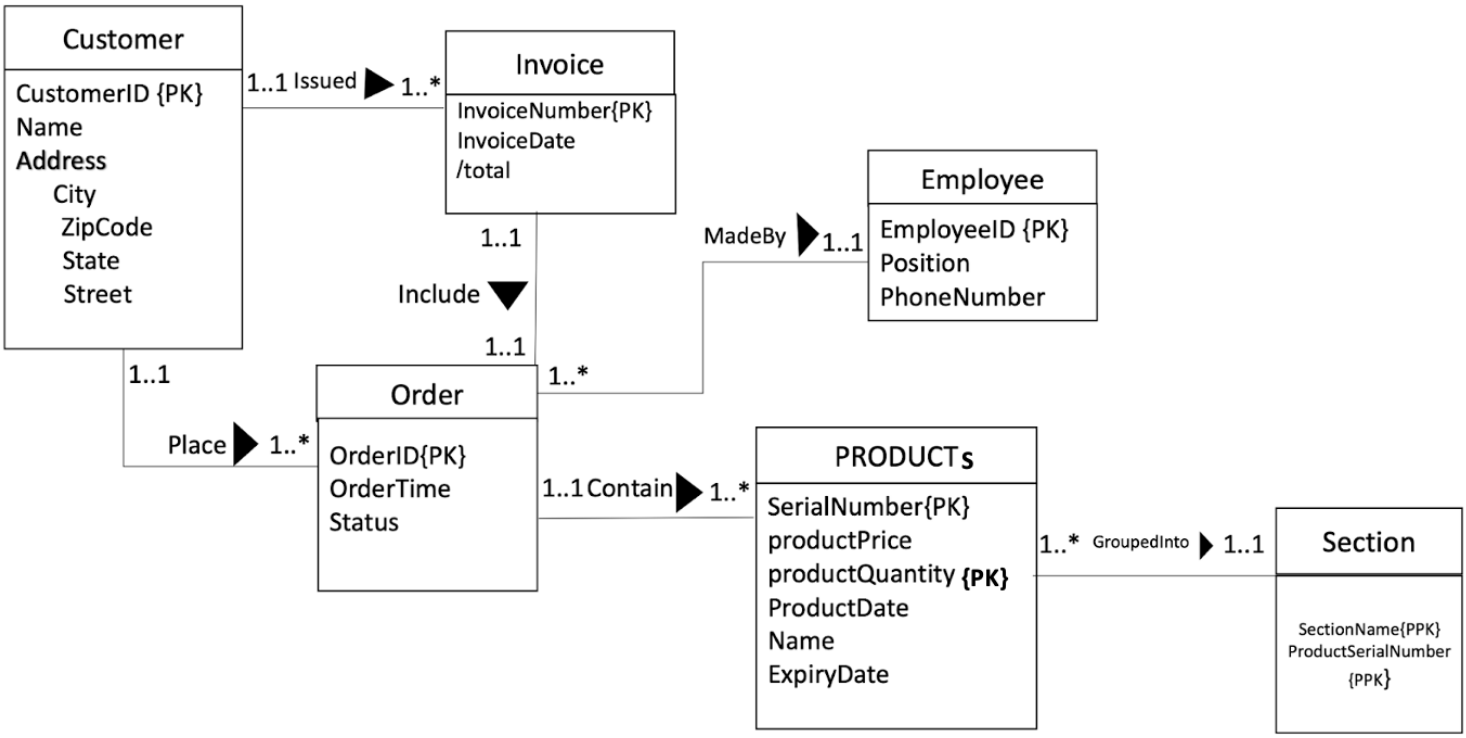
the online coffee store has several EMPLOYEEs the identifier for an employee is employee_id , other attributes include a specific position, phone number.

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

invoice_number	invoice_date

Customer

customer_id	customer_Name	addr_city	addr_zipcode	addr_state	addr_street

Order

order_id	order_time	status

Employee

employee_id	phone_number	position

Products

Product_serial_number	name	quantity	price	production_date	expiry_date

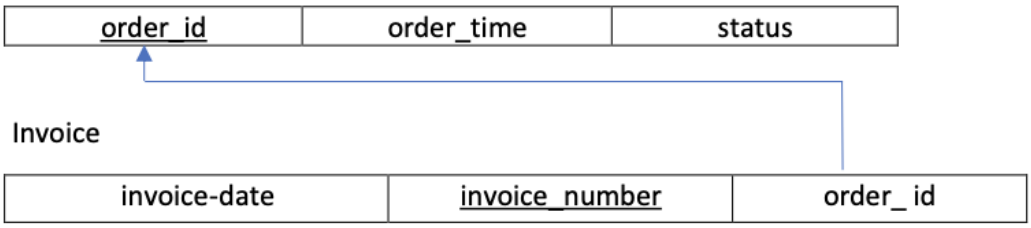
Step 2 : Mapping of weak entity into relation

Section

product_serial_number	section_name

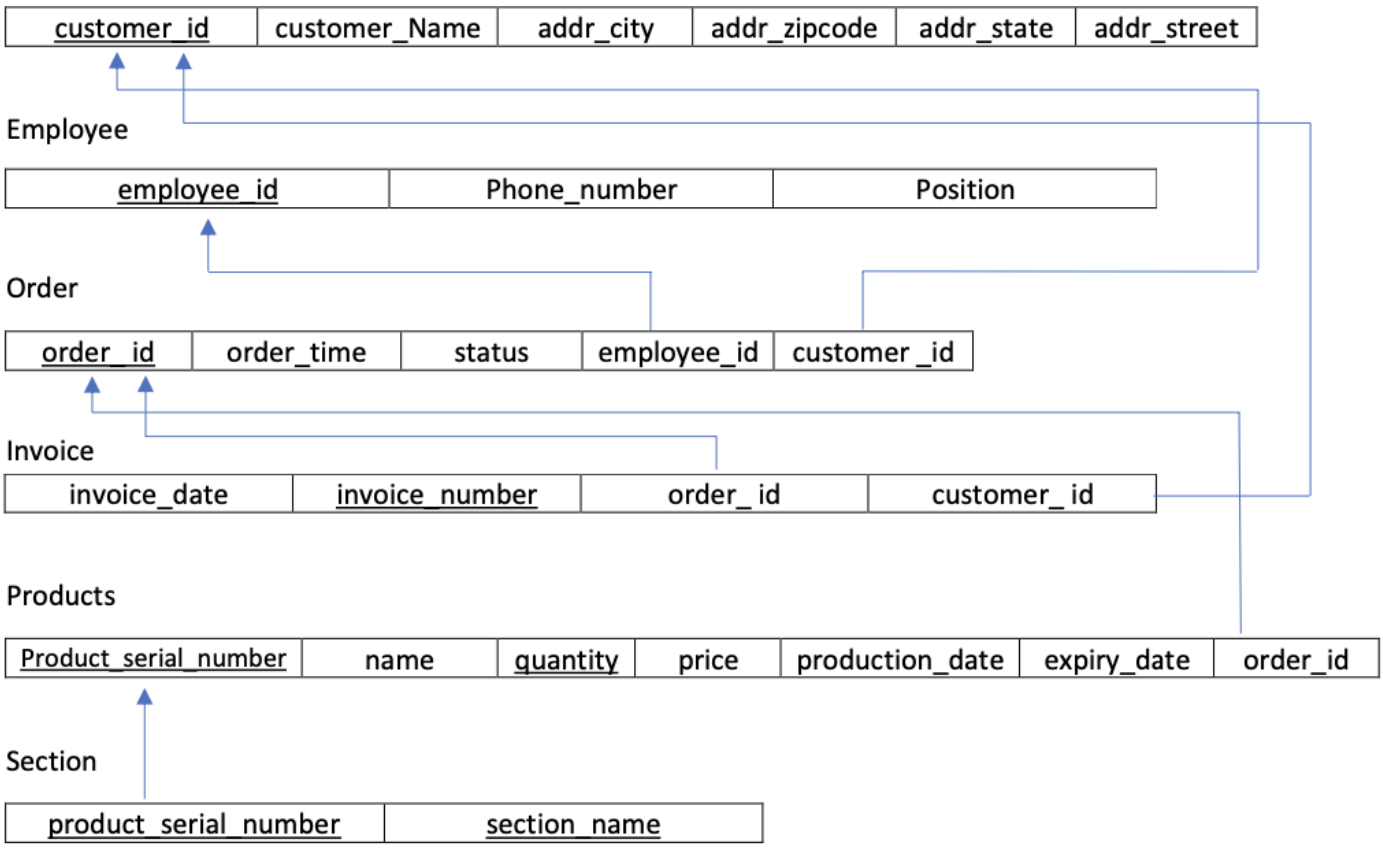
Step 3: Mapping of Binary 1:1

Order



Step 4: Mapping of binary 1:N

Customer



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

customer_id	customer_Name	addr_city	addr_zipcode	addr_state	addr_street

Employee

employee_id	Phone_number	Position

Order

order_ id	order_time	status	employee_id	customer _id

Invoice

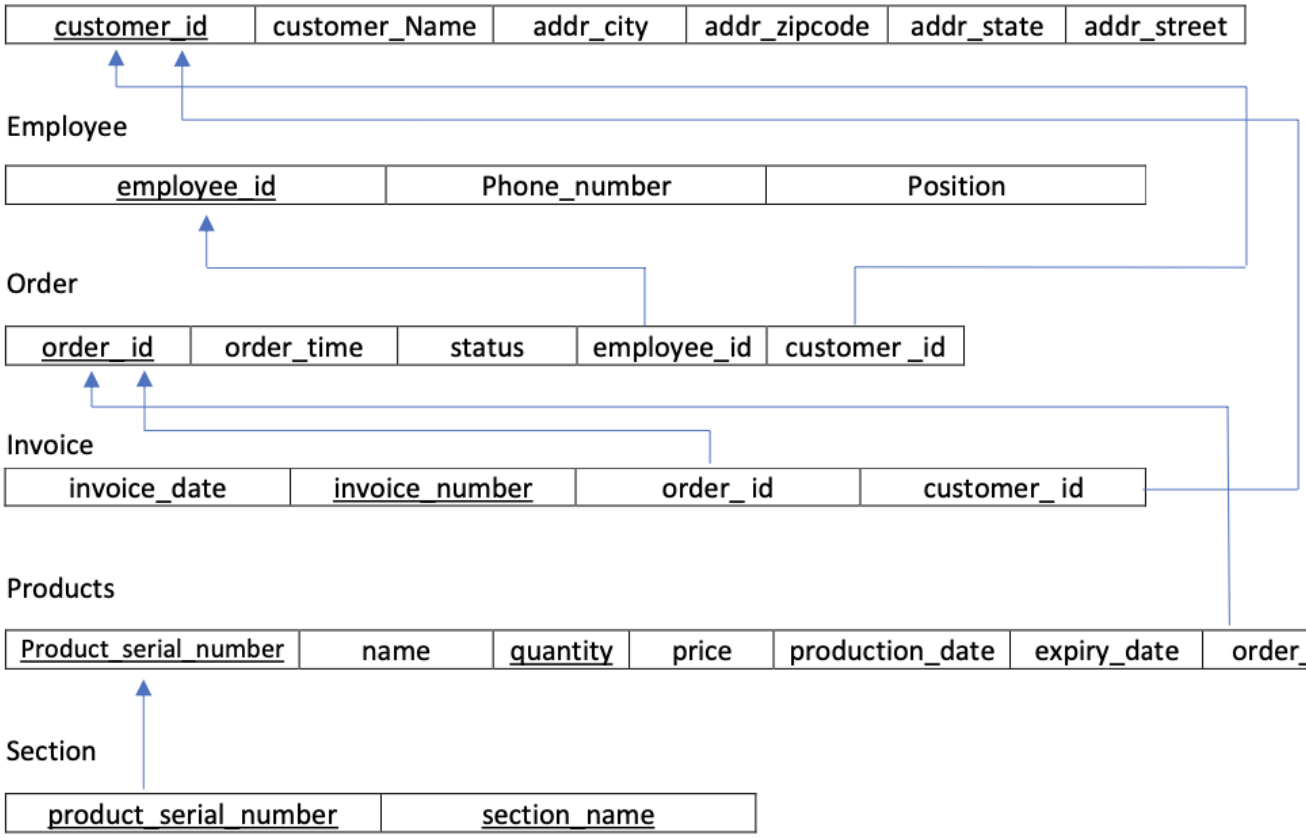
invoice_date	invoice_number	order_ id	customer_ id

Products

Product_serial_number	name	quantity	price	production_date	expiry_date	order_id

Section

product_serial_number	section_name



Normalization

1.Customer

customer_id	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

order_id	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

invoice_number	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

employee_id	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

serial_number	name	quantity	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

product_serial_number	section_name
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

customer_id	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

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

Order

order_id	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

invoice_number	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

Product_serial_number	name	quantity	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

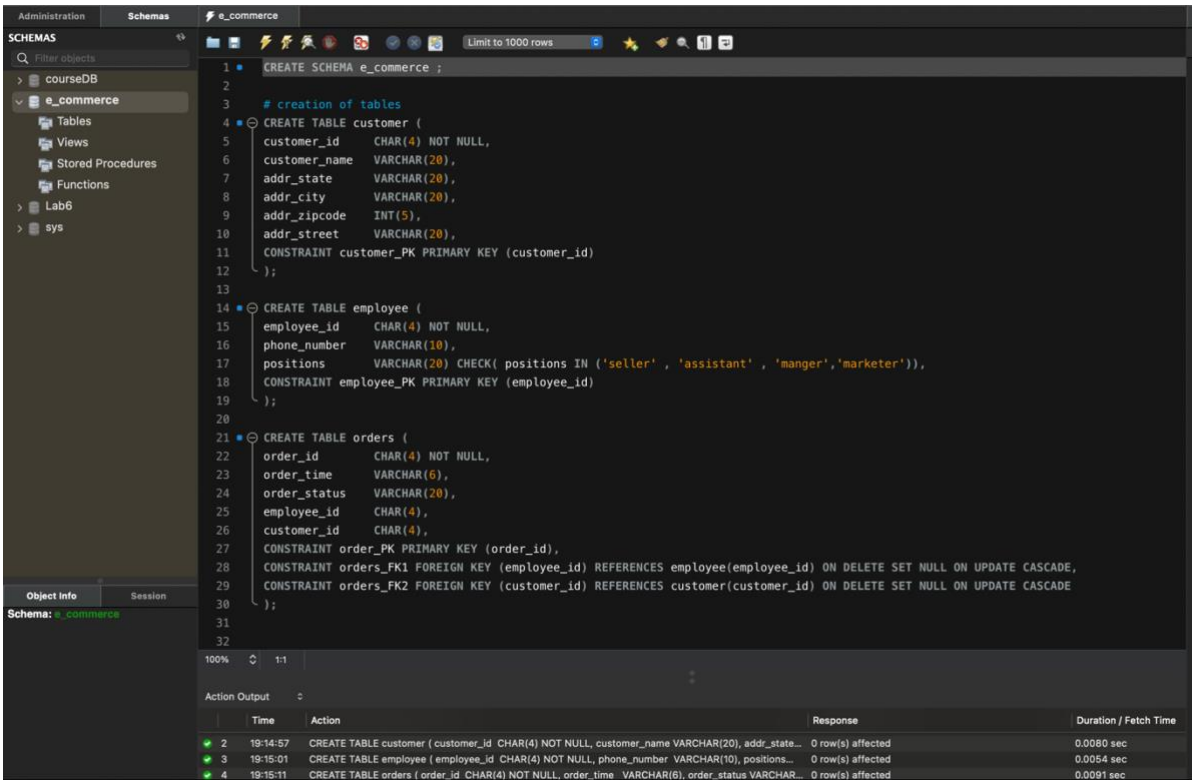
Product_serial_number	production_date	expiry_date
1234	12-oct-2021	1-nov-2022
1235	9-aug-2021	9-aug-2026
1234	1-sep-2021	1-oct-2022
1237	5-april-2020	5-april-2021
1238	3-dec-2021	3-dec-2022
1239	1-jan-2021	1-jan-2022

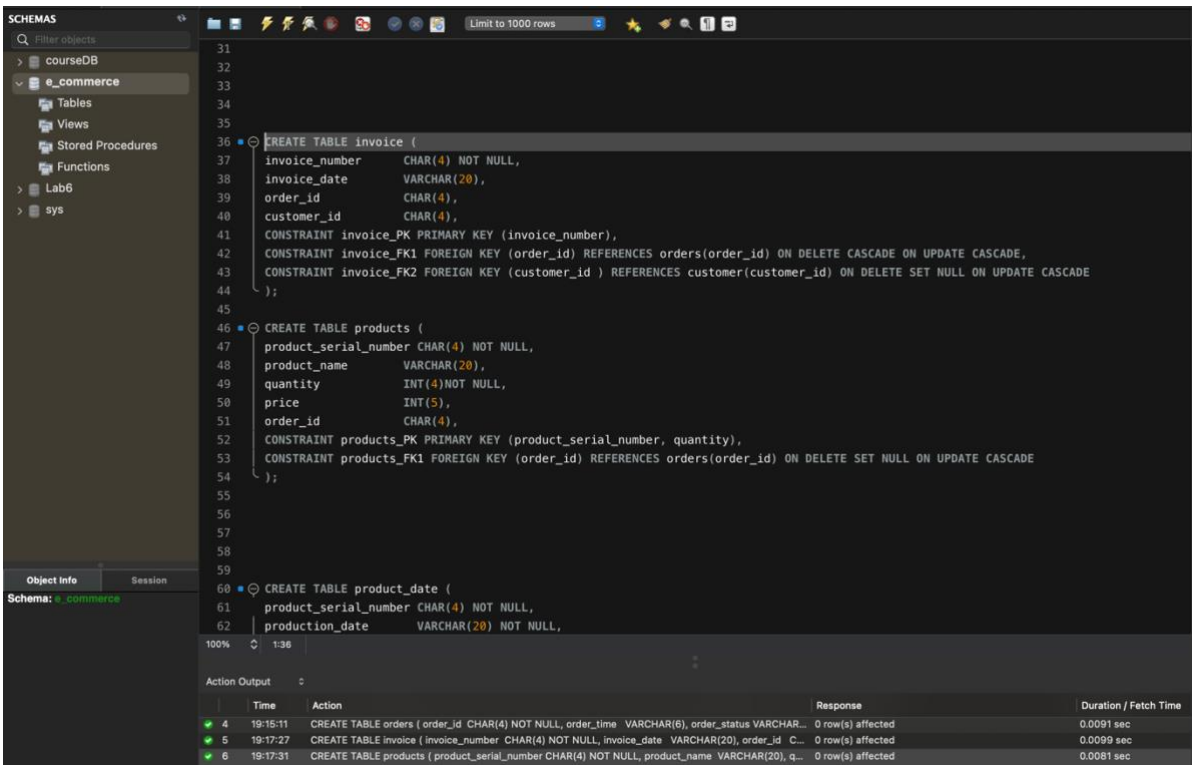
Section

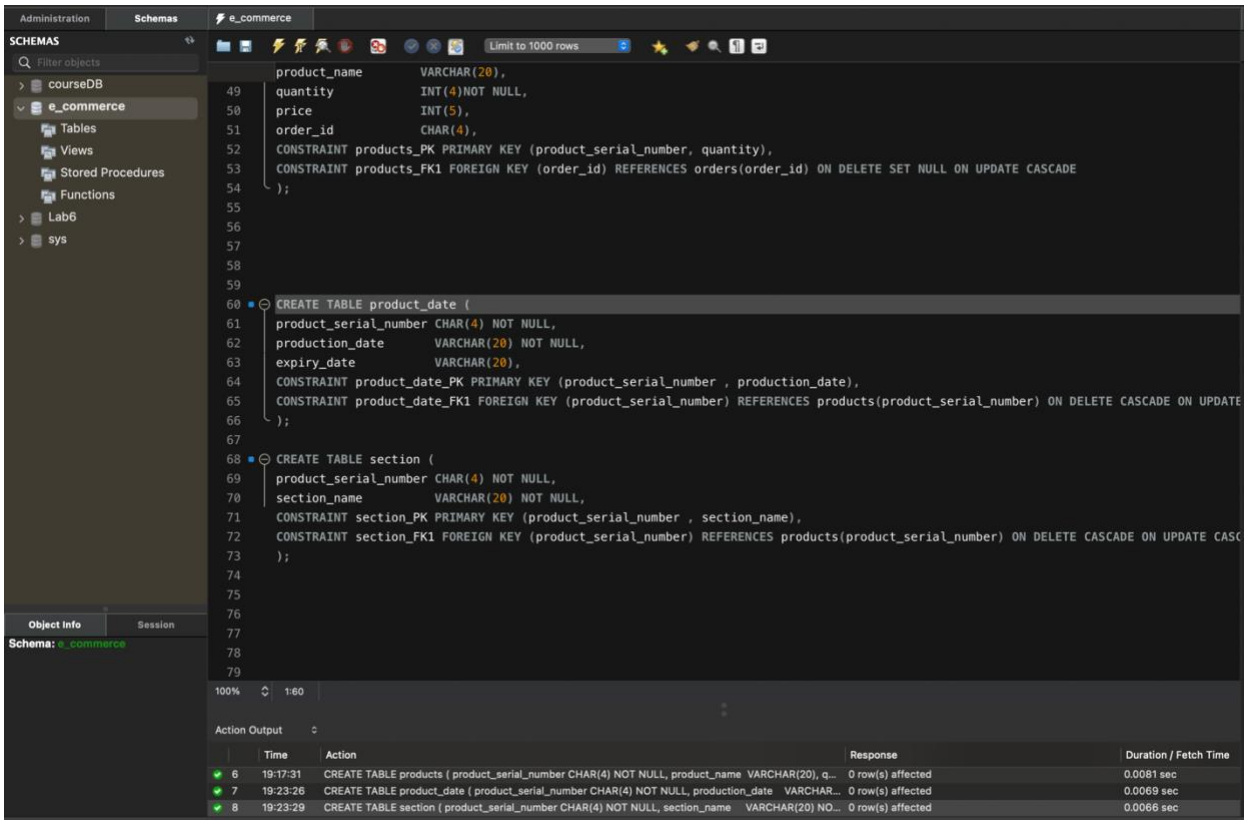
product_serial_number	section_name
1234	beans
1235	tools
1237	tools
1238	beans
1239	beans

SQL

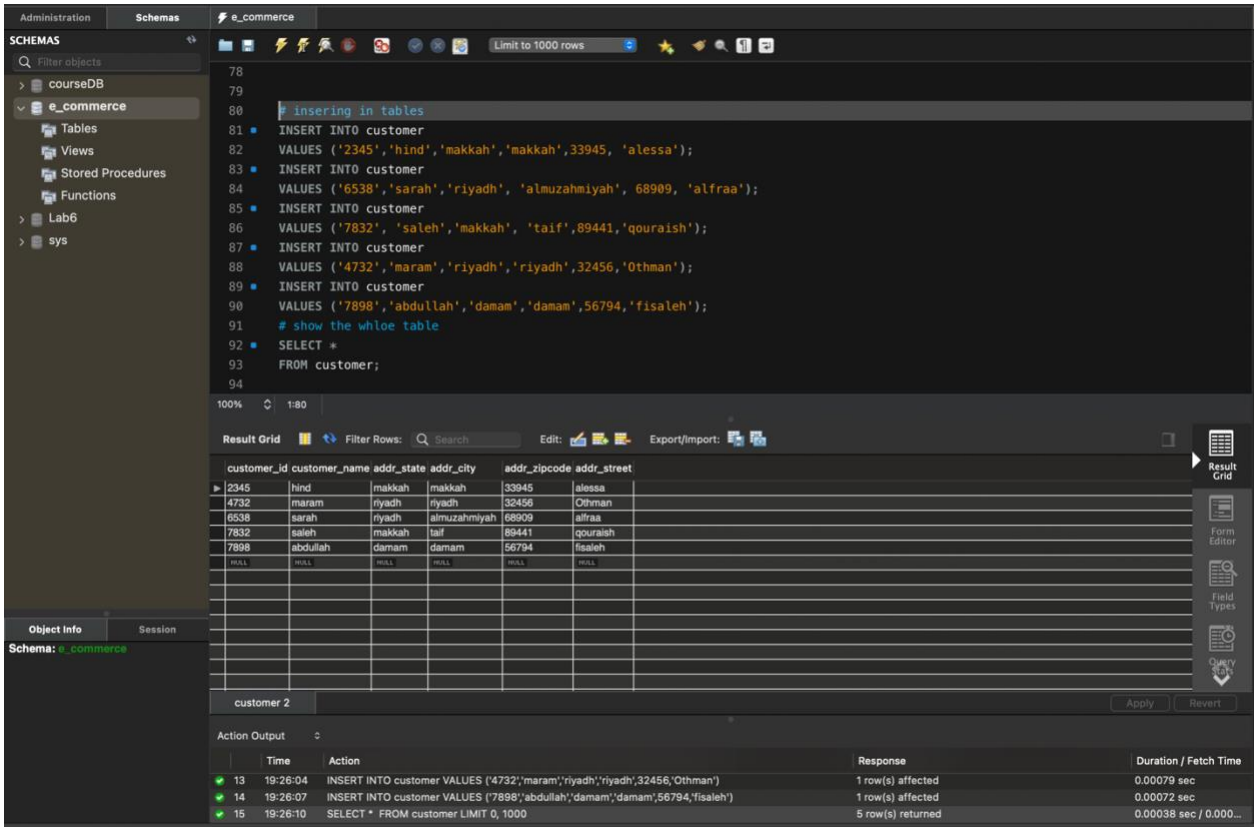
Creation of schema and tables

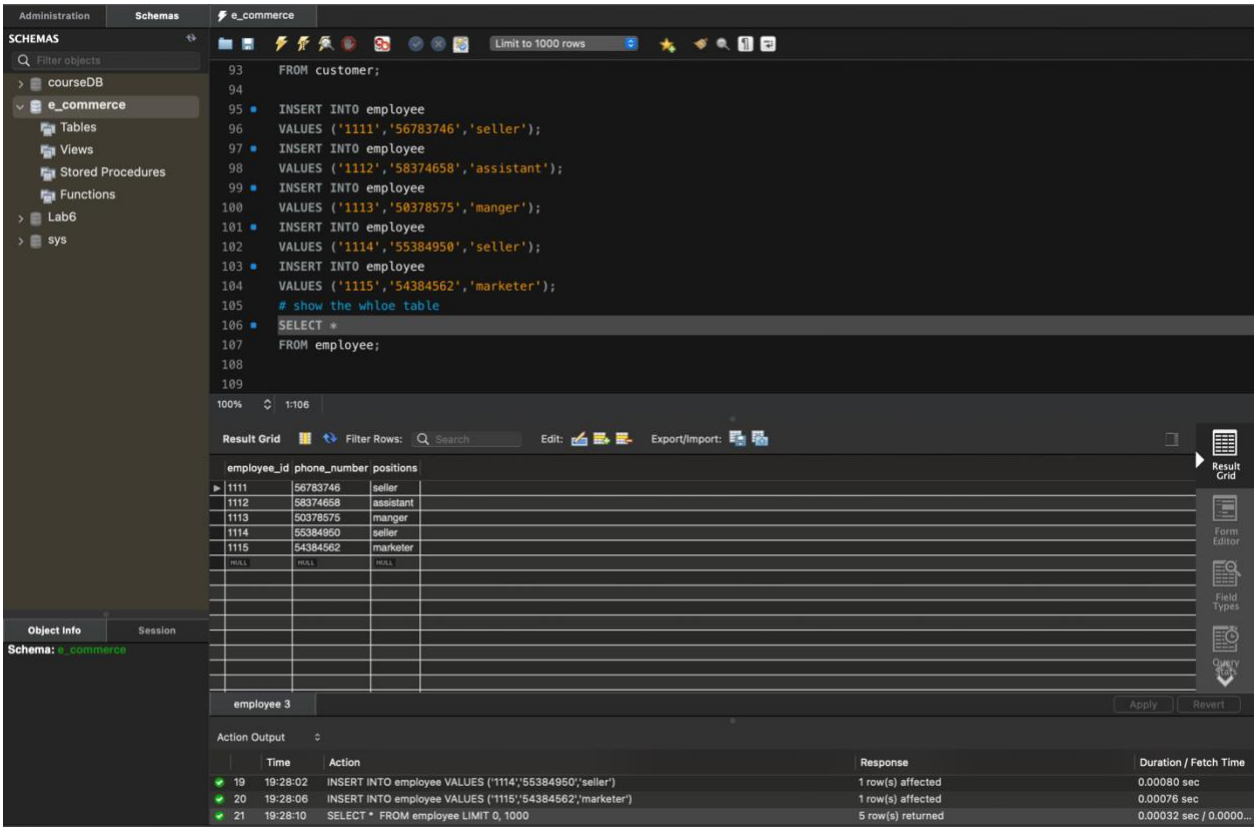


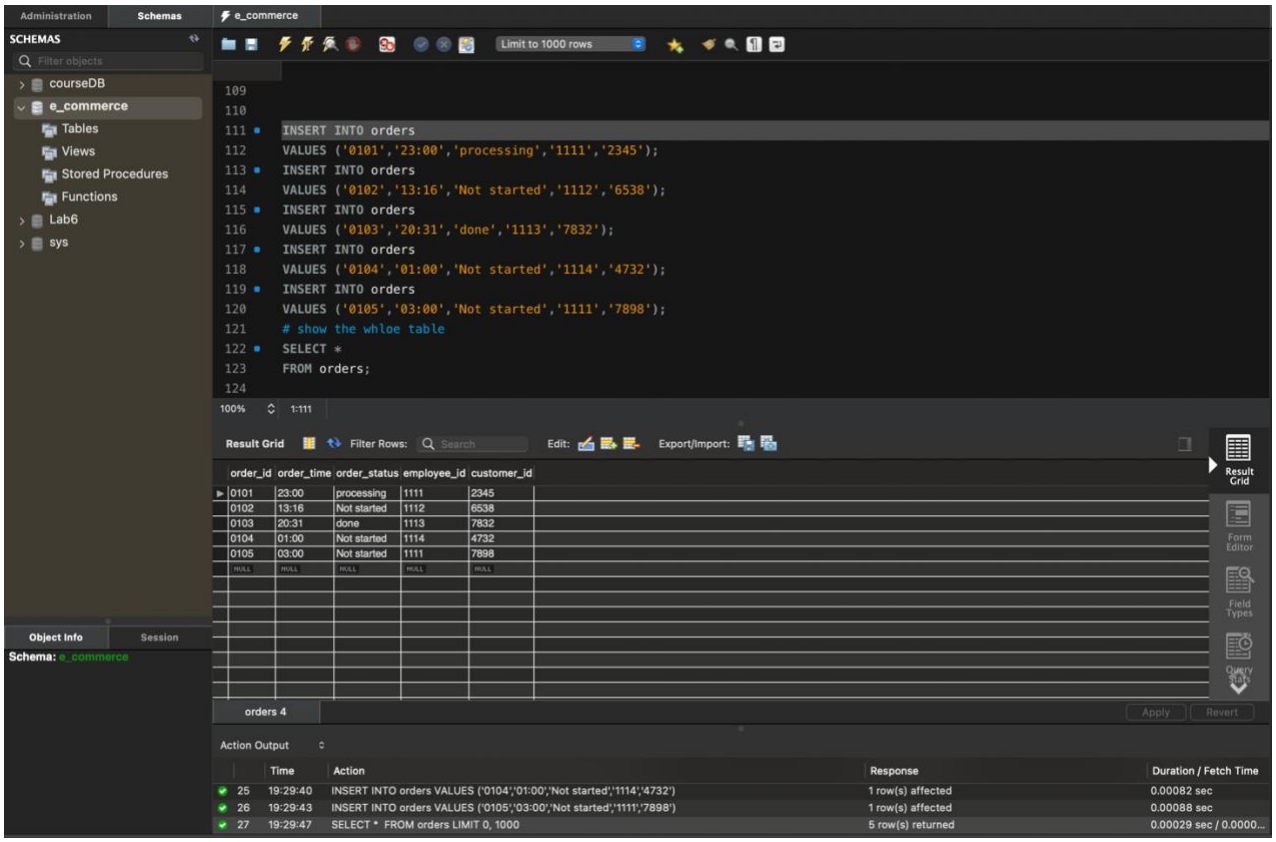


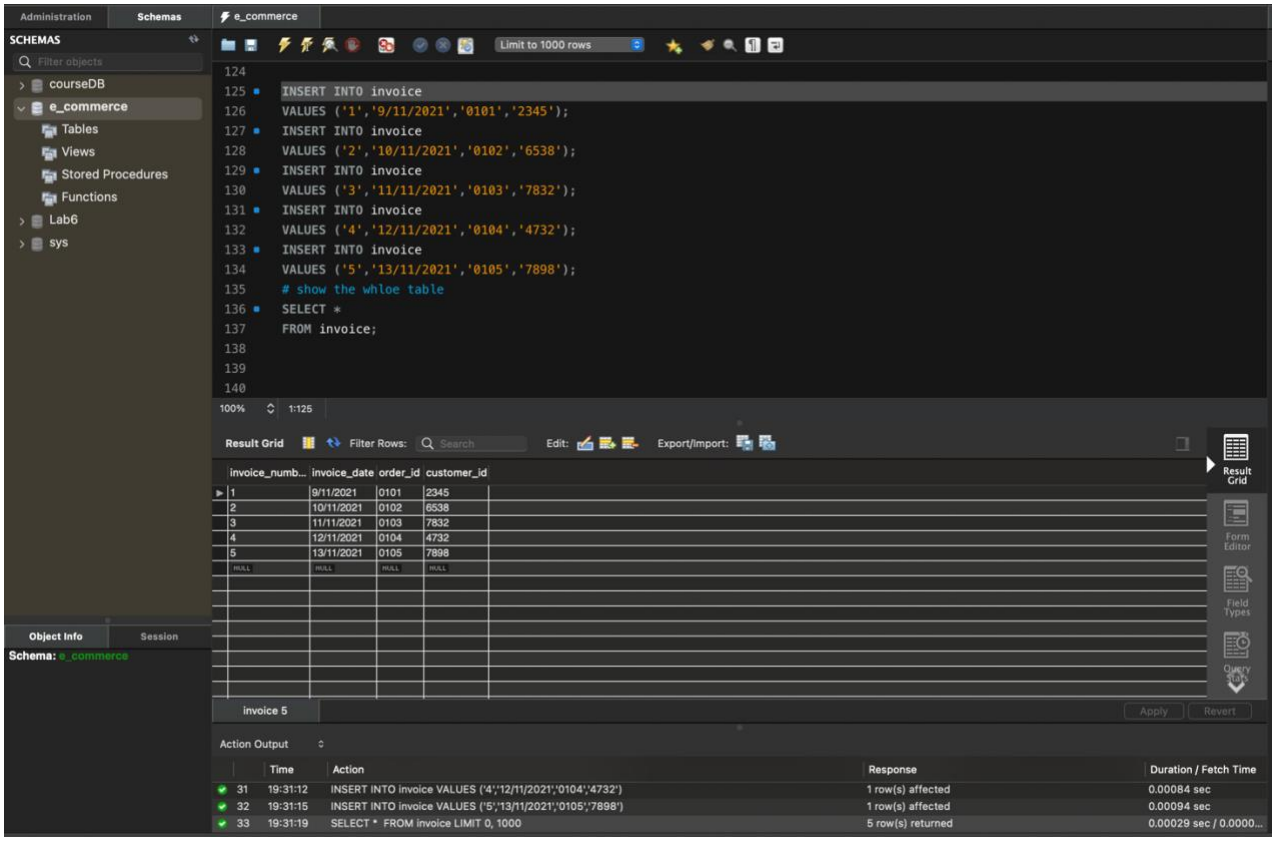

Administration
Schemas
e_commerce
SCHEMAS
Filter objects
courseDB
e_commerce
Tables
Views
Stored Procedures
Functions
Lab6
sys
Object Info
Session
Schema: e_commerce
Limit to 1000 rows
product_name VARCHAR(20),
quantity INT(4)NOT NULL,
price INT(5),
order_id CHAR(4),
CONSTRAINT products_PK PRIMARY KEY (product_serial_number, quantity),
CONSTRAINT products_FK1 FOREIGN KEY (order_id) REFERENCES orders(order_id) ON DELETE SET NULL ON UPDATE CASCADE
);
CREATE TABLE product_date (
product_serial_number CHAR(4) NOT NULL,
production_date VARCHAR(20) NOT NULL,
expiry_date VARCHAR(20),
CONSTRAINT product_date_PK PRIMARY KEY (product_serial_number , production_date),
CONSTRAINT product_date_FK1 FOREIGN KEY (product_serial_number) REFERENCES products(product_serial_number) ON DELETE CASCADE ON UPDATE
);
CREATE TABLE section (
product_serial_number CHAR(4) NOT NULL,
section_name VARCHAR(20) NOT NULL,
CONSTRAINT section_PK PRIMARY KEY (product_serial_number , section_name),
CONSTRAINT section_FK1 FOREIGN KEY (product_serial_number) REFERENCES products(product_serial_number) ON DELETE CASCADE ON UPDATE CASC
);
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

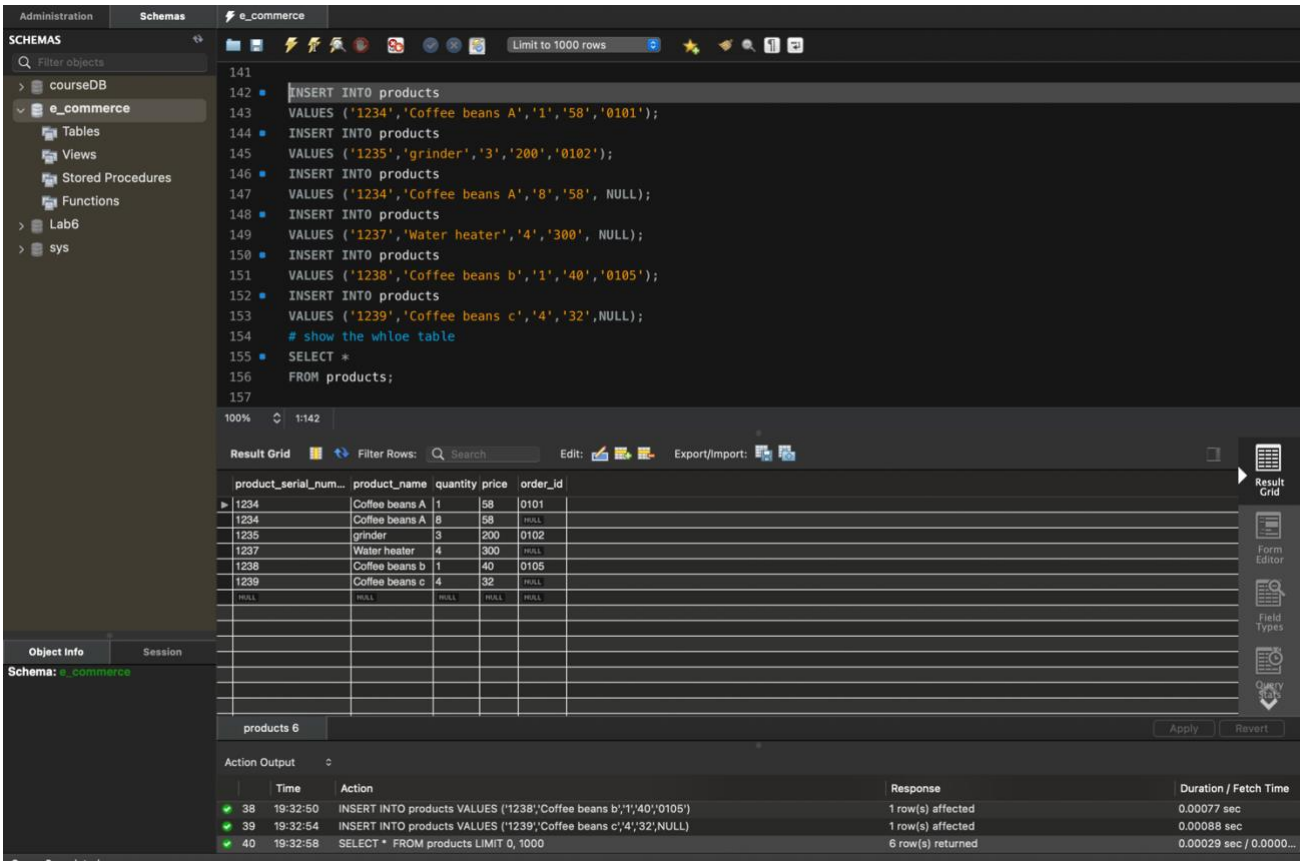
Inserting in tables

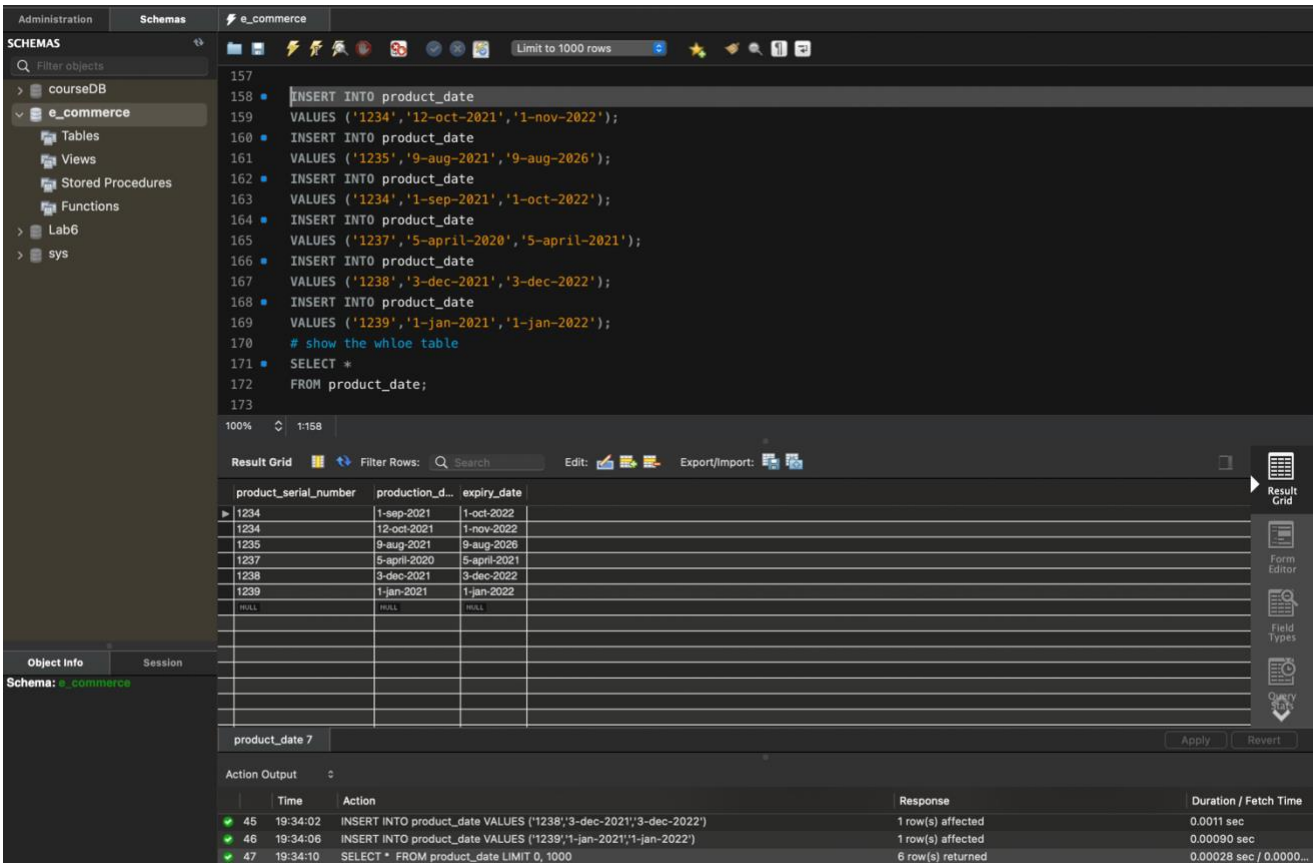


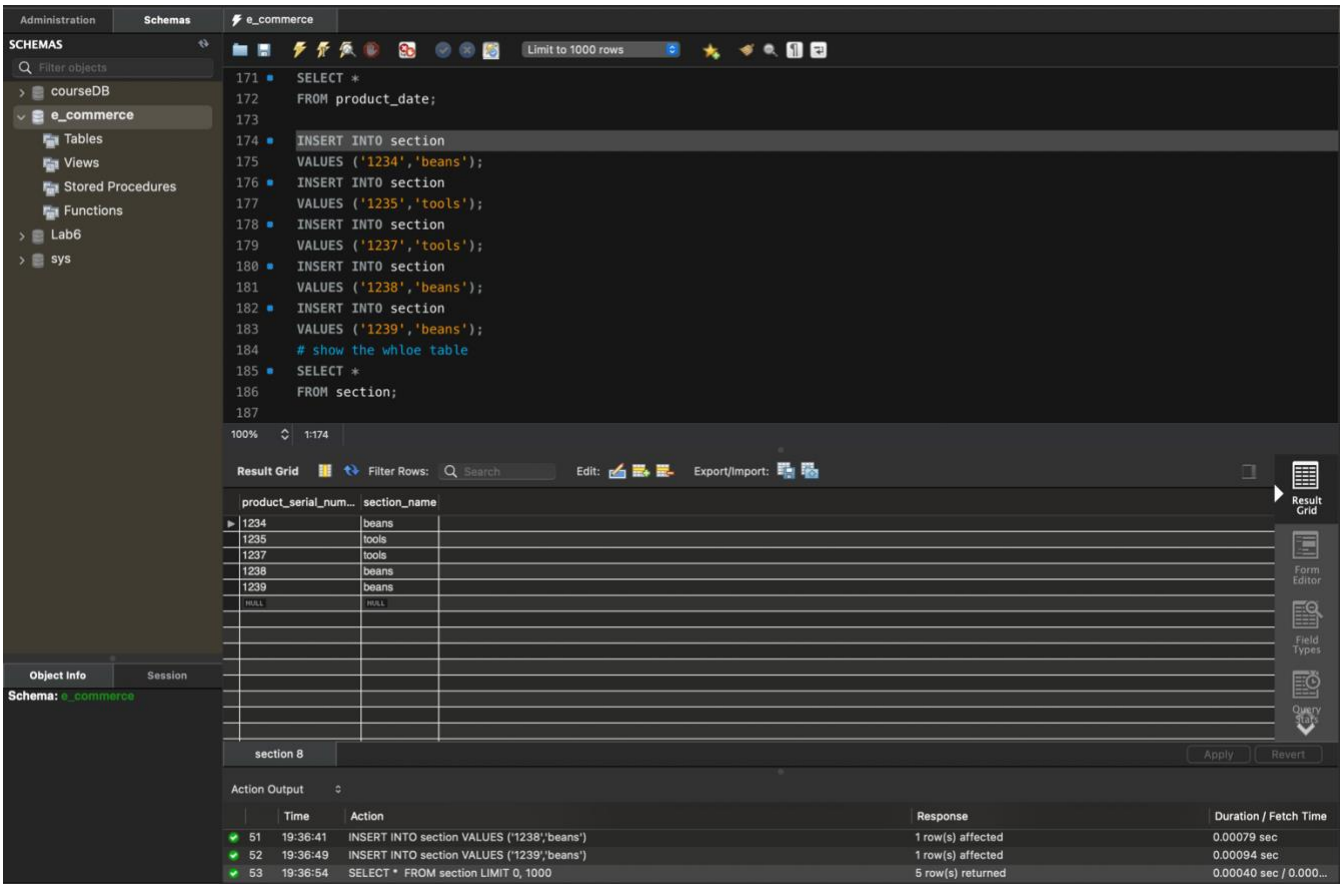



Administration
Schemas
e_commerce
SCHEMAS
Filter objects
courseDB
e_commerce
Tables
Views
Stored Procedures
Functions
Lab6
sys
Limit to 1000 rows
INSERT INTO orders
VALUES ('0101','23:00','processing','1111','2345');
INSERT INTO orders
VALUES ('0102','13:16','Not started','1112','6538');
INSERT INTO orders
VALUES ('0103','20:31','done','1113','7832');
INSERT INTO orders
VALUES ('0104','01:00','Not started','1114','4732');
INSERT INTO orders
VALUES ('0105','03:00','Not started','1111','7898');
show the whloe table
SELECT *
FROM orders;
Result Grid
Filter Rows:
Search
Edit:
Export/Import:
order_id order_time order_status employee_id customer_id
0101 23:00 processing 1111 2345
0102 13:16 Not started 1112 6538
0103 20:31 done 1113 7832
0104 01:00 Not started 1114 4732
0105 03:00 Not started 1111 7898
Object Info
Session
Schema: e_commerce
orders 4
Apply
Revert
Action Output
Time Action Response Duration / Fetch Time
25 19:29:40 INSERT INTO orders VALUES ('0104','01:00','Not started','1114','4732') 1 row(s) affected 0.00082 sec
26 19:29:43 INSERT INTO orders VALUES ('0105','03:00','Not started','1111','7898') 1 row(s) affected 0.00088 sec
27 19:29:47 SELECT * FROM orders LIMIT 0, 1000 5 row(s) returned 0.00029 sec / 0.0000...

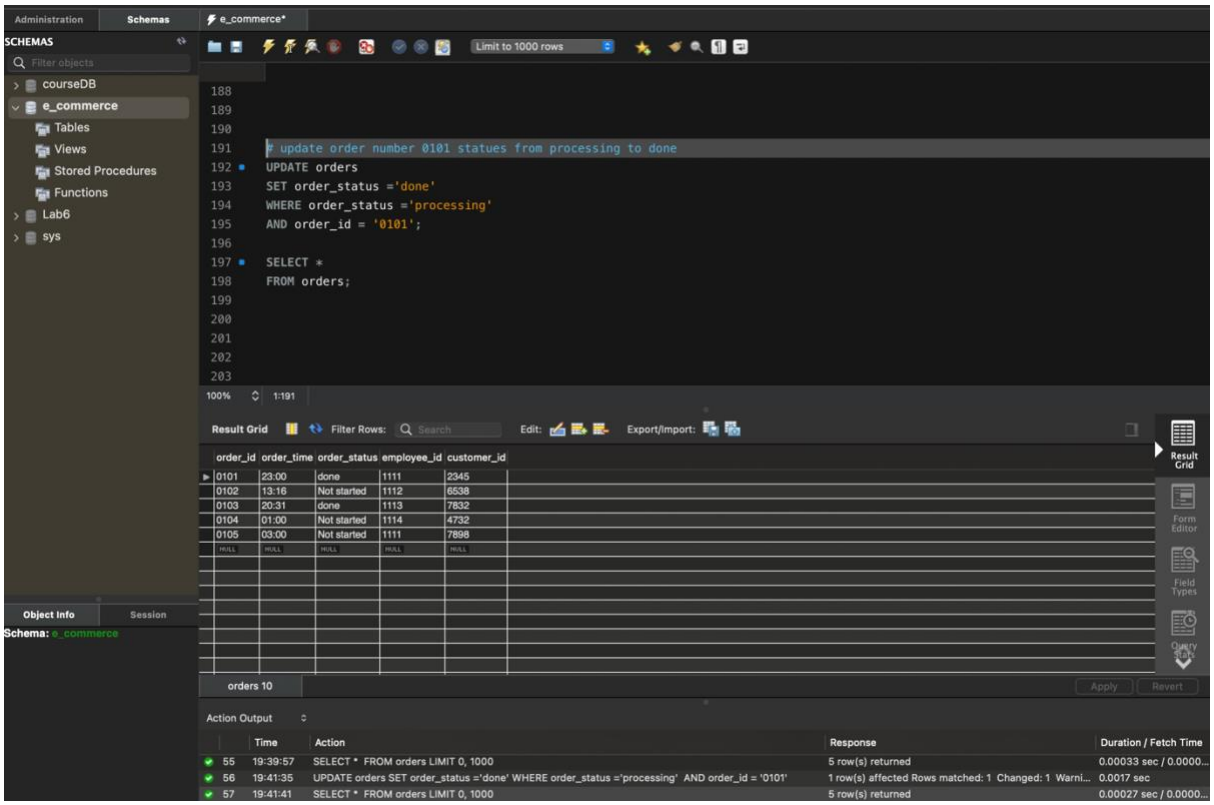

Administration
Schemas
e_commerce
SCHEMAS
Filter objects
courseDB
e_commerce
Tables
Views
Stored Procedures
Functions
Lab6
sys
Limit to 1000 rows
INSERT INTO invoice
VALUES ('1','9/11/2021','0101','2345');
INSERT INTO invoice
VALUES ('2','10/11/2021','0102','6538');
INSERT INTO invoice
VALUES ('3','11/11/2021','0103','7832');
INSERT INTO invoice
VALUES ('4','12/11/2021','0104','4732');
INSERT INTO invoice
VALUES ('5','13/11/2021','0105','7898');
show the whloe table
SELECT *
FROM invoice;
Result Grid
Filter Rows:
Search
Edit:
Export/Import:
invoice_numb... 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
Object Info
Session
Schema: e_commerce
invoice 5
Apply
Revert
Action Output
Time Action Response Duration / Fetch Time
31 19:31:12 INSERT INTO invoice VALUES ('4','12/11/2021','0104','4732') 1 row(s) affected 0.00084 sec
32 19:31:15 INSERT INTO invoice VALUES ('5','13/11/2021','0105','7898') 1 row(s) affected 0.00094 sec
33 19:31:19 SELECT * FROM invoice LIMIT 0, 1000 5 row(s) returned 0.00029 sec / 0.0000...

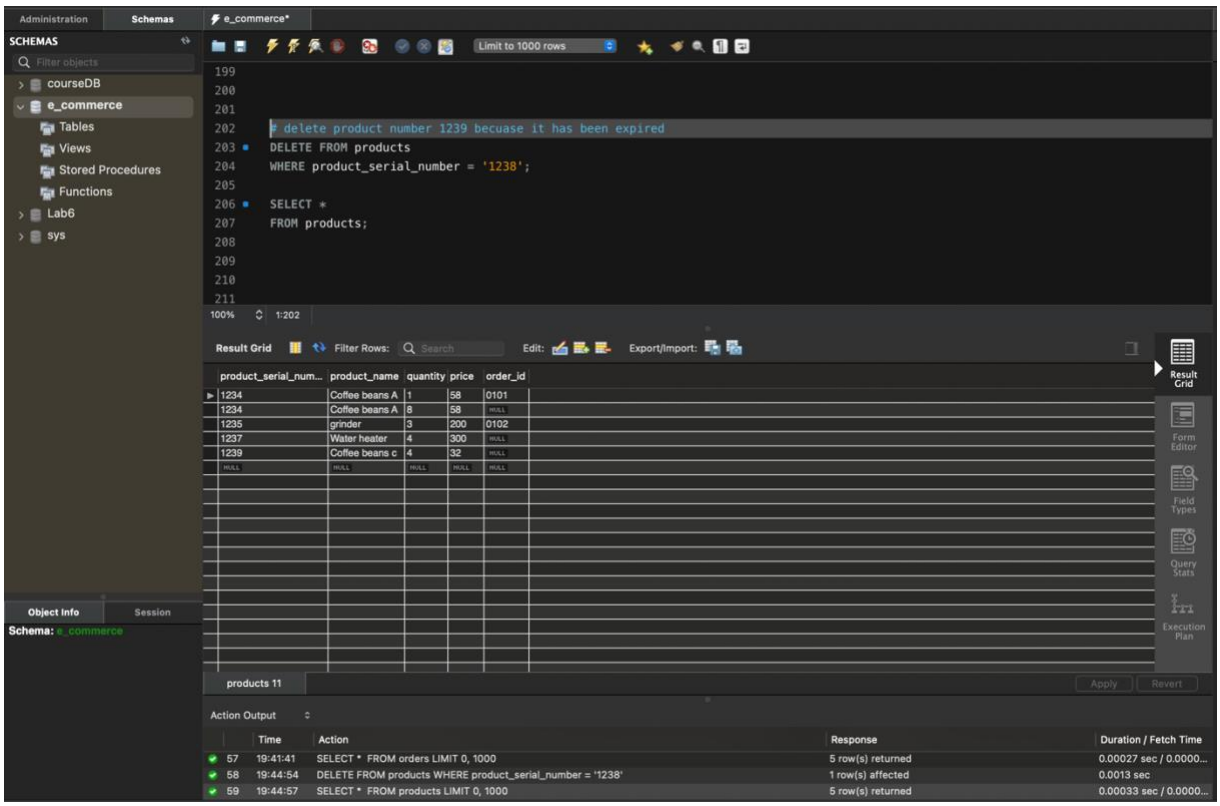

Administration
Schemas
e_commerce
SCHEMAS
Filter objects
courseDB
e_commerce
Tables
Views
Stored Procedures
Functions
Lab6
sys
Limit to 1000 rows
INSERT INTO products
VALUES ('1234','Coffee beans A','1','58','0101');
INSERT INTO products
VALUES ('1235','grinder','3','200','0102');
INSERT INTO products
VALUES ('1234','Coffee beans A','8','58', NULL);
INSERT INTO products
VALUES ('1237','Water heater','4','300', NULL);
INSERT INTO products
VALUES ('1238','Coffee beans b','1','40','0105');
INSERT INTO products
VALUES ('1239','Coffee beans c','4','32',NULL);
show the whloe table
SELECT *
FROM products;
Result Grid
Filter Rows:
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
1235 grinder 3 200 0102
1237 Water heater 4 300
1238 Coffee beans b 1 40 0105
1239 Coffee beans c 4 32
products 6
Apply
Revert
Object Info
Session
Schema: e_commerce
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
INSERT INTO product_date
VALUES ('1234','12-oct-2021','1-nov-2022');
INSERT INTO product_date
VALUES ('1235','9-aug-2021','9-aug-2026');
INSERT INTO product_date
VALUES ('1234','1-sep-2021','1-oct-2022');
INSERT INTO product_date
VALUES ('1237','5-april-2020','5-april-2021');
INSERT INTO product_date
VALUES ('1238','3-dec-2021','3-dec-2022');
INSERT INTO product_date
VALUES ('1239','1-jan-2021','1-jan-2022');
show the whloe table
SELECT *
FROM product_date;
Result Grid
Filter Rows:
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
product_date 7
Apply
Revert
Object Info
Session
Schema: e_commerce
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...

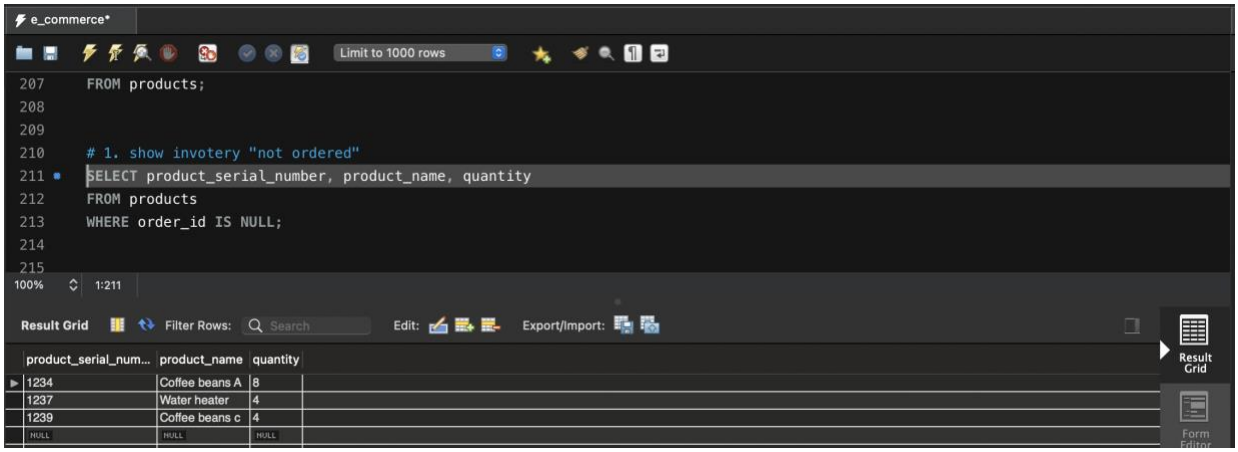

Administration
Schemas
e_commerce
SCHEMAS
Filter objects
courseDB
e_commerce
Tables
Views
Stored Procedures
Functions
Lab6
sys
Limit to 1000 rows
171 SELECT *
172 FROM product_date;
173
174 INSERT INTO section
175 VALUES ('1234','beans');
176 INSERT INTO section
177 VALUES ('1235','tools');
178 INSERT INTO section
179 VALUES ('1237','tools');
180 INSERT INTO section
181 VALUES ('1238','beans');
182 INSERT INTO section
183 VALUES ('1239','beans');
184 # show the whloe table
185 SELECT *
186 FROM section;
187
100%
1:174
Result Grid
Filter Rows:
Search
Edit:
Export/Import:
product_serial_num...
section_name
1234 beans
1235 tools
1237 tools
1238 beans
1239 beans
Result Grid
Form Editor
Field Types
Query Stats
Object Info
Session
Schema: e_commerce
section 8
Apply
Revert
Action Output
Time
Action
Response
Duration / Fetch Time
51 19:36:41 INSERT INTO section VALUES ('1238','beans') 1 row(s) affected 0.00079 sec
52 19:36:49 INSERT INTO section VALUES ('1239','beans') 1 row(s) affected 0.00094 sec
53 19:36:54 SELECT * FROM section LIMIT 0, 1000 5 row(s) returned 0.00040 sec / 0.000...

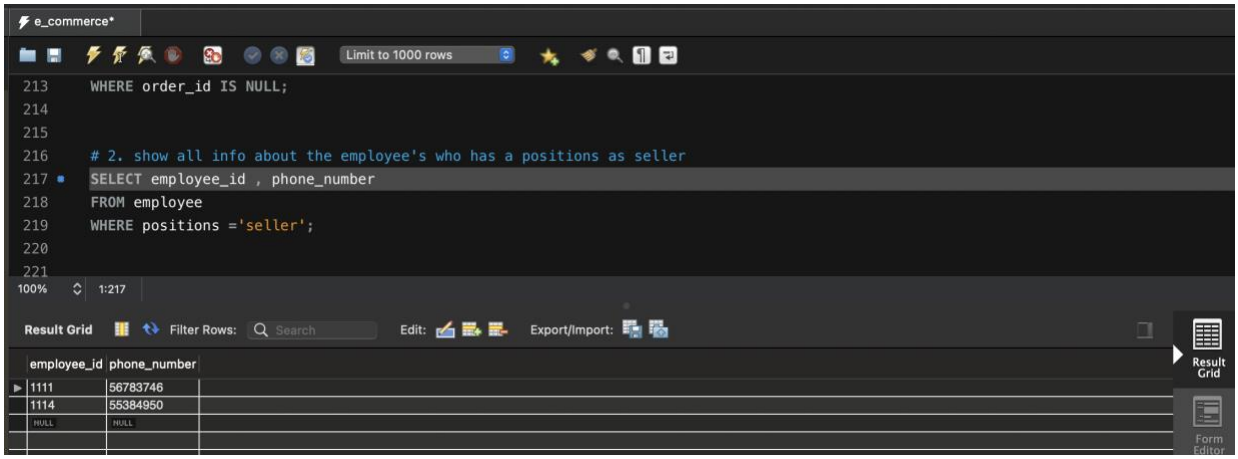
Update and delete commands

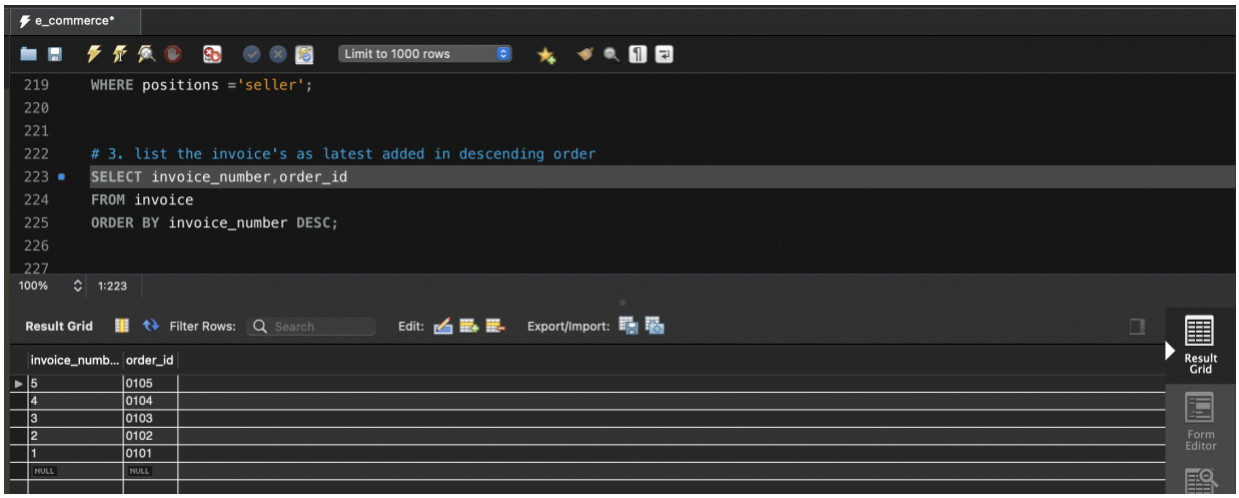


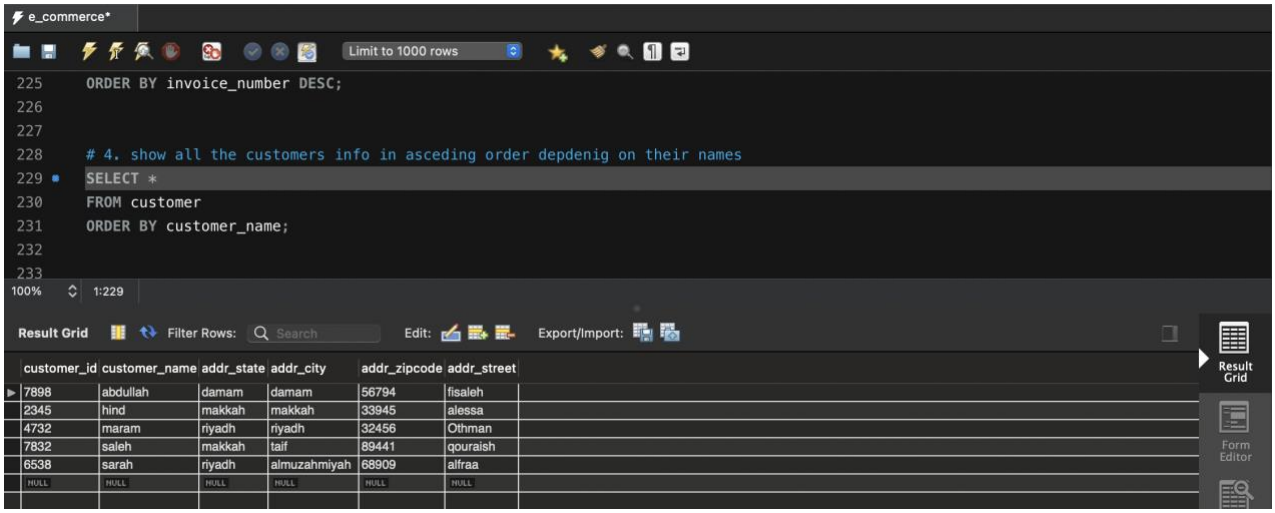


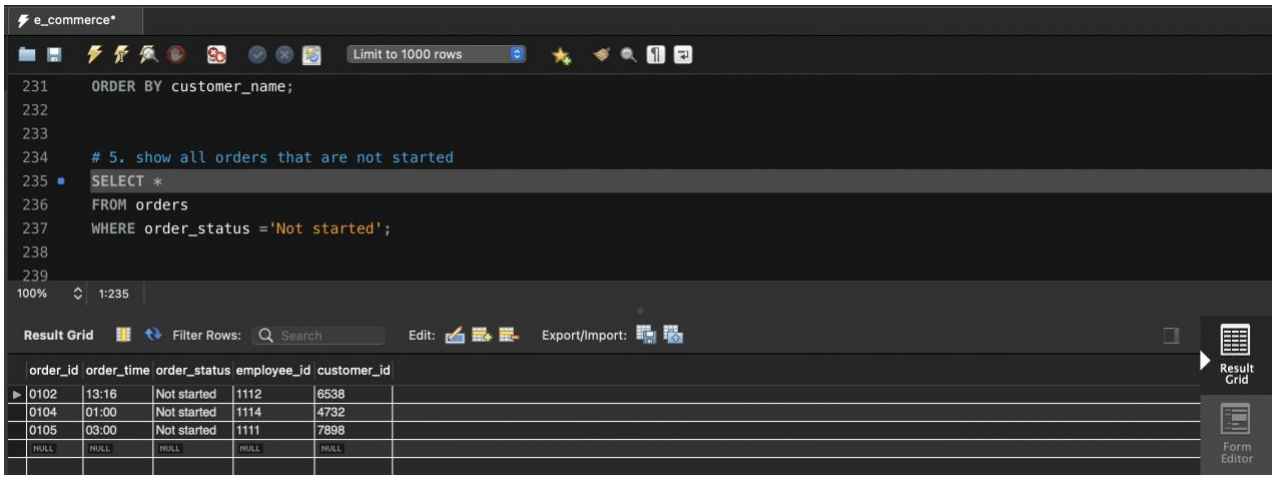
select commands

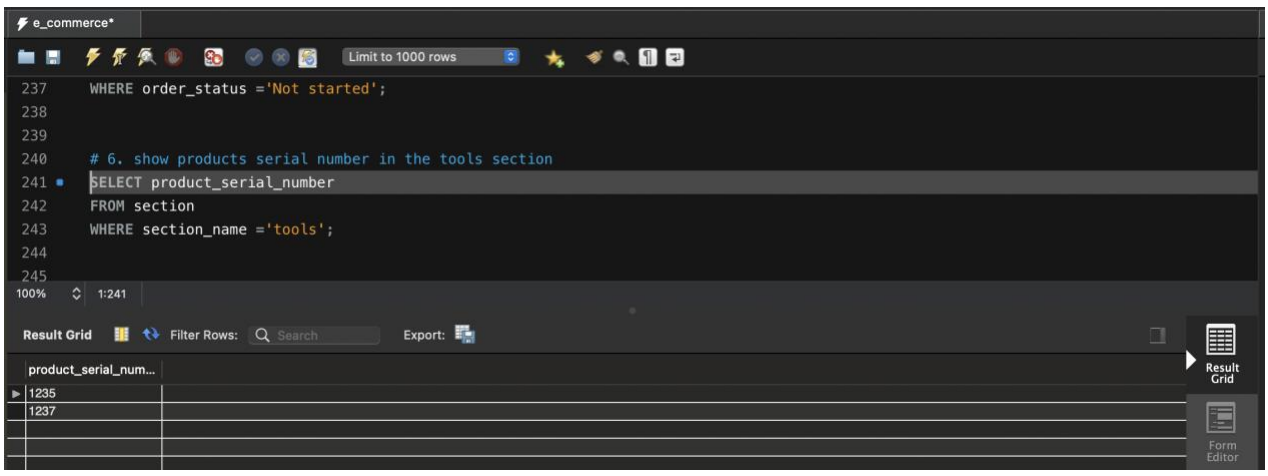


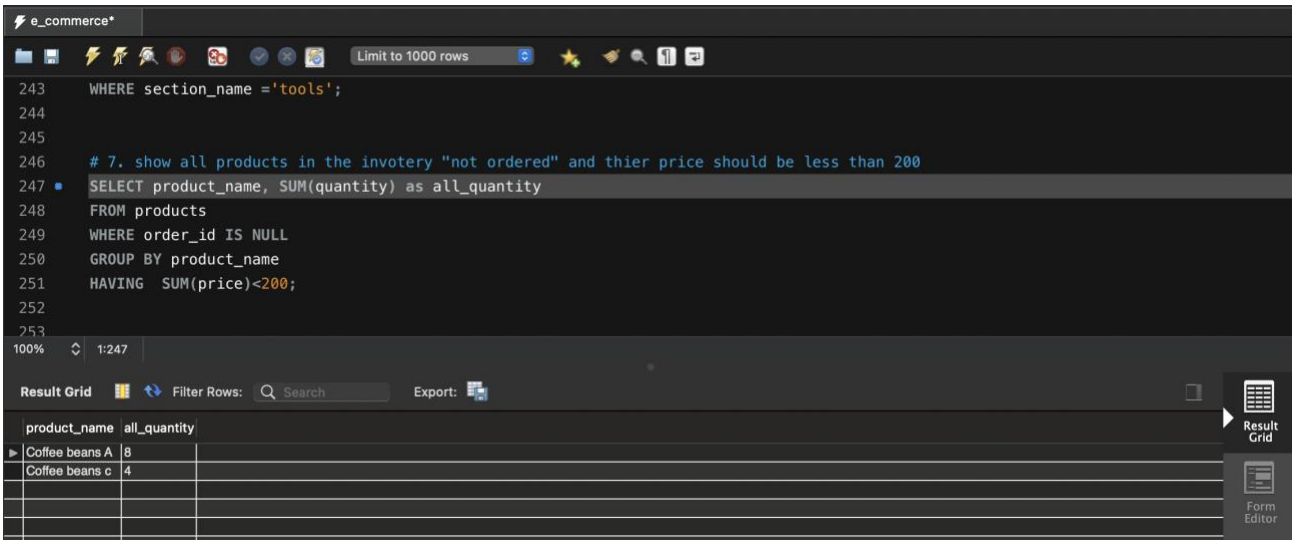


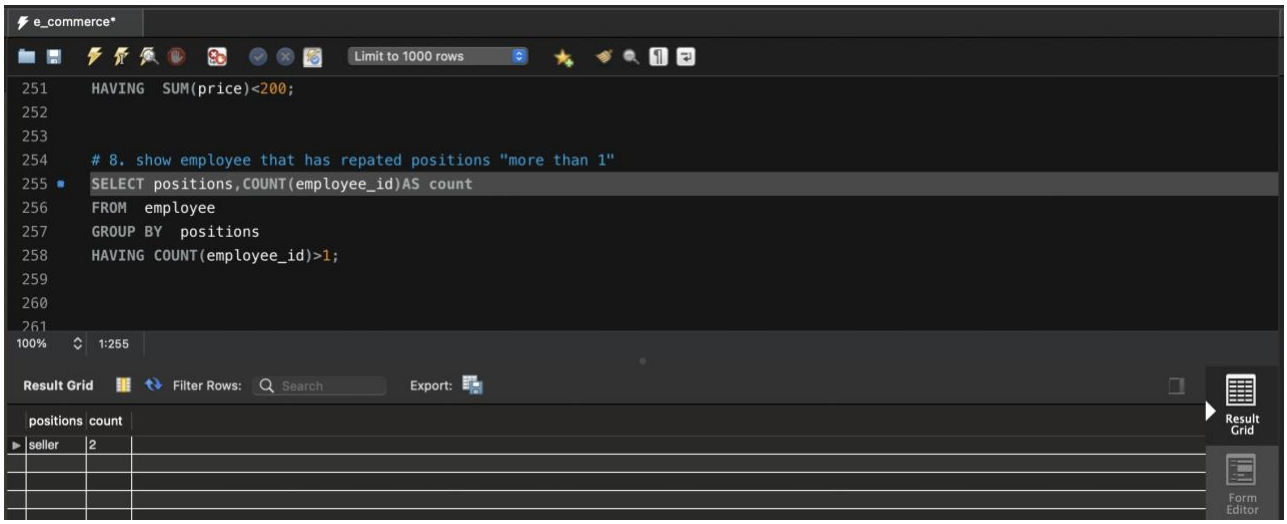


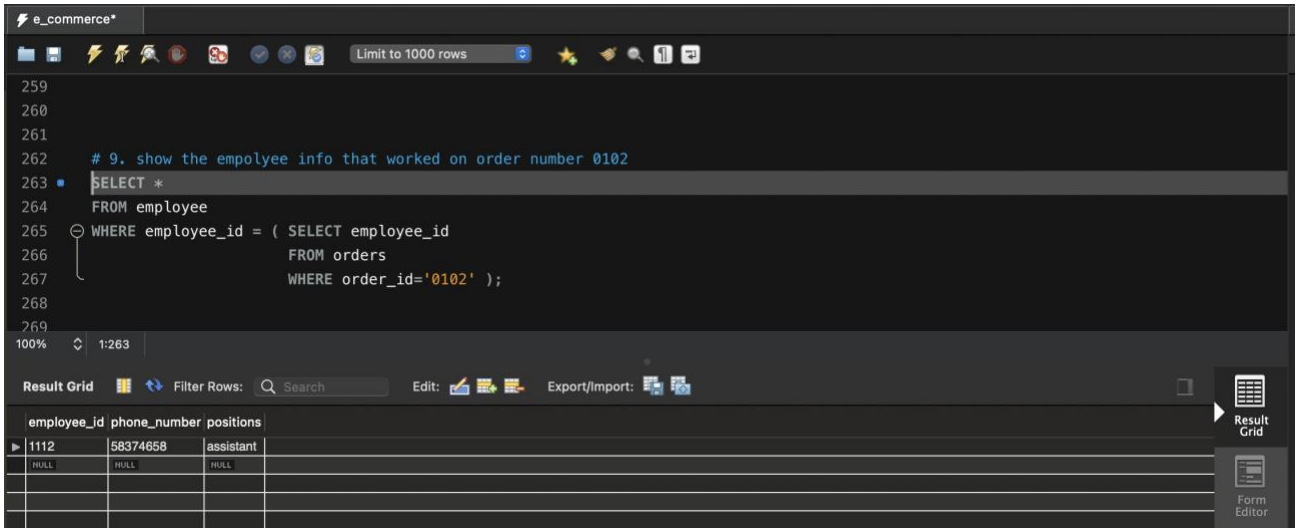

e_commerce*
Limit to 1000 rows
ORDER BY invoice_number DESC;
4. show all the customers info in asceding order depdenig on their names
SELECT *
FROM customer
ORDER BY customer_name;
100% 1:229
Result Grid Filter Rows: Search Edit: Export/Import:
customer_id customer_name addr_state addr_city addr_zipcode 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 qouraish
6538 sarah riyadh almuzahmiyah 68909 alfraa
Result Grid
Form Editor

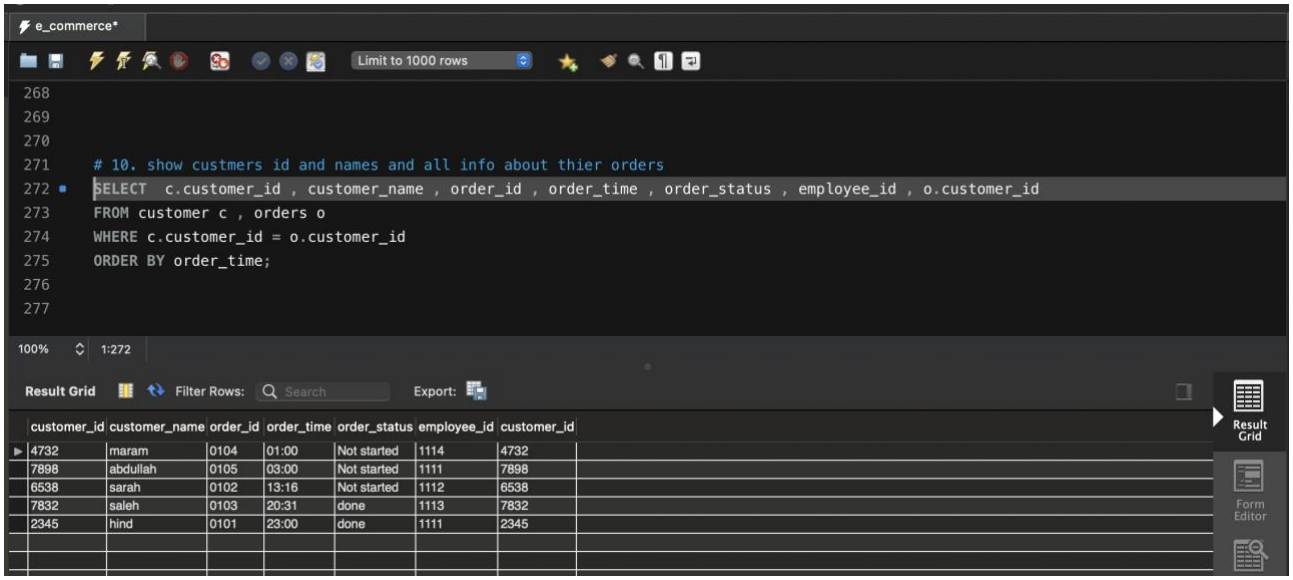

e_commerce*
Limit to 1000 rows
ORDER BY customer_name;
5. show all orders that are not started
SELECT *
FROM orders
WHERE order_status ='Not started';
100% 1:235
Result Grid Filter Rows: Search Edit: Export/Import:
order_id order_time order_status employee_id customer_id
0102 13:16 Not started 1112 6538
0104 01:00 Not started 1114 4732
0105 03:00 Not started 1111 7898
Result Grid
Form Editor


e_commerce*
Limit to 1000 rows
WHERE order_status ='Not started';
6. show products serial number in the tools section
SELECT product_serial_number
FROM section
WHERE section_name ='tools';
100% 1:241
Result Grid Filter Rows: Search Export:
product_serial_num...
1235
1237
Result Grid
Form Editor


e_commerce*
Limit to 1000 rows
WHERE section_name ='tools';
7. show all products in the invotery "not ordered" and thier price should be less than 200
SELECT product_name, SUM(quantity) as all_quantity
FROM products
WHERE order_id IS NULL
GROUP BY product_name
HAVING SUM(price)<200;
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
HAVING SUM(price)<200;
8. show employee that has repated positions "more than 1"
SELECT positions,COUNT(employee_id)AS count
FROM employee
GROUP BY positions
HAVING COUNT(employee_id)>1;
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 custmers 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