Assignment A3

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Index Table:

Question 1: Write the create table statements for the following ERD.

MySQL code for whole assignment is also attached as text file in the assignment submission.

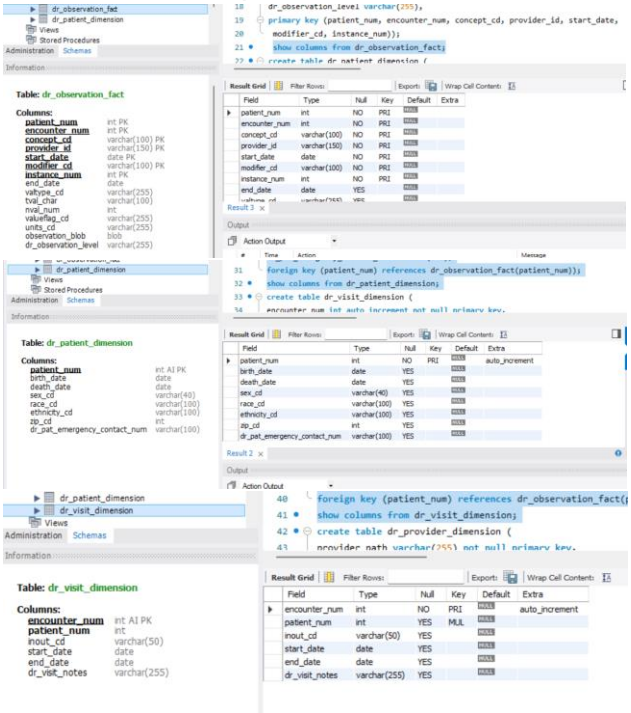
Answer:

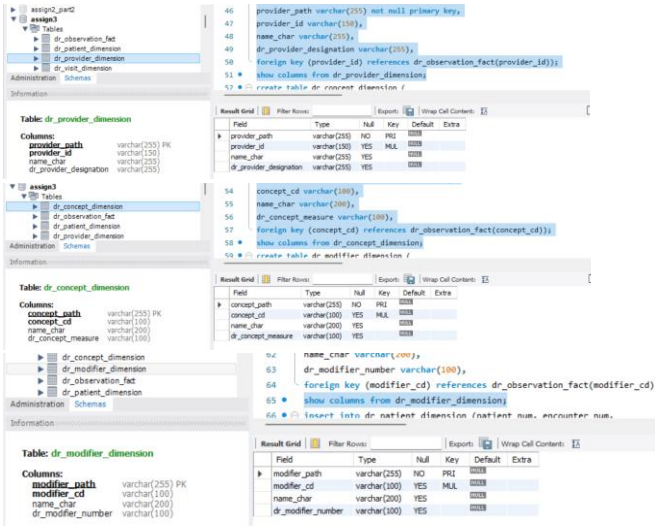
MySql Code for 1:

```
create schema assign3;
use assign3;
create table dr_observation_fact (
patient_num int not null,
encounter_num int not null,
concept_cd varchar(100) not null,
provider_id varchar(150) not null,
start_date date not null,
modifier_cd varchar(100) not null,
instance_num int not null,
end_date date,
valtype_cd varchar(255),
tval_char varchar(100),
nval_num int,
valueflag_cd varchar(255),
units_cd varchar(255),
observation_blob blob,
dr_observation_level varchar(255),
primary key (patient_num, encounter_num, concept_cd, provider_id, start_date,
 modifier_cd, instance_num),
 key concept_cd (concept_cd),
 key provider_id (provider_id),
 key modifier_cd (modifier_cd));
 show columns from dr_observation_fact;
create table dr_patient_dimension (
patient_num int auto_increment not null primary key,
birth_date date,
death_date date,
sex_cd varchar(40),
race_cd varchar(100),
ethnicity_cd varchar(100),
zip_cd int,
dr_pat_emergency_contact_num varchar(100),
foreign key (patient_num) references dr_observation_fact(patient_num));
show columns from dr_patient_dimension;
```

```
create table dr_visit_dimension (
encounter_num int auto_increment not null primary key,
patient_num int,
inout_cd varchar(50),
start_date date,
end_date date,
dr_visit_notes varchar(255),
foreign key (patient_num) references dr_observation_fact(patient_num));
show columns from dr_visit_dimension;
create table dr_provider_dimension (
provider_path varchar(255) not null primary key,
provider_id varchar(150),
name_char varchar(255),
dr_provider_designation varchar(255),
foreign key (provider_id) references dr_observation_fact(provider_id));
show columns from dr_provider_dimension;
create table dr_concept_dimension (
concept_path varchar(255) not null primary key,
concept_cd varchar(100),
name_char varchar(200),
dr_concept_measure varchar(100),
foreign key (concept_cd) references dr_observation_fact(concept_cd));
show columns from dr_concept_dimension;
create table dr_modifier_dimension (
modifier_path varchar(255) not null primary key,
modifier_cd varchar(100),
name_char varchar(200),
dr_modifier_number varchar(100),
foreign key (modifier_cd) references dr_observation_fact(modifier_cd));
show columns from dr_modifier_dimension;
```

Created tables snap:





Question2: Insert 5 records into each table of question 1.

Answer:

Code for 2:

```
insert into dr_observation_fact (patient_num, encounter_num, concept_cd, provider_id, start_date,
modifier_cd, instance_num,
end_date, valtype_cd, tval_char, nval_num, valueflag_cd, units_cd, observation_blob, dr_observation_level)
values
(1, '22', 'HT_bp', '9AA01', '2023-02-01', 'BLOOD PRESSURE', '1', '2023-02-07', 'CRI', 'NEW', '2022', 'A', 'mm', 'null',
'dr priority 1'),
(2, '23', 'HT_glu', '9A901', '2023-02-02', 'GLUCOSE', '2', '2023-02-08', 'MAJ', 'OLD', '2022', 'B', 'dl', 'null', 'dr priority
2'),
(3, '24', 'HT_choles', '9AA03', '2023-02-09', 'cholestrol', '3', '2023-02-09', 'MIN', 'NEW', '2021', 'C', 'mmhg', 'null',
'dr priority 1'),
(4, '25', 'HT_BMI', '9AA05', '2023-02-06', 'bmi', '4', '2023-02-09', 'CRI', 'OLD', '2022', 'A', 'mgDL', 'null', 'dr priority
4'),
(5, '26', 'HT_sysbp', '9AB06', '2023-02-07', 'sysbp', '5', '2023-02-10', 'MAJ', 'NEW', '2022', 'B', 'cm', 'null', 'dr
priority 5');
select * from dr_observation_fact;
select count(*) from dr_observation_fact;

insert into dr_patient_dimension (patient_num, birth_date, death_date, sex_cd, race_cd, ethnicity_cd, zip_cd,
dr_pat_emergency_contact_num)
values
((select patient_num from dr_observation_fact where patient_num = '1'), '1986-10-10', '2022-10-09', 'M', 'Black',
'Hispanic or latino', '46222', 'dr + 3174444444'),
((select patient_num from dr_observation_fact where patient_num = '2'), '1983-12-08', '2023-01-07', 'F', 'White',
'Not Hispanic or latino', '46223', 'dr + 3174444445'),
((select patient_num from dr_observation_fact where patient_num = '3'), '1986-02-02', '2021-02-02', 'F', 'Black',
'Hispanic or latino', '46227', 'dr + 3174444446'),
((select patient_num from dr_observation_fact where patient_num = '4'), '1987-05-05', '2022-03-03', 'M', 'Black',
'Hispanic or latino', '46222', 'dr + 3174444447'),
((select patient_num from dr_observation_fact where patient_num = '5'), '1983-04-04', '2022-12-07', 'M',
'White', 'Not Hispanic or latino', '46221', 'dr + 3174444448');
select * from dr_patient_dimension;
select count(*) from dr_patient_dimension;

insert into dr_visit_dimension (encounter_num, patient_num, inout_cd, start_date, end_date, dr_visit_notes)
values
((select encounter_num from dr_observation_fact where encounter_num = '22'),
```

```
(select patient_num from dr_observation_fact where patient_num = '1'), 'emergency', '2022-02-09', '2022-02-
14', 'dr need phyiso help'),
((select encounter_num from dr_observation_fact where encounter_num = '23'),
(select patient_num from dr_observation_fact where patient_num = '2'), 'inpat', '2022-02-15', '2022-02-16', 'dr
null'),
((select encounter_num from dr_observation_fact where encounter_num = '24'),
(select patient_num from dr_observation_fact where patient_num = '3'), 'outpat', '2022-02-02', '2022-02-10', 'dr
need test report'),
((select encounter_num from dr_observation_fact where encounter_num = '25'),
(select patient_num from dr_observation_fact where patient_num = '4'), 'emergency', '2022-02-03', '2022-02-
07', 'dr need to control bp'),
((select encounter_num from dr_observation_fact where encounter_num = '26'), (select patient_num from
dr_observation_fact where patient_num = '5'), 'inpat', '2022-02-02', '2022-02-03', 'dr need test report');
select * from dr_visit_dimension;
select count(*) from dr_visit_dimension;

insert into dr_provider_dimension (provider_path, provider_id, name_char,
dr_provider_designation)
values
('/provider/9AA01', (select provider_id from dr_observation_fact where provider_id = '9AA01'), 'Dr. Sona',
'dr+hod'),
('/provider/9A901', (select provider_id from dr_observation_fact where provider_id = '9A901'), 'Dr. Willy', 'dr+
supervisior'),
('/provider/9AA03', (select provider_id from dr_observation_fact where provider_id = '9AA03'), 'Dr. Riya',
'dr+specialist'),
('/provider/9AA05', (select provider_id from dr_observation_fact where provider_id = '9AA05'), 'Dr. Ron',
'dr+temp'),
('provider/9AB06', (select provider_id from dr_observation_fact where provider_id = '9AB06'), 'Dr. Michal',
'dr+visiting specialist');
select * from dr_provider_dimension;
select count(*) from dr_provider_dimension;

insert into dr_concept_dimension (concept_path, concept_cd, name_char, dr_concept_measure)
values
('/provider/HT_bp', (select concept_cd from dr_observation_fact where concept_cd = 'HT_bp'), 'Mona', 'dr+cri'),
('/concept/HT_glu', (select concept_cd from dr_observation_fact where concept_cd = 'HT_glu'), 'Nomard',
'dr+maj'),
('/concept/HT_choles', (select concept_cd from dr_observation_fact where concept_cd = 'HT_choles'), 'Michele',
'dr+min'),
('/concept/HT_BMI', (select concept_cd from dr_observation_fact where concept_cd = 'HT_BMI'), 'Shifa',
'dr+cri'),
('/concept/HT_sysbp',          (select concept_cd from dr_observation_fact where concept_cd = 'HT_sysbp'),
'Ron', 'dr+maj');
select * from dr_concept_dimension;
select count(*) from dr_concept_dimension;

insert into dr_modifier_dimension (modifier_path, modifier_cd, name_char, dr_modifier_number)
values
('/modifier/BP', (select modifier_cd from dr_observation_fact where instance_num = '1'), 'Mona', '58'),
('/modifier/GLU', (select modifier_cd from dr_observation_fact where instance_num = '2'), 'TITO', '34'),
('/modifier/CHOLE', (select modifier_cd from dr_observation_fact where instance_num = '3'), 'TIGER', '56'),
('/modifier/BMI', (select modifier_cd from dr_observation_fact where instance_num = '4'), 'BRIAN', '89'),
('/modifier/SYSBP', (select modifier_cd from dr_observation_fact where instance_num = '5'), 'NINO', '43');
select * from dr_modifier_dimension;
select count(*) from dr_modifier_dimension;
```

Snaps of inserted values in tables:

```
81 •  select * from dr_observation_fact;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

patient_num	encounter_num	concept_cd	provider_id	start_date	modifier_cd	instance_num	end_d
1	22	HT_bp	9AA01	2023-02-01	BLOOD PRESSURE	1	2023-0
2	23	HT_glu	9A901	2023-02-02	GLUCOSE	2	2023-0
3	24	HT_choles	9AA03	2023-02-09	cholestrol	3	2023-0
4	25	HT_BMI	9AA05	2023-02-06	bmi	4	2023-0
5	26	HT_sysbp	9AB06	2023-02-07	sysbp	5	2023-0
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

patient_num	birth_date	death_date	sex_cd	race_cd	ethnicity_cd	zip_cd	dr_pat_emergency_co
1	1986-10-10	2022-10-09	M	Black	Hispanic or latino	46222	dr + 3174444444
2	1983-12-08	2023-01-07	F	White	Not Hispanic or latino	46223	dr + 3174444445
3	1986-02-02	2021-02-02	F	Black	Hispanic or latino	46227	dr + 3174444446
4	1987-05-05	2022-03-03	M	Black	Hispanic or latino	46222	dr + 3174444447
5	1983-04-04	2022-12-07	M	White	Not Hispanic or latino	46221	dr + 3174444448
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Ce

encounter_num	patient_num	inout_cd	start_date	end_date	dr_visit_notes
22	1	emergency	2022-02-09	2022-02-14	dr need phyiso help
23	2	inpat	2022-02-15	2022-02-16	dr null
24	3	outpat	2022-02-02	2022-02-10	dr need test report
25	4	emergency	2022-02-03	2022-02-07	dr need to control bp
26	5	inpat	2022-02-02	2022-02-03	dr need test report
NULL	NULL	NULL	NULL	NULL	NULL

Result Grid | Filter Rows: | Edit:

provider_path	provider_id	name_char	dr_provider_designation
/provider/9A901	9A901	Dr. Willy	dr + supervisior
/provider/9AA01	9AA01	Dr. Sona	dr +hod
/provider/9AA03	9AA03	Dr. Riya	dr +specialist
/provider/9AA05	9AA05	Dr. Ron	dr +temp
provider/9AB06	9AB06	Dr. Michal	dr +visiting specialist
NULL	NULL	NULL	NULL

concept_path	concept_cd	name_char	dr_concept_measure
/concept/HT_BMI	HT_BMI	Shifa	dr+cri
/concept/HT_choles	HT_choles	Michele	dr+min
/concept/HT_glu	HT_glu	Nomard	dr+maj
/concept/HT_sysbp	HT_sysbp	Ron	dr+maj
/provider/HT_bp	HT_bp	Mona	dr+cri
NULL	NULL	NULL	NULL

Result Grid | Filter Rows: | Edit:

modifier_path	modifier_cd	name_char	dr_modifier_numb
/modifier/BMI	bmi	BRIAN	89
/modifier/BP	BLOOD PRESSURE	Mona	58
/modifier/CHOLE	cholestrol	TIGER	56
/modifier/GLU	GLUCOSE	TITO	34
/modifier/SYSBP	sysbp	NINO	43
NULL	NULL	NULL	NULL

Count snap of each table

```
82 •  select count(*) from dr_observation_fact;
```

Result Grid | Filter Rows: | Export: | Wrap C

count(*)
5

```
97 •  select count(*) from dr_patient_dimension;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

count(*)
5

```
117 •  select count(*) from dr_visit_dimension;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

count(*)
5

```
137 •  select count(*) from dr_provider_dimension;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

count(*)
5

```
156 •  select * from dr_concept_dimension;
157 •  select count(*) from dr_concept_dimension;
```

Result Grid | Filter Rows: | Export: | Wrap Cel

count(*)
5

```
177 •  select count(*) from dr_modifier_dimension;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Conte

count(*)
5

Question 3: Download the sample database from http://www.mysqltutorial.org/mysql-sample-database.aspx. An ER diagram is available on this page as well. Load the data into MySQL and write queries for the following questions.

Answer

```
7927 •  /*!40101 SET SQL_MODE=@OLD_SQL_MODE */;
7928 •  /*!40014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS
7929 •  /*!40014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;
7930 •  /*!40111 SET SQL_NOTES=@OLD_SQL_NOTES */;
7931 •  show tables from classicmodels;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Tables_in_classicmodels
customers
employees
offices
orderdetails
orders
payments
productlines
products

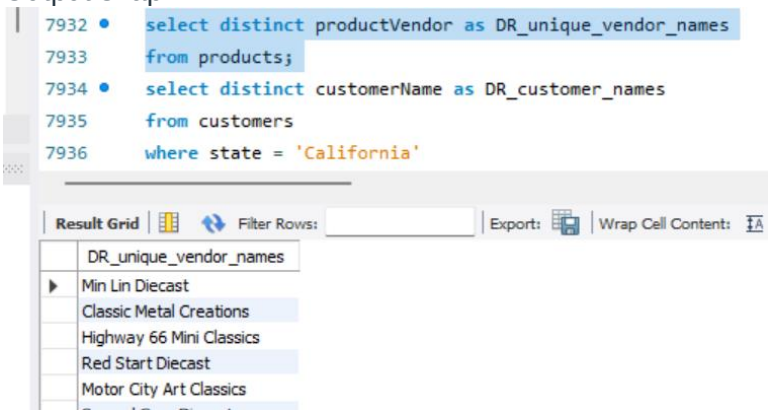
Question 4.

a. List all the unique product vendors and name the resulting column with your initials+description

MySql Code:

```
show tables from classicmodels;
select distinct productVendor as DR_unique_vendor_names
from products;
```

Output snap:

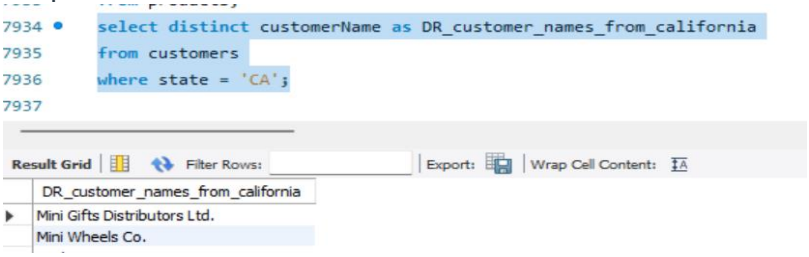


b. List all the customer names in the state of California and name the resulting column with your initials+description

MySql code:

```
select distinct customerName as DR_customer_names_from_california
from customers
where state = 'CA';
```

snap:

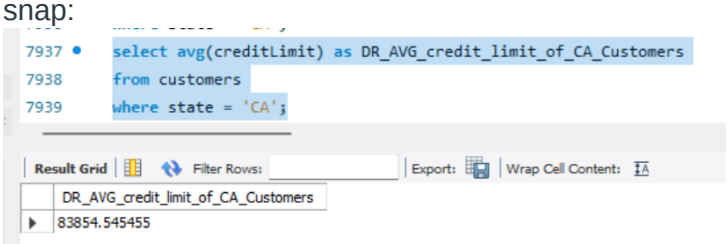


c. Calculate the average credit limit for all the customer in California and name the resulting column with your initials+description

Mysql code:

```
select avg(creditLimit) as DR_AVG_credit_limit_of_CA_Customers
from customers
where state = 'CA';
```

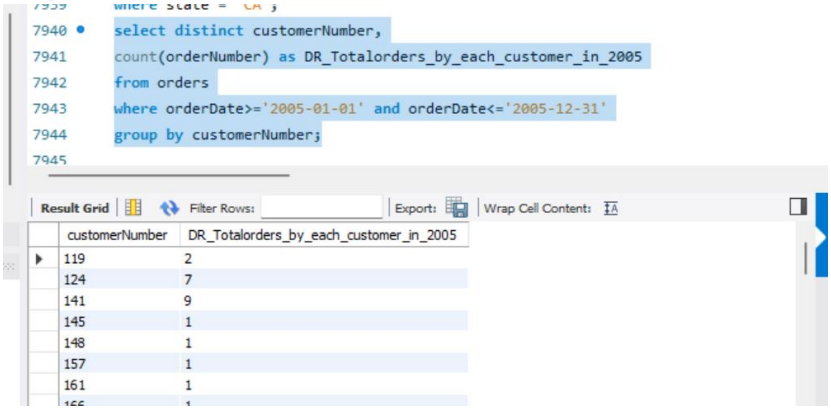
snap:



d. For each customer, list the total number of orders in 2005 and name the resulting column with your initials+description

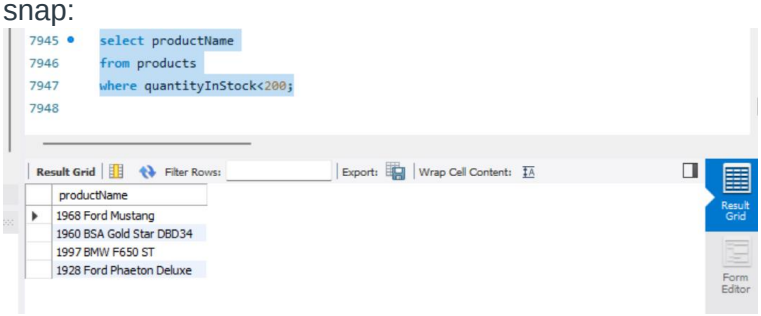
MySql code:
```
select distinct customerNumber,
count(orderNumber) as DR_Totalorders_by_each_customer_in_2005
from orders
where orderDate>='2005-01-01' and orderDate<='2005-12-31'
group by customerNumber;
```

snap:



e. List all the product name who quantityInStock is less than 200
Mysql code:
```
select productName
from products
where quantityInStock<200;
```

snap:



Question 5:

a. List the customer name who have ordered something in year 2003 and how many they ordered name the resulting column with your initials+description
Mysql code:

```
select customers.customerName,
count(orders.orderNumber) as 'DR_orders_in_2003'
from customers
join orders on customers.customerNumber = orders.customerNumber
where year (orders.orderDate) = 2003
group by customers.customerName;
```

Snap:

```
7948 •  select customers.customerName,
7949    count(orders.orderNumber) as 'DR_orders_in_2003'
7950    from customers
7951    join orders on customers.customerNumber = orders.customerNumber
7952    where year (orders.orderDate) = 2003
7953    group by customers.customerName;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customerName	DR_orders_in_2003
Atelier graphique	1
Signal Gift Stores	1
Australian Collectors, Co.	2
Baane Mini Imports	2
Mini Gifts Distributors Ltd.	4
Blauer See Auto, Co.	2
Mini Wheels Co.	2
Land of Toys Inc.	1
Euro+ Shopping Channel	8

Result 8

b. List the employee last name who has an office in Japan or France, display the country and lastname and order by country, add a third column where you place the following your reversed initials+"9981.
Mysql code:

```
select employees.lastName,
offices.country,
concat('RD','"9981') as reversed_intial_column
from employees
join offices on employees.officeCode = offices.officeCode
where offices.country = 'Japan' or offices.country = 'France'
order by offices.country;
```

snap:

```
7954 •  select employees.lastName,
7955    offices.country,
7956    concat('RD','"9981') as reversed_intial_column
7957    from employees
7958    join offices on employees.officeCode = offices.officeCode
7959    where offices.country = 'Japan' or offices.country = 'France'
7960    order by offices.country;
7961
```

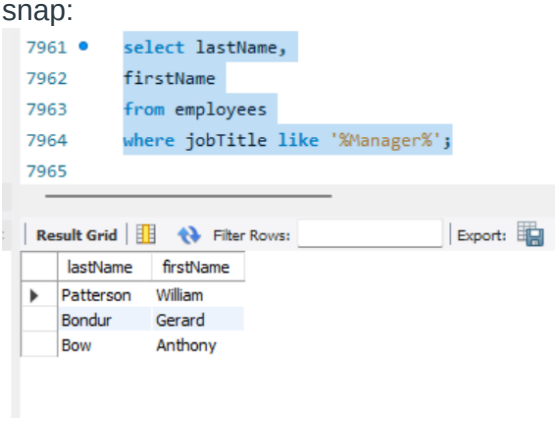
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

lastName	country	reversed_intial_column
Bondur	France	RD"9981
Bondur	France	RD"9981
Hernandez	France	RD"9981
Castillo	France	RD"9981
Gerard	France	RD"9981
Nishi	Japan	RD"9981
Kato	Japan	RD"9981

c. List all the employee last name, first name who act as an manager role.
Mysql code:

```
select lastName,
firstName
from employees
where jobTitle like '%Manager%';
```

snap:



```
7961 •  select lastName,
7962    firstName
7963    from employees
7964    where jobTitle like '%Manager%';
7965
```

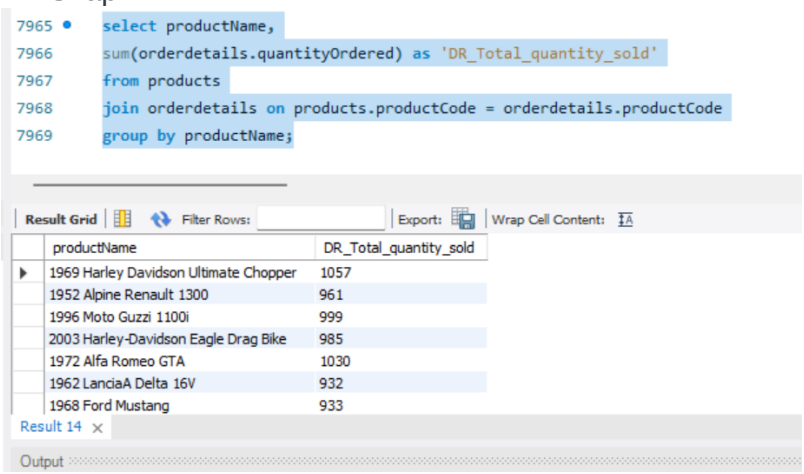
Result Grid | Filter Rows: | Export:

lastName	firstName
Patterson	William
Bondur	Gerard
Bow	Anthony

d. For each product, list its product name and the total quantity sold and name the resulting column with your initials+description
MySql Code:

```
select productName,
sum(orderdetails.quantityOrdered) as 'DR_Total_quantity_sold'
from products
join orderdetails on products.productCode = orderdetails.productCode
group by productName;
```

Snap:



```
7965 •  select productName,
7966    sum(orderdetails.quantityOrdered) as 'DR_Total_quantity_sold'
7967    from products
7968    join orderdetails on products.productCode = orderdetails.productCode
7969    group by productName;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

productName	DR_Total_quantity_sold
1969 Harley Davidson Ultimate Chopper	1057
1952 Alpine Renault 1300	961
1996 Moto Guzzi 1100i	999
2003 Harley-Davidson Eagle Drag Bike	985
1972 Alfa Romeo GTA	1030
1962 LanciaA Delta 16V	932
1968 Ford Mustang	933

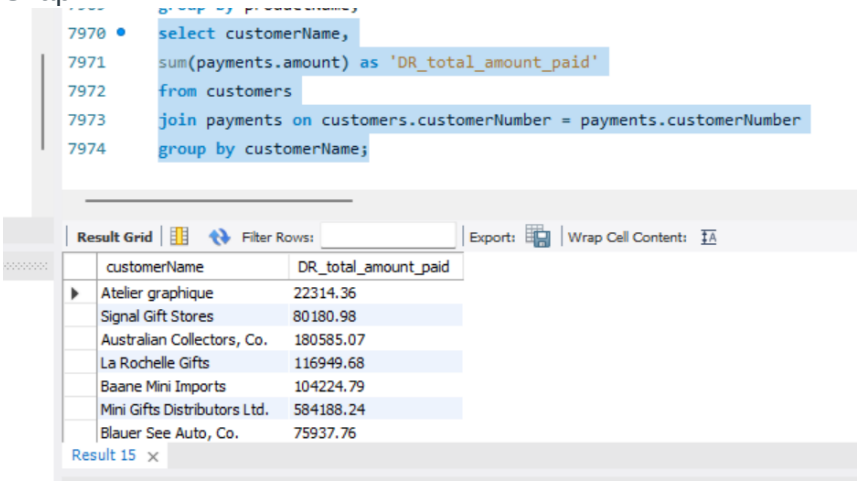
Result 14 ×

Output

e. For each customer, list the customer name and the total amount paid and name the resulting column with your initials+description
Mysql code:

```
select customerName,
sum(payments.amount) as 'DR_total_amount_paid'
from customers
join payments on customers.customerNumber = payments.customerNumber
group by customerName;
```

Snap:



```
7970 •  select customerName,
7971    sum(payments.amount) as 'DR_total_amount_paid'
7972    from customers
7973    join payments on customers.customerNumber = payments.customerNumber
7974    group by customerName;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customerName	DR_total_amount_paid
Atelier graphique	22314.36
Signal Gift Stores	80180.98
Australian Collectors, Co.	180585.07
La Rochelle Gifts	116949.68
Baane Mini Imports	104224.79
Mini Gifts Distributors Ltd.	584188.24
Blauer See Auto, Co.	75937.76

Result 15