

# TD6 : Base de données

écrire cette ligne pour ajouter MySQL dans les variables d'environnement (temporaire) pour permanent aller dans variable d'environnement et ajouter manuellement

**set PATH=%PATH%;c:\xampp\mysql\bin .**

```
C:\Users\elefevre>set PATH=%PATH%;c:\xampp\mysql\bin
```

Maintenant vous avez ceci à la commande **mysql**

```
C:\Users\elefevre>mysql
ERROR 1045 (28000): Access denied for user 'elefevre'@'localhost' (using password: NO)
```

Pour obtenir l'accès faire **mysql -u root**

```
C:\Users\elefevre>mysql -u root
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 24
Server version: 10.4.32-MariaDB mariadb.org binary distribution

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> _
```

## Les commandes de base en SQL

- show tables from [nom\_base\_de\_données]; pour afficher les tables d'une base de données
- quit pour quitter le cmd
- use [nom\_base\_de\_données] pour utiliser la base de données

## Exercices :

<https://www.mysqltutorial.org/getting-started-with-mysql/mysql-sample-database/>

importer la base de données :

```
C:\Users\elefevre\Documents\github\Bloc1\docs\pages\td6>mysql -u root <_my-sample.sql
```

puis ensuite faire les commandes suivantes pour accéder à la base de données souhaitée (ici classicmodels) **mysql -u root; use classicmodels;**

```
C:\Users\elefevre\Documents\github\Bloc1\docs\pages\td6>mysql -u root
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 79
Server version: 10.4.32-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> use classicmodels
Database changed
MariaDB [classicmodels]>
```

1. Pour afficher les tables de la base de données faire la commande **show tables;**

```
MariaDB [classicmodels]> show tables;
+-----+
| Tables_in_classicmodels |
+-----+
| customers                |
| employees                |
| offices                  |
| orderdetails             |
| orders                   |
| payments                 |
| productlines             |
| products                 |
+-----+
8 rows in set (0.001 sec)
```

- Pour afficher les champs de la table employees faire la commande suivante **SHOW columns FROM employees;**

```
MariaDB [classicmodels]> show columns from employees;
```

Field	Type	Null	Key	Default	Extra
employeeNumber	int(11)	NO	PRI	NULL	
lastName	varchar(50)	NO		NULL	
firstName	varchar(50)	NO		NULL	
extension	varchar(10)	NO		NULL	
email	varchar(100)	NO		NULL	
officeCode	varchar(10)	NO	MUL	NULL	
reportsTo	int(11)	YES	MUL	NULL	
jobTitle	varchar(50)	NO		NULL	

```
8 rows in set (0.013 sec)
```

### Monotable

- Pour afficher tous les employés faire la commande **SELECT \* FROM employees;**

```
MariaDB [classicmodels]> select * from employees;
```

employeeNumber	lastName	firstName	extension	email	officeCode	reportsTo	jobTitle
1002	Murphy	Diane	x5800	dmurphy@classicmodelcars.com	1	NULL	President
1056	Patterson	Mary	x4611	mpatterson@classicmodelcars.com	1	1002	VP Sales
1076	Firrelli	Jeff	x9273	jfirrelli@classicmodelcars.com	1	1002	VP Marketing
1088	Patterson	William	x4871	wpatterson@classicmodelcars.com	6	1056	Sales Manager (APAC)
1102	Bondur	Gerard	x5408	gbondur@classicmodelcars.com	4	1056	Sale Manager (EMEA)
1143	Bow	Anthony	x5428	abow@classicmodelcars.com	1	1056	Sales Manager (NA)
1165	Jennings	Leslie	x3291	ljennings@classicmodelcars.com	1	1143	Sales Rep
1166	Thompson	Leslie	x4065	lthompson@classicmodelcars.com	1	1143	Sales Rep
1188	Firrelli	Julie	x2173	jfirrelli@classicmodelcars.com	2	1143	Sales Rep
1216	Patterson	Steve	x4334	spatterson@classicmodelcars.com	2	1143	Sales Rep
1286	Tseng	Foon Yue	x2248	ftseng@classicmodelcars.com	3	1143	Sales Rep
1323	Vanauf	George	x4102	gvanauf@classicmodelcars.com	3	1143	Sales Rep
1337	Bondur	Loui	x6493	lbondur@classicmodelcars.com	4	1102	Sales Rep
1370	Hernandez	Gerard	x2028	ghernande@classicmodelcars.com	4	1102	Sales Rep
1401	Castillo	Pamela	x2759	pcastillo@classicmodelcars.com	4	1102	Sales Rep
1501	Bott	Larry	x2311	lbott@classicmodelcars.com	7	1102	Sales Rep
1504	Jones	Barry	x102	bjones@classicmodelcars.com	7	1102	Sales Rep
1611	Fixter	Andy	x101	afixter@classicmodelcars.com	6	1088	Sales Rep
1612	Marsh	Peter	x102	pmarsh@classicmodelcars.com	6	1088	Sales Rep
1619	King	Tom	x103	tking@classicmodelcars.com	6	1088	Sales Rep
1621	Nishi	Mami	x101	mnishi@classicmodelcars.com	5	1056	Sales Rep
1625	Kato	Yoshimi	x102	ykato@classicmodelcars.com	5	1621	Sales Rep
1702	Gerard	Martin	x2312	mgerard@classicmodelcars.com	4	1102	Sales Rep

```
23 rows in set (0.000 sec)
```

4. Pour afficher les noms et prénoms des employés faire la commande suivante :  
**SELECT lastName, firstName FROM employees;**

```
MariaDB [classicmodels]> select lastName, firstName from employees
-> ;
```

lastName	firstName
Murphy	Diane
Patterson	Mary
Firrelli	Jeff
Patterson	William
Bondur	Gerard
Bow	Anthony
Jennings	Leslie
Thompson	Leslie
Firrelli	Julie
Patterson	Steve
Tseng	Foon Yue
Vanauf	George
Bondur	Loui
Hernandez	Gerard
Castillo	Pamela
Bott	Larry
Jones	Barry
Fixter	Andy
Marsh	Peter
King	Tom
Nishi	Mami
Kato	Yoshimi
Gerard	Martin

```
23 rows in set (0.000 sec)
```

5. Pour afficher le nom des clients et leurs ville faire la commande : **SELECT customerName, city from customers;**

```
MariaDB [classicmodels]> select customerName, city from customers
-> ;
```

customerName	city
Atelier graphique	Nantes
Signal Gift Stores	Las Vegas
Australian Collectors, Co.	Melbourne
La Rochelle Gifts	Nantes
Baane Mini Imports	Stavern
Mini Gifts Distributors Ltd.	San Rafael
Havel & Zbyszek Co	Warszawa
Blauer See Auto, Co.	Frankfurt
Mini Wheels Co.	San Francisco
Land of Toys Inc.	NYC
Euro+ Shopping Channel	Madrid
Volvo Model Replicas, Co	Luleå
Danish Wholesale Imports	Kobenhavn
Saveley & Henriot, Co.	Lyon
Dragon Souvenirs, Ltd.	Singapore
Muscle Machine Inc	NYC
Diecast Classics Inc.	Allentown
Technics Stores Inc.	Burlingame
Handji Gifts& Co	Singapore
Herkku Gifts	Bergen
American Souvenirs Inc	New Haven
Porto Imports Co.	Lisboa
Daedalus Designs Imports	Lille
La Corne D'abondance, Co.	Paris
Cambridge Collectables Co.	Cambridge
Gift Depot Inc.	Bridgewater
Osaka Souvenirs Co.	Kita-ku
Vitachrome Inc.	NYC
Toys of Finland, Co.	Helsinki
AV Stores, Co.	Manchester

6. Pour afficher tous les clients de france faire la commande suivante : **select \* from customers where country="France";**

```
MariaDB [classicmodels]> select * from customers where country="France";
```

customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumber	creditLimit
103	Atelier graphique	Schmitt	Carine	40.32.2555	54, rue Royale	NULL	Nantes	NULL	44000	France	1370	21000.00
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages	NULL	Nantes	NULL	44000	France	1370	118200.00
146	Saveley & Henriot, Co.	Saveley	Mary	78.32.5555	2, rue du Commerce	NULL	Lyon	NULL	69004	France	1337	123900.00
171	Daedalus Designs Imports	Rancie	Martine	20.16.1555	184, chaussée de Tournai	NULL	Lille	NULL	59000	France	1370	82900.00
172	La Corne D'abondance, Co.	Bertrand	Marie	(1) 42.34.2555	265, boulevard Charonne	NULL	Paris	NULL	75012	France	1337	84300.00
209	Mini Canary	Citeaux	Friederike	81.60.1555	24, place Kléber	NULL	Strasbourg	NULL	67000	France	1370	53800.00
242	Alpha Cognac	Roulet	Annette	61.77.6555	1 rue Alsace-Lorraine	NULL	Toulouse	NULL	31000	France	1370	61100.00
250	Lyon Souvenirs	Da Silva	Daniel	+33 1 46 62 7555	27 rue du Colonel Pierre Avia	NULL	Paris	NULL	75508	France	1337	65100.00
256	Auto Associés & Cie.	Toniol	Daniel	30.50.8555	67, avenue de l'Europe	NULL	Versailles	NULL	78000	France	1370	77000.00
350	Marseille Mini Autos	Lebihan	Laurence	91.24.4555	12, rue des Bouchers	NULL	Marseille	NULL	13008	France	1337	65000.00
353	Reims Collectables	Henriot	Paul	20.47.1555	59 rue de l'Abbaye	NULL	Reims	NULL	51100	France	1337	81100.00
406	Auto Canal Petit	Perrier	Dominique	(1) 47.55.6555	25, rue Lauriston	NULL	Paris	NULL	75016	France	1337	95000.00

12 rows in set (0.001 sec)

7. Pour afficher tous les clients dont la ville est Lyon, Nantes ou Paris faire la commande suivante : **select \* from customers where city="Lyon" OR city="Paris" OR city="Nantes";**

```
MariaDB [classicmodels]> select * from customers where city="Lyon" OR city="Paris" OR city="Nantes";
```

customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumber	creditLimit
103	Atelier graphique	Schmitt	Carine	40.32.2555	54, rue Royale	NULL	Nantes	NULL	44000	France	1370	21000.00
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages	NULL	Nantes	NULL	44000	France	1370	118200.00
146	Saveley & Henriot, Co.	Saveley	Mary	78.32.5555	2, rue du Commerce	NULL	Lyon	NULL	69004	France	1337	123900.00
172	La Corne D'abondance, Co.	Bertrand	Marie	(1) 42.34.2555	265, boulevard Charonne	NULL	Paris	NULL	75012	France	1337	84300.00
250	Lyon Souvenirs	Da Silva	Daniel	+33 1 46 62 7555	27 rue du Colonel Pierre Avia	NULL	Paris	NULL	75508	France	1337	65100.00
406	Auto Canal Petit	Perrier	Dominique	(1) 47.55.6555	25, rue Lauriston	NULL	Paris	NULL	75016	France	1337	95000.00

6 rows in set (0.000 sec)

8. Pour afficher tous les clients dont le nom contient SA faire la commande :

**select \* from customers where customerName LIKE"%SA%";**

```
MariaDB [classicmodels]> select * from customers where customerName LIKE"%SA%";
```

customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumber	creditLimit
145	Danish Wholesale Imports	Petersen	Jytte	31 12 3555	Vindhilet 34	NULL	Kobenhavn	NULL	1734	Denmark	1481	83480.00
146	Saveley & Henriot, Co.	Saveley	Harry	78 32 5555	2, rue du Commerce	NULL	Lyon	NULL	69804	France	1337	123980.00
177	Osaka Souvenirs Co.	Kentary	Mory	+81 06 6342 5555	1-6-20 Dojima	NULL	Kita-ku	Osaka	530-0003	Japan	1621	81280.00
356	SAR Distributors, Co	Kuger	Armand	+27 21 550 3555	1250 Pretorius Street	NULL	Hatfield	Pretoria	0028	South Africa	NULL	0.00
382	Salzburg Collectables	Plapp	Georg	6502-5555	Gelslweg 14	NULL	Salzburg	NULL	5000	Austria	1491	71780.00

5 rows in set (0.000 sec)

## Multi-Tables

9. pour afficher les client et les employés associé faire la commande :

**select customers.customerName, employees.lastName, employees.firstName from customers join employees ON salesRepEmployeeNumber = employeeNumber;**

```
MariaDB [classicmodels]> select customers.customerName, employees.lastName, employees.firstName from customers join employees ON salesRepEmployeeNumber = employeeNumber;
```

customerName	lastName	firstName
Mini Gifts Distributors Ltd.	Jennings	Leslie
Mini Wheels Co.	Jennings	Leslie
Technics Stores Inc.	Jennings	Leslie
Corporate Gift Ideas Co.	Jennings	Leslie
The Sharp Gifts Warehouse	Jennings	Leslie
Signal Collectibles Ltd.	Jennings	Leslie
Signal Gift Stores	Thompson	Leslie
Toys4GrownUps.com	Thompson	Leslie
Boards & Toys Co.	Thompson	Leslie
Collectable Mini Designs Co.	Thompson	Leslie
Men 'R' US Retailers, Ltd.	Thompson	Leslie
West Coast Collectables Co.	Thompson	Leslie
Cambridge Collectables Co.	Firrelli	Julie
Online Mini Collectables	Firrelli	Julie
Mini Creations Ltd.	Firrelli	Julie
Classic Gift Ideas, Inc	Firrelli	Julie
Collectables For Less Inc.	Firrelli	Julie
Diecast Collectables	Firrelli	Julie
Diecast Classics Inc.	Patterson	Steve
Auto-Moto Classics Inc.	Patterson	Steve
Marta's Replicas Co.	Patterson	Steve
Gifts4AllAges.com	Patterson	Steve
Online Diecast Creations Co.	Patterson	Steve
FunGiftIdeas.com	Patterson	Steve
Muscle Machine Inc	Tseng	Foon Yue
American Souvenirs Inc	Tseng	Foon Yue
Vitachrome Inc.	Tseng	Foon Yue
Qu!bec Home Shopping Network	Tseng	Foon Yue
Classic Legends Inc.	Tseng	Foon Yue
Super Scale Inc.	Tseng	Foon Yue
Microscale Inc.	Tseng	Foon Yue
Land of Toys Inc.	Vanauf	George
Gift Depot Inc.	Vanauf	George
Canadian Gift Exchange Network	Vanauf	George
Royal Canadian Collectables, Ltd.	Vanauf	George

10. Pour afficher les clients avec leur pays et employée associé avec pays de son office faire la commande suivante :

```
Select customers.customerName, customers.country AS customerCountry,
employees.lastName AS employeeLastName, employees.firstName AS
employeeFirstName, offices.country AS officeCountry from customers
join employees on salesRepEmployeeNumber = employeeNumber
join offices on employees.officeCode = offices.officeCode;
```

```
MariaDB [classicmodels]> Select customers.customerName, customers.country AS customerCountry, employees.lastName AS employeeLastName, employees.firstName AS employeeFirstName, offices.country AS officeCountry from customers
-> join employees on salesRepEmployeeNumber = employeeNumber
-> join offices on employees.officeCode = offices.officeCode;
```

customerName	customerCountry	employeeLastName	employeeFirstName	officeCountry
Mini Gifts Distributors Ltd.	USA	Jennings	Leslie	USA
Mini Wheels Co.	USA	Jennings	Leslie	USA
Technics Stores Inc.	USA	Jennings	Leslie	USA
Corporate Gift Ideas Co.	USA	Jennings	Leslie	USA
The Sharp Gifts Warehouse	USA	Jennings	Leslie	USA
Signal Collectibles Ltd.	USA	Jennings	Leslie	USA
Signal Gift Stores	USA	Thompson	Leslie	USA
Toy4knowings.com	USA	Thompson	Leslie	USA
Boards & Toys Co.	USA	Thompson	Leslie	USA
Collectable Mini Designs Co.	USA	Thompson	Leslie	USA
Men 'R' US Retailers, Ltd.	USA	Thompson	Leslie	USA
West Coast Collectables Co.	USA	Thompson	Leslie	USA
Cambridge Collectables Co.	USA	Firrelli	Julie	USA
Online Mini collectables	USA	Firrelli	Julie	USA
Mini Creations Ltd.	USA	Firrelli	Julie	USA
Classic Gift Ideas, Inc.	USA	Firrelli	Julie	USA
Collectables For Less Inc.	USA	Firrelli	Julie	USA
Diecast Collectables	USA	Firrelli	Julie	USA
Diecast Classics Inc.	USA	Patterson	Steve	USA
Auto-Moto Classics Inc.	USA	Patterson	Steve	USA
Herbie's Replicas Co.	USA	Patterson	Steve	USA
Gifts4allages.com	USA	Patterson	Steve	USA
Online Diecast Creations Co.	USA	Patterson	Steve	USA
Fun4riders.com	USA	Patterson	Steve	USA
Muscle Machine Inc.	USA	Tseng	Foon Yue	USA
American Souvenirs Inc.	USA	Tseng	Foon Yue	USA
Vitachrome Inc.	USA	Tseng	Foon Yue	USA
Quipbec Home Shopping Network	Canada	Tseng	Foon Yue	USA
Classic Legends Inc.	USA	Tseng	Foon Yue	USA
Super Scale Inc.	USA	Tseng	Foon Yue	USA
Microscale Inc.	USA	Tseng	Foon Yue	USA
Land of Toys Inc.	USA	Vanauf	George	USA
Gift Depot Inc.	USA	Vanauf	George	USA
Canadian Gift Exchange Network	Canada	Vanauf	George	USA
Royal Canadian Collectables, Ltd.	Canada	Vanauf	George	USA
Mini Classics	USA	Vanauf	George	USA
Tekni Collectables Inc.	USA	Vanauf	George	USA
Gift Ideas Corp.	USA	Vanauf	George	USA
Motor Mint Distributors Inc.	USA	Vanauf	George	USA
Savoley & Henriot, Co.	France	Bondur	Louï	France
La Corne D'abondance, Co.	France	Bondur	Louï	France
Lyon Souvenirs	France	Bondur	Louï	France
Herselle Mini Autos	France	Bondur	Louï	France
Reiss Collectables	France	Bondur	Louï	France
Auto Canal+ Petit	France	Bondur	Louï	France

11. Pour afficher la liste des employés qui doivent rendre compte à l'employé ayant le titre "VP Marketing" faire la commande suivante :

```
select employeeNumber, lastName, firstName, jobTitle from employees where
reportsTo = (select employeeNumber from employees where jobTitle="VP
marketing");
```

```
MariaDB [classicmodels]> select employeeNumber, lastName, firstName, jobTitle from employees where reportsTo =(select employeeNumber from employees where jobTitle="VP marketing");
Empty set (0.000 sec)
```

ici cela donne un résultat vide car il n'y a pas d'employés qui doivent rendre compte à un employé avec le titre "VP Marketing"

12. Pour afficher la liste des Sales Rep aux USA faire la commande suivante :

```
select e.lastName, e.firstName, e.jobTitle, c.country,
c.salesRepEmployeeNumber from employees e join customers c on
e.employeeNumber = c.salesRepEmployeeNumber where country="USA";
```

```
MariaDB [classicmodels]> select e.lastName, e.firstName, e.jobTitle, c.country, c.salesRepEmployeeNumber from employees e join customers c on e.employeeNumber = c.salesRepEmployeeNumber where country="USA";
```

lastName	firstName	jobTitle	country	salesRepEmployeeNumber
Jennings	Leslie	Sales Rep	USA	1165
Jennings	Leslie	Sales Rep	USA	1165
Jennings	Leslie	Sales Rep	USA	1165
Jennings	Leslie	Sales Rep	USA	1165
Jennings	Leslie	Sales Rep	USA	1165
Jennings	Leslie	Sales Rep	USA	1165
Thompson	Leslie	Sales Rep	USA	1166
Thompson	Leslie	Sales Rep	USA	1166
Thompson	Leslie	Sales Rep	USA	1166
Thompson	Leslie	Sales Rep	USA	1166
Thompson	Leslie	Sales Rep	USA	1166
Thompson	Leslie	Sales Rep	USA	1166
Thompson	Leslie	Sales Rep	USA	1166
Firrelli	Julie	Sales Rep	USA	1188
Firrelli	Julie	Sales Rep	USA	1188
Firrelli	Julie	Sales Rep	USA	1188
Firrelli	Julie	Sales Rep	USA	1188
Firrelli	Julie	Sales Rep	USA	1188
Patterson	Steve	Sales Rep	USA	1216
Patterson	Steve	Sales Rep	USA	1216
Patterson	Steve	Sales Rep	USA	1216
Patterson	Steve	Sales Rep	USA	1216
Patterson	Steve	Sales Rep	USA	1216
Tseng	Foon Yue	Sales Rep	USA	1286
Tseng	Foon Yue	Sales Rep	USA	1286
Tseng	Foon Yue	Sales Rep	USA	1286
Tseng	Foon Yue	Sales Rep	USA	1286
Tseng	Foon Yue	Sales Rep	USA	1286
Vanauf	George	Sales Rep	USA	1323
Vanauf	George	Sales Rep	USA	1323
Vanauf	George	Sales Rep	USA	1323
Vanauf	George	Sales Rep	USA	1323
Vanauf	George	Sales Rep	USA	1323

13. Pour afficher la liste des clients aux USA avec le nom de l'employé qui les gère, avec affichage de l'office. Faire la commande suivante :

```
select c.customerName, c.country AS customerCountry, e.lastName, e.firstName,
o.officeCode from customers c join employees e on c.salesRepEmployeeNumber =
e.employeeNumber join offices o on e.officeCode = o.officeCode where c.country =
"USA";
```

```
MariaDB [classicmodels]> select c.customerName, c.country AS customerCountry, e.lastName, e.firstName, o.officeCode from customers c join employees e on c.salesRepEmployeeNumber = e.employeeNumber join offices o on e.officeCode = o.officeCode where c.country = "USA";
```

customerName	customerCountry	lastName	firstName	officeCode
Mini Gifts Distributors Ltd.	USA	Jennings	Leslie	1
Mini Wheels Co.	USA	Jennings	Leslie	1
Technics Stores Inc.	USA	Jennings	Leslie	1
Corporate Gift Ideas Co.	USA	Jennings	Leslie	1
The Sharp Gifts Warehouse	USA	Jennings	Leslie	1
Signal Collectibles Ltd.	USA	Jennings	Leslie	1
Signal Gift Stores	USA	Thompson	Leslie	1
Toys4GrownUps.com	USA	Thompson	Leslie	1
Boards & Toys Co.	USA	Thompson	Leslie	1
Collectable Mini Designs Co.	USA	Thompson	Leslie	1
Men 'R' US Retailers, Ltd.	USA	Thompson	Leslie	1
West Coast Collectables Co.	USA	Thompson	Leslie	1
Cambridge Collectables Co.	USA	Firrelli	Julie	2
Online Mini Collectables	USA	Firrelli	Julie	2
Mini Creations Ltd.	USA	Firrelli	Julie	2
Classic Gift Ideas, Inc	USA	Firrelli	Julie	2

## Fonctions de regroupement

14. Pour afficher le nombre de clients par pays faire la commande suivante :

```
select country, count(customerNumber) as NumberCustomer from customers group
by country;
```

```
MariaDB [classicmodels]> select country, count(customerNumber) as NumberCustomer from customers group by country;
```

country	NumberCustomer
Australia	5
Austria	2
Belgium	2
Canada	3
Denmark	2
Finland	3
France	12
Germany	13
Hong Kong	1
Ireland	2
Israel	1
Italy	4
Japan	2
Netherlands	1
New Zealand	4
Norway	3
Philippines	1
Poland	1
Portugal	2
Russia	1
Singapore	3
South Africa	1



15. Pour afficher le nombre moyen de clients par pays faire la commande suivante :  
**select country, avg(customerNumber) from customers group by country;**

```
MariaDB [classicmodels]> select country, avg(customerNumber) from customers group by country
-> ;
```

country	avg(customerNumber)
Australia	295.2000
Austria	417.0000
Belgium	347.5000
Canada	231.6667
Denmark	186.0000
Finland	277.0000
France	231.4167
Germany	333.5385
Hong Kong	211.0000
Ireland	268.5000
Israel	481.0000
Italy	346.5000
Japan	287.5000
Netherlands	303.0000
New Zealand	397.0000
Norway	195.6667
Philippines	385.0000
Poland	125.0000
Portugal	269.0000
Russia	480.0000
Singapore	173.3333
South Africa	356.0000

16. Pour afficher le nombre d'employés suivi par les employés en fonction de leur jobTitle faire la commande suivante :  
**select e.jobtitle, count(e2.reportsTo) from employees e join employees e2 on e.employeeNumber = e2.reportsTo group by e.jobtitle;**

```
MariaDB [classicmodels]> select e.jobtitle, count(e2.reportsTo) from employees e join employees e2 on e.employeeNumber = e2.reportsTo group by e.jobtitle;
```

jobtitle	count(e2.reportsTo)
President	2
Sale Manager (EMEA)	6
Sales Manager (APAC)	3
Sales Manager (NA)	6
Sales Rep	1
VP Sales	4

6 rows in set (0.000 sec)

17. Pour afficher le montant des orders par pays (du client) faire la commande :  
**select c.country, sum(o2.quantityOrdered\*o2.priceEach) from customers c join orders o on c.customerNumber = o.customerNumber join orderdetails o2 on o.orderNumber = o2.orderNumber group by c.country;**

```
MariaDB [classicmodels]> select c.country, sum(o2.quantityOrdered*o2.priceEach) from customers c join orders o on c.customerNumber = o.customerNumber join orderdetails o2 on o.orderNumber = o2.orderNumber group by c.country
-> ;
```

country	sum(o2.quantityOrdered*o2.priceEach)
Australia	562582.59
Austria	188540.06
Belgium	100068.76
Canada	205911.86
Denmark	218994.92
Finland	295149.35
France	1807374.02
Germany	196470.99
Hong Kong	45408.79
Ireland	49898.27
Italy	368616.61
Japan	167909.95
New Zealand	476847.01
Norway	278846.38
Philippines	87468.38
Singapore	263997.78
Spain	189289.09
Sweden	187638.35
Switzerland	188777.92
UK	438947.44
USA	3273288.05

21 rows in set (0.005 sec)

18. Pour afficher le montant des orders par employé faire la commande suivante :

```
SELECT CONCAT(employees.firstName, ' ', employees.lastName) AS  
Employee, SUM(orderdetails.quantityOrdered * orderdetails.priceEach) AS  
MontantTotal FROM employees JOIN customers ON  
employees.employeeNumber = customers.salesRepEmployeeNumber JOIN  
orders ON customers.customerNumber = orders.customerNumber JOIN  
orderdetails ON orders.orderNumber = orderdetails.orderNumber GROUP BY  
employees.employeeNumber;
```

```
MariaDB [classicmodels]> SELECT CONCAT(employees.firstName, ' ', employees.lastName) AS Employee,  
-> SUM(orderdetails.quantityOrdered * orderdetails.priceEach) AS MontantTotal  
-> FROM employees  
-> JOIN customers  
-> ON employees.employeeNumber = customers.salesRepEmployeeNumber  
-> JOIN orders  
-> ON customers.customerNumber = orders.customerNumber  
-> JOIN orderdetails ON orders.orderNumber = orderdetails.orderNumber  
-> GROUP BY employees.employeeNumber;
```

Employee	MontantTotal
Leslie Jennings	1081530.54
Leslie Thompson	347533.03
Julie Firrelli	386663.20
Steve Patterson	505875.42
Foon Yue Tseng	488212.67
George Vanauf	669377.05
Loui Bondur	569485.75
Gerard Hernandez	1258577.81
Pamela Castillo	868220.55
Larry Bott	732096.79
Barry Jones	704853.91
Andy Fixter	562582.59
Peter Marsh	584593.76