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
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)]> _
```

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;

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

MariaDB [classicmo	odels]> show col	lumns fr	rom emp	oloyees;	
 Field	Туре	Null	Key	Default	Extra
employeeNumber lastName firstName extension email officeCode reportsTo	int(11) varchar(50) varchar(50) varchar(10) varchar(100) varchar(10) int(11)	NO NO NO NO NO NO YES	PRI	NULL NULL NULL NULL NULL NULL NULL	
jobTitle + 8 rows in set (0.0	varchar(50) 013 sec)	NO +	 	NULL	

Monotable

3. Pour afficher tous les employées faire la commande SELECT * FROM employees;

mployeeNumber	lastName	firstName	extension	email	officeCode	reportsTo	jobTitle
1002	Murphy	Diane	x5800	dmurphy@classicmodelcars.com	1	NULL	President
1056	Patterson	Mary	x4611	mpatterso@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

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
            firstName
 lastName
 Murphy
             Diane
 Patterson
             Mary
 Firrelli
             Jeff
 Patterson
             William
 Bondur
             Gerard
             Anthony
 Bow
 Jennings
             Leslie
 Thompson
             Leslie
 Firrelli
            Julie
 Patterson
             Steve
             Foon Yue
 Tseng
 Vanauf
             George
             Loui
 Bondur
 Hernandez
             Gerard
 Castillo
             Pamela
 Bott
             Larry
 Jones
             Barry
 Fixter
             Andy
 Marsh
             Peter
 King
             Tom
 Nishi
             Mami
             Yoshimi
 Kato
            Martin
 Gerard
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
                                          | Madrid
| Lule|Ñ
| Kobenhavn
 Euro+ Shopping Channel
 Volvo Model Replicas, Co
Danish Wholesale Imports
 Saveley & Henriot, Co.
Dragon Souveniers, Ltd.
                                           Lyon
                                           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 Souveniers 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";

tomerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2		state	postalCode		salesRepEmployeeNumber	creditLi
103	Atelier graphique	Schmitt	Carine	40.32.2555	54, rue Royale	NULL	Nantes	NULL	44000	France	1370	21000
		Labrune	Janine	40.67.8555	67, rue des Cinquante Otages	NULL	Nantes	NULL	44000	France	1370	118206
		Saveley	Mary	78.32.5555	2, rue du Commerce	NULL	Lyon	NULL	69884	France	1337	12390
		Ranc -8	Martine	20.16.1555	184, chauss e de Tournai	NULL	Lille	NULL	59000	France	1370	8290
	La Corne D'abondance, Co.	Bertrand	Marie	(1) 42.34.2555	265, boulevard Charonne	NULL	Paris	NULL	75012	France		8430
		Citeaux	Fr od orique	88.60.1555	24, place Kl Ber	NULL	Strasbourg	NULL	67000	France	1370	5380
	Alpha Cognac	Roulet	Annette	61.77.6555	1 rue Alsace-Lorraine	NULL	Toulouse	NULL	31000	France	1370	6110
	Lyon Souveniers	Da Silva	Daniel		27 rue du Colonel Pierre Avia	NULL	Paris	NULL	75508	France	1337	6810
	Auto Associ es & Cie.	Tonini	Daniel		67, avenue de l'Europe	NULL	Versailles	NULL	78000	France	1370	7798
	Marseille Mini Autos	Lebihan	Laurence	91.24.4555	12, rue des Bouchers	NULL	Marseille	NULL	13008	France		6500
	Reims Collectables	Henriot	Paul	26.47.1555	59 rue de l'Abbaye	NULL	Reims	NULL	51100	France	1337	8110
	Auto Canal+ Petit	Perrier	Dominique	(1) 47.55.6555	25, rue Lauriston	NULL	Paris	NULL	75016	France	1337	9500

 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";

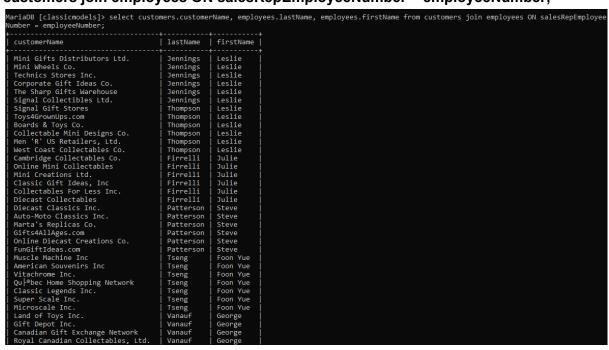
ıstomerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumber	creditLimit
	Atelier graphique	Schmitt	Carine			NULL	Nantes	NULL	44000	France	1370	21000.0
	La Rochelle Gifts	Labrune	Janine	40.67.8555	67, rue des Cinquante Otages	NULL	Nantes			France	1370	118200.0
146	Saveley & Henriot, Co.	Saveley	Mary	78.32.5555	2, rue du Commerce	NULL	Lyon	NULL	69004	France		123900.0
	La Corne D'abondance, Co.	Bertrand	Marie	(1) 42.34.2555		NULL	Paris	NULL	75012	France		84300.0
	Lyon Souveniers	Da Silva	Daniel	+33 1 46 62 7555	27 rue du Colonel Pierre Avia	NULL	Paris	NULL	75508	France		68100.0
406	Auto Canal+ Petit	Perrier	Dominique	(1) 47.55.6555	25, rue Lauriston	NULL	Paris	NULL	75016	France		95000.0

8. Pour afficher tous les clients dont le nom contient SA faire la commande : select * from customers where customerName LIKE"%SA%";



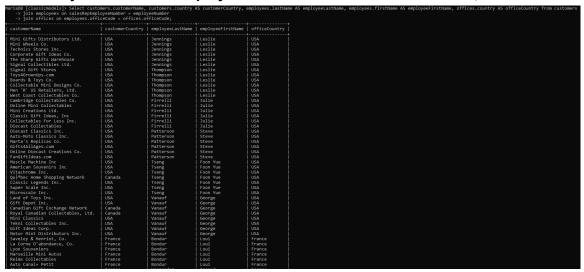
Multi-Tables

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;



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;



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");

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

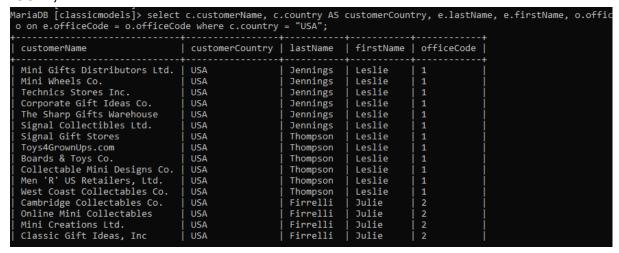
ici cela donne un résultat vide car il n'y a pas d'employés qui doivent rendre compte à un employé avec le titre "VP Marketing"

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";

				salesRepEmployeeNumber	
Jennings	Leslie	Sales Rep		1165	
Jennings	Leslie	Sales Rep	USA	1165	
Jennings	Leslie	Sales Rep	USA	1165	
Jennings	Leslie	Sales Rep		1165	
Jennings	Leslie	Sales Rep	USA	1165	
Jennings	Leslie	Sales Rep	USA	1165	
Thompson		Sales Rep		1166	
Thompson		Sales Rep		1166	
Thompson	Leslie	Sales Rep		1166	
Thompson	Leslie	Sales Rep	USA	1166	
Thompson	Leslie	Sales Rep		1166	
Thompson	Leslie	Sales Rep	USA	1166	
Firrelli	Julie	Sales Rep		1188	
Firrelli	Julie	Sales Rep	USA	1188	
Firrelli	Julie	Sales Rep	USA	1188	
Firrelli	Julie	Sales Rep		1188	
Firrelli	Julie	Sales Rep		1188	
Firrelli	Julie	Sales Rep		1188	
Patterson	Steve	Sales Rep	USA	1216	
Patterson	Steve	Sales Rep	USA	1216	
Patterson	Steve	Sales Rep		1216	
Patterson	Steve	Sales Rep	USA	1216	
Patterson	Steve	Sales Rep		1216	
Patterson	Steve	Sales Rep	USA	1216	
Tseng	Foon Yue	Sales Rep	USA	1286	
Tseng	Foon Yue	Sales Rep		1286	
Tseng	Foon Yue	Sales Rep	USA	1286	
Tseng	Foon Yue	Sales Rep Sales Rep	USA USA	1286 1286	
Tseng Tseng	Foon Yue	Sales Rep		1286	
rseng Vanauf	George	Sales Rep Sales Rep		1280	
Vanau t Vanauf	George	Sales Rep	USA	1323	
Vanaut Vanauf	George	Sales Rep		1323	
Vanauf	George	Sales Rep	USA	1323	
Vanauf	George	Sales Rep		1323	
Vanauf	George	Sales Rep		1323	
				1525	

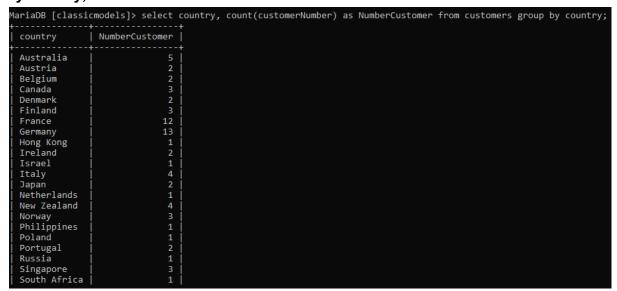
13. Pour afficher la liste des clients aux USA avec le nom de l'employé qui les gère, avec affichage de l'office. Faire la commande suivante :

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":



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;



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

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;

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
                        505875.42
 Steve Patterson
 Foon Yue Tseng
                       488212.67
 George Vanauf
                       669377.05
                       569485.75
 Loui Bondur
 Gerard Hernandez
                       1258577.81
 Pamela Castillo
                        868220.55
 Larry Bott
                        732096.79
 Barry Jones
Andy Fixter
                        704853.91
                        562582.59
 Peter Marsh
                        584593.76
```