INT205 – Database Management System
1/2564

LAB02: SQL Review

Submission:

- Submit a lab file named “int205_lab02_xxxxxxxxxxx.docx/.pdf” into the LEB2 system. xxxxxxxxxxx = your student id
- **Do NOT submit** both a PNG file and a MWB file.

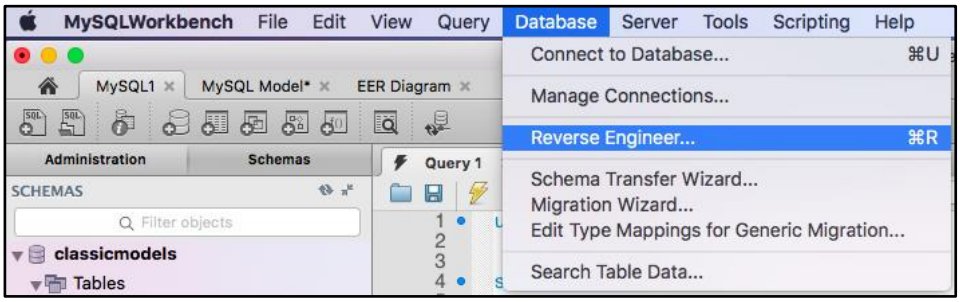
Due Date & Time:

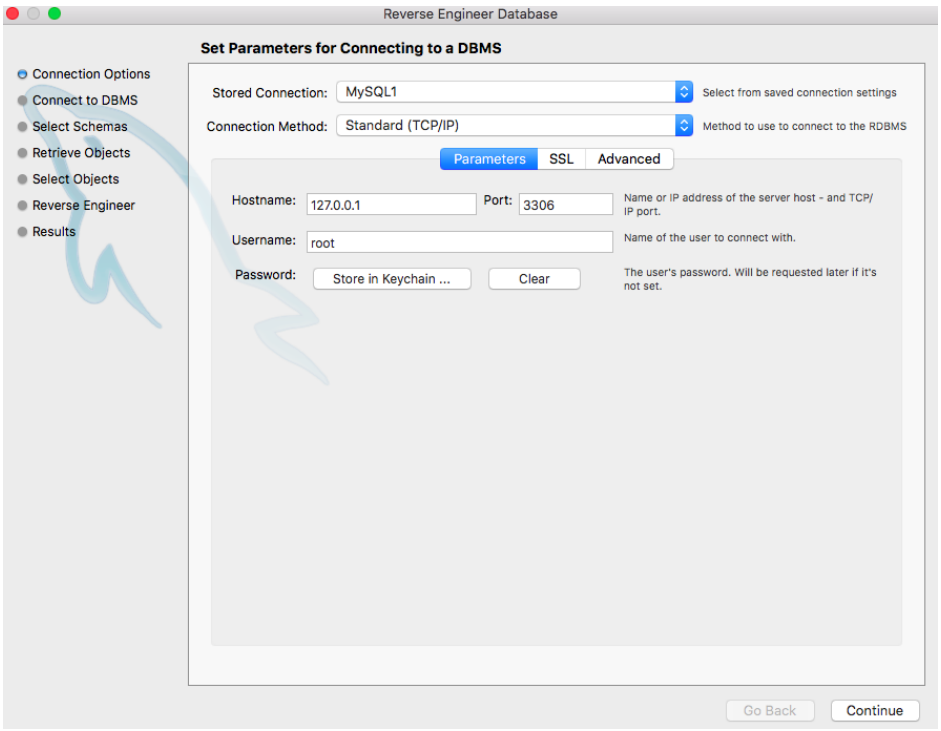
- Lecturer will inform the LAB02 due date and time in lab class.

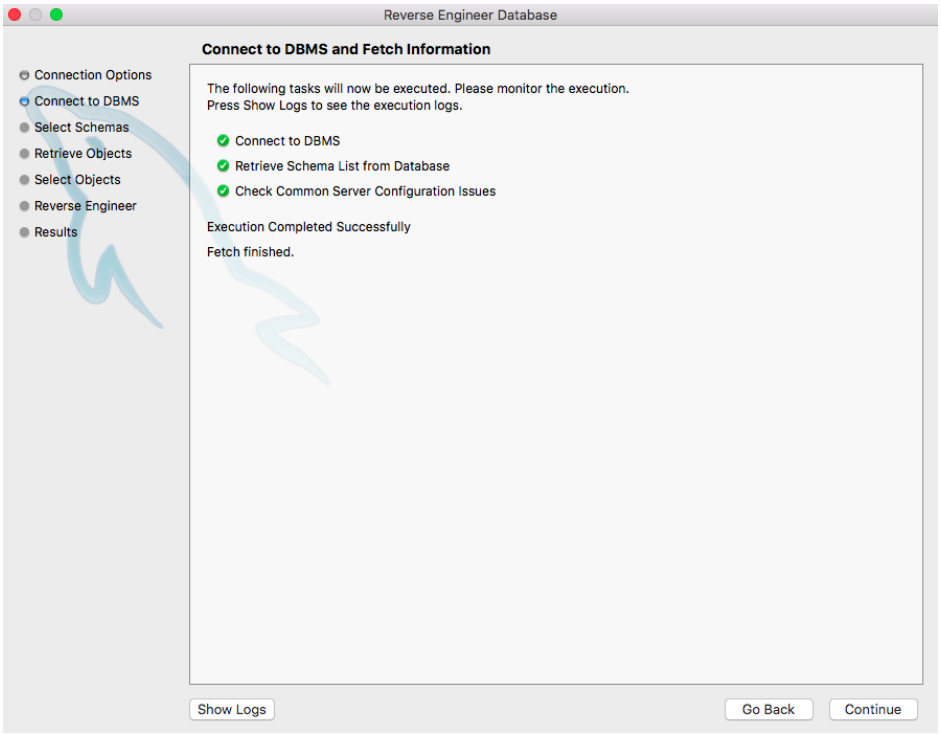
Task 1: Using MySQL Workbench to create an ER-diagram for the “classicmodels”.

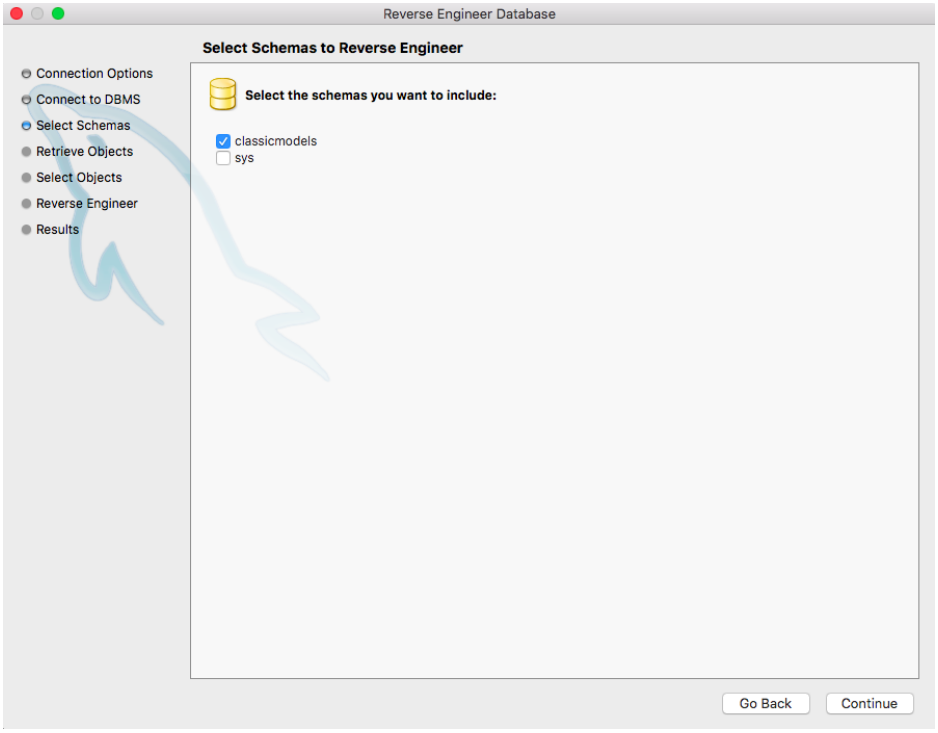
1.1 Use the script named “classicmodels” to generate ER diagram (Reverse Engineering technique).

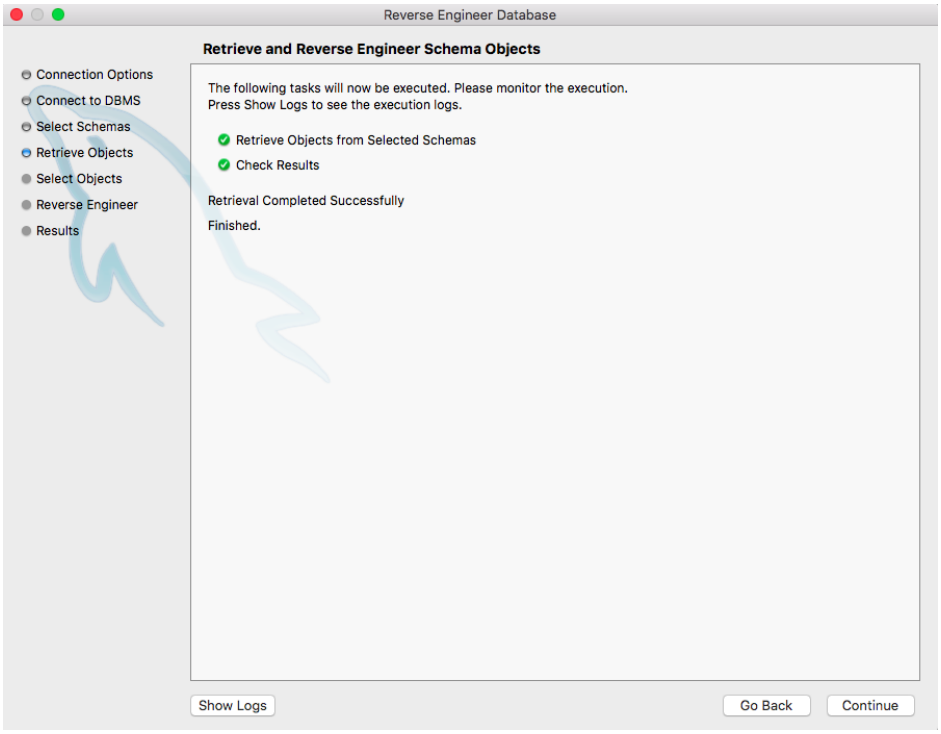
- Open the MySQL Workbench program
- Select the menu “Database” => “Reverse Engineer…”.
- Please follow the step by step instructions below:

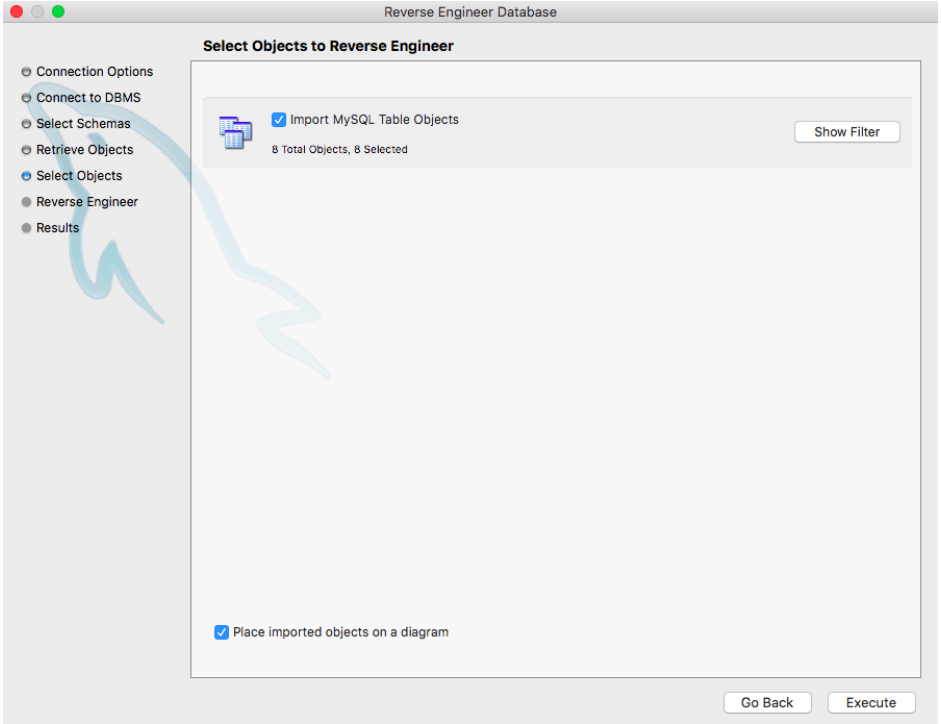


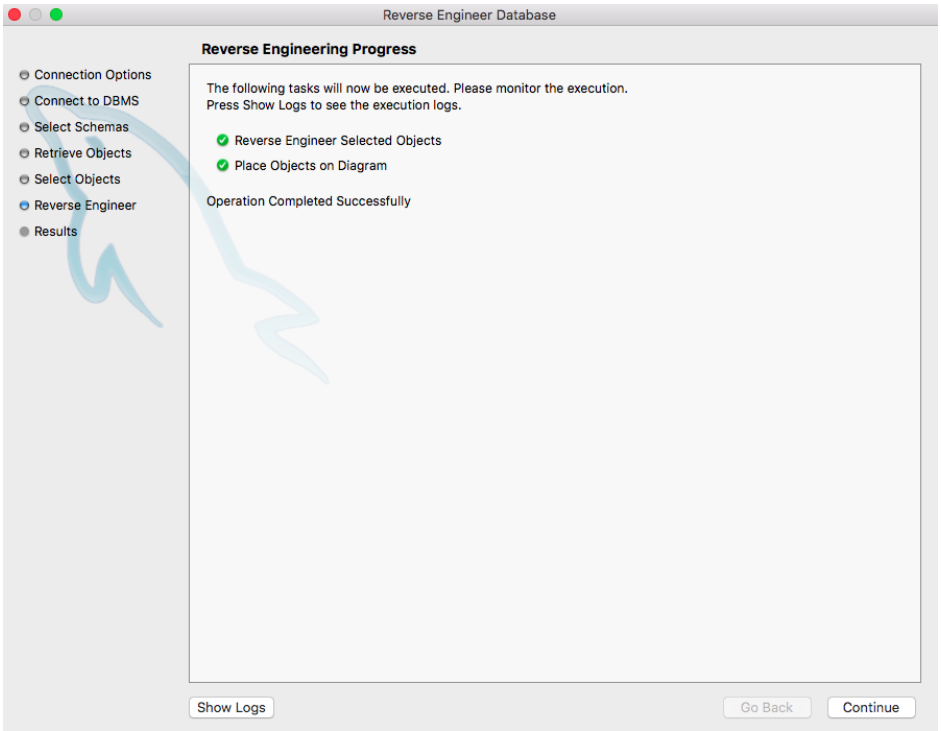

Reverse Engineer Database
Set Parameters for Connecting to a DBMS
Connection Options
Connect to DBMS
Select Schemas
Retrieve Objects
Select Objects
Reverse Engineer
Results
Stored Connection:
MySQL1
Select from saved connection settings
Connection Method:
Standard (TCP/IP)
Method to use to connect to the RDBMS
Parameters
SSL
Advanced
Hostname:
127.0.0.1
Port:
3306
Name or IP address of the server host - and TCP/IP port.
Username:
root
Name of the user to connect with.
Password:
Store in Keychain ...
Clear
The user's password. Will be requested later if it's not set.
Go Back
Continue

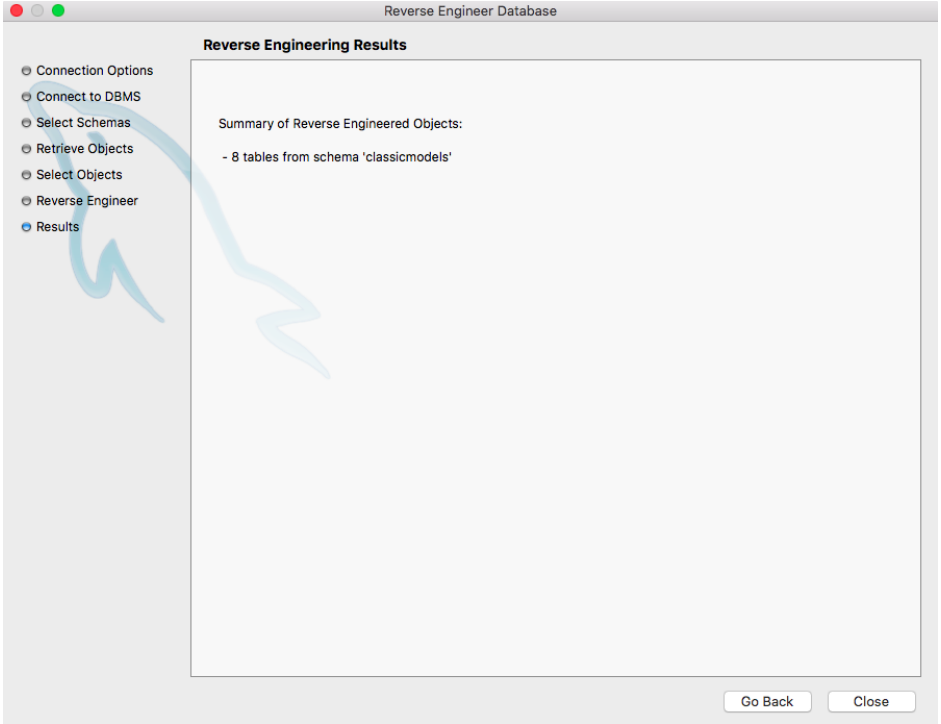

Reverse Engineer Database
Connect to DBMS and Fetch Information
Connection Options
Connect to DBMS
Select Schemas
Retrieve Objects
Select Objects
Reverse Engineer
Results
The following tasks will now be executed. Please monitor the execution.
Press Show Logs to see the execution logs.
Connect to DBMS
Retrieve Schema List from Database
Check Common Server Configuration Issues
Execution Completed Successfully
Fetch finished.
Show Logs
Go Back
Continue


Reverse Engineer Database
Select Schemas to Reverse Engineer
Connection Options
Connect to DBMS
Select Schemas
Retrieve Objects
Select Objects
Reverse Engineer
Results
Select the schemas you want to include:
classicmodels
sys
Go Back
Continue

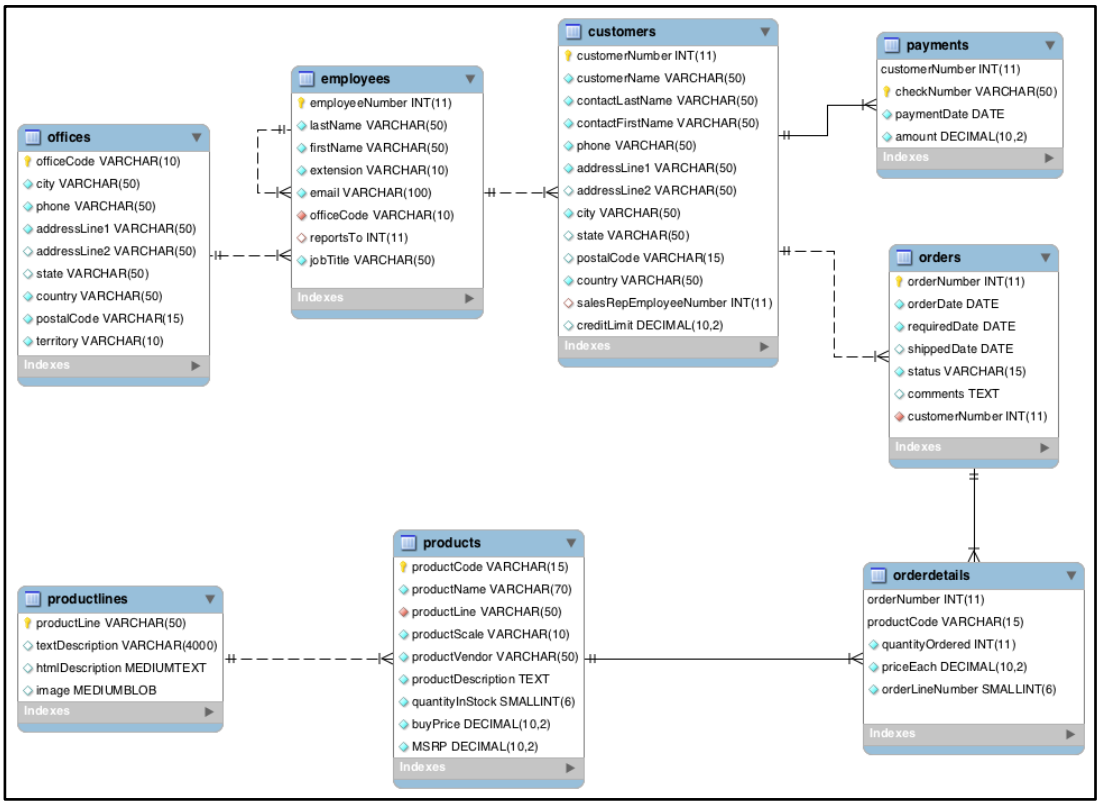

Reverse Engineer Database
Retrieve and Reverse Engineer Schema Objects
Connection Options
Connect to DBMS
Select Schemas
Retrieve Objects
Select Objects
Reverse Engineer
Results
The following tasks will now be executed. Please monitor the execution.
Press Show Logs to see the execution logs.
Retrieve Objects from Selected Schemas
Check Results
Retrieval Completed Successfully
Finished.
Show Logs
Go Back
Continue


Reverse Engineer Database
Select Objects to Reverse Engineer
Connection Options
Connect to DBMS
Select Schemas
Retrieve Objects
Select Objects
Reverse Engineer
Results
Import MySQL Table Objects
8 Total Objects, 8 Selected
Show Filter
Place imported objects on a diagram
Go Back
Execute


Reverse Engineer Database
Reverse Engineering Progress
Connection Options
Connect to DBMS
Select Schemas
Retrieve Objects
Select Objects
Reverse Engineer
Results
The following tasks will now be executed. Please monitor the execution.
Press Show Logs to see the execution logs.
Reverse Engineer Selected Objects
Place Objects on Diagram
Operation Completed Successfully
Show Logs
Go Back
Continue



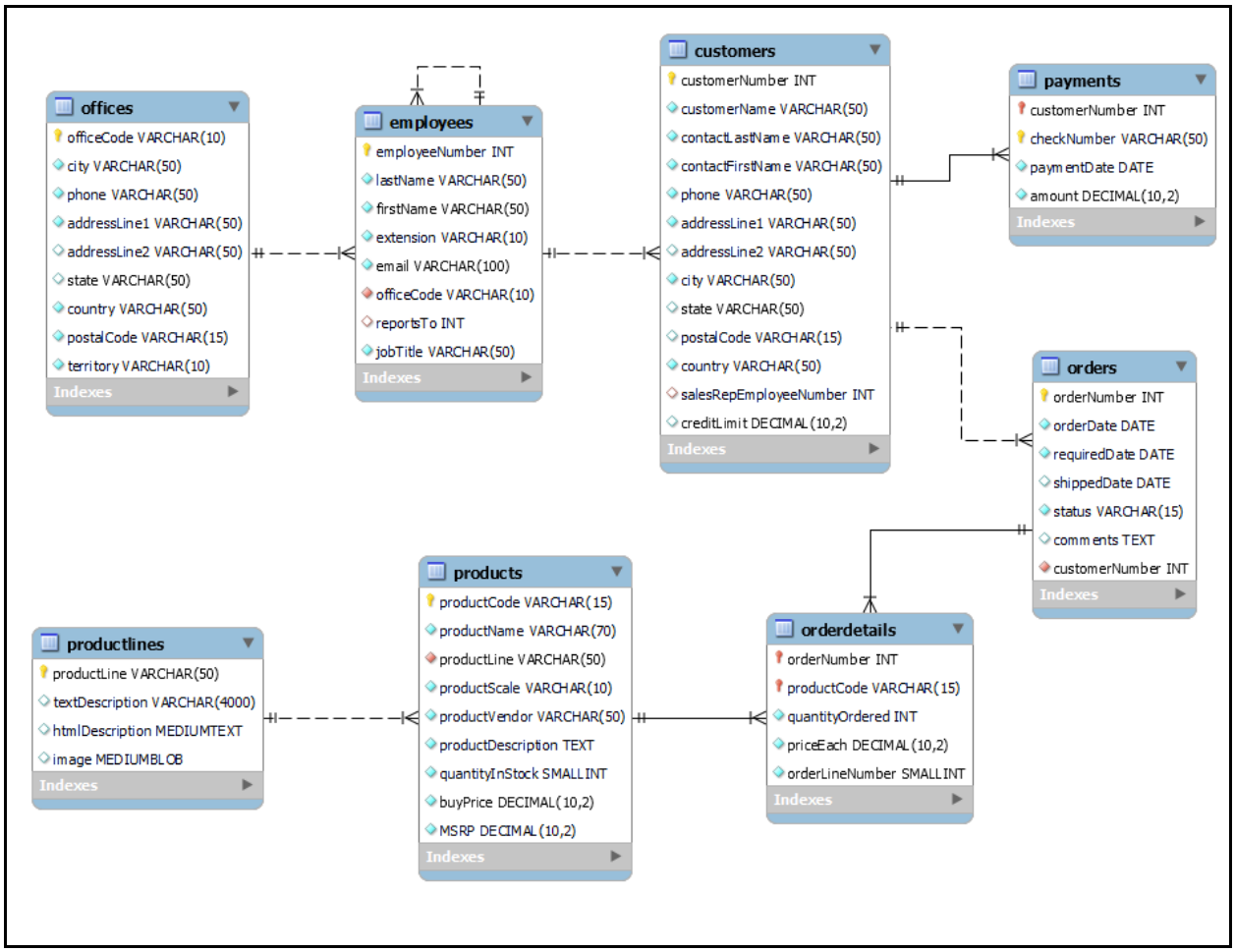
The example ER diagram for the classicmodels.



1.2 Re-arrange the ER diagram for readability and review the tables, columns, data types and relationships among the tables.

- Save a model named “classicmodels.mwb” (the default extension file is .mwb) and export a model as a .png file named “classicmodels_er.png” stored in your computer.

- Place your ER image (the png file) here.



Note: The MSRP is “Manufacturer's suggested retail price” (ราคาขายปลีกแนะนำของผู้ผลิต).

Task 2: Using the “classicmodels” schema and write SQL statements to answer the following questions.

The Syntax of SELECT statement:
Documentation: https://dev.mysql.com/doc/refman/8.0/en/select.html

Note: The MySQL error code 1064 is a syntax error. This means the reason there’s a problem is because MySQL doesn’t understand what you’re asking it to do.

Switch to SQL Editor

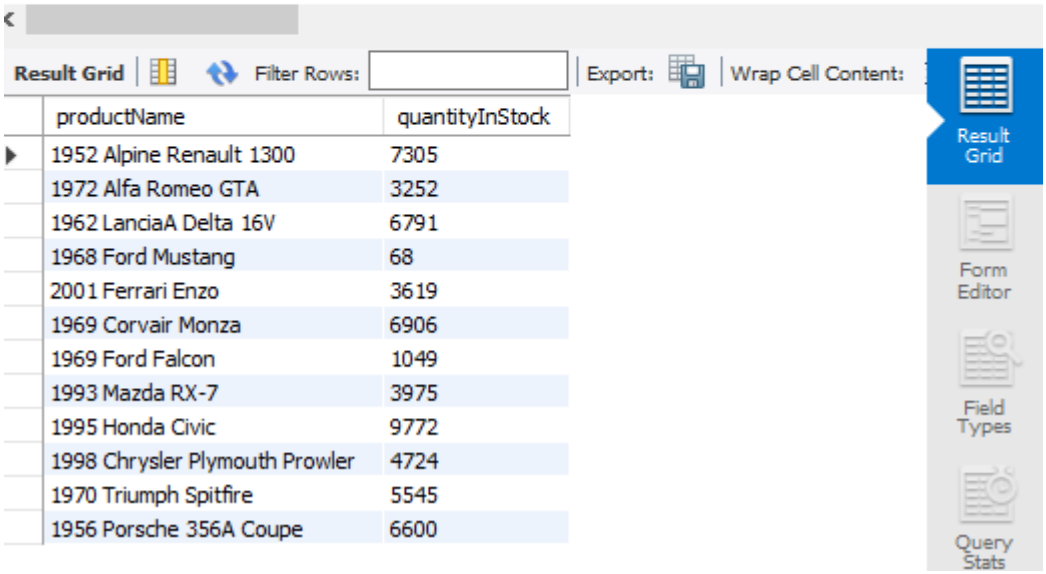
- You should specify the classicmodels database before writing SQL statements using the following command:

```
USE db_name;
```

The USE statement tells MySQL to use the named database as the default (current) database for subsequent statements. This statement requires some privilege for the database or some object within it.

2.1 List the product name and quantity in stock of all products that classified in the “Classic Cars” product line (กลุ่มของสินค้า/ผลิตภัณฑ์) and their buy prices are more than 80.

```
1 •  select productName,quantityInStock from products
2    where productLine = 'Classic Cars'
3    and buyPrice > 80;
```



productName	quantityInStock
1952 Alpine Renault 1300	7305
1972 Alfa Romeo GTA	3252
1962 LanciaA Delta 16V	6791
1968 Ford Mustang	68
2001 Ferrari Enzo	3619
1969 Corvair Monza	6906
1969 Ford Falcon	1049
1993 Mazda RX-7	3975
1995 Honda Civic	9772
1998 Chrysler Plymouth Prowler	4724
1970 Triumph Spitfire	5545
1956 Porsche 356A Coupe	6600

2.2 List the customer name, city and country of all customers who live in the country named: Japan, Germany or Canada. Sort the results in descending order by country and ascending order by customer name.

```
1 •  select customerName,city,country from customers
2    where country = 'Japan' or country = 'Germany' or country = 'Canada'
3    order by  country desc, customerName asc;
```

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

customerName	city	country
Osaka Souveniers Co.	Kita-ku	Japan
Tokyo Collectables, Ltd	Minato-ku	Japan
Bavarian Collectables Imports, Co.	Munich	Germany
Blauer See Auto, Co.	Frankfurt	Germany
Cramer Spezialitäten, Ltd	Brandenburg	Germany
Der Hund Imports	Berlin	Germany
Feuer Online Stores, Inc	Leipzig	Germany
Franken Gifts, Co	München	Germany
Kommission Auto	Münster	Germany
Messner Shopping Network	Frankfurt	Germany
Mit Vergnügen & Co.	Mannheim	Germany
Natürlich Autos	Cunewalde	Germany
Stuttgart Collectable Exchange	Stuttgart	Germany
Toms Spezialitäten, Ltd	Köln	Germany
Warburg Exchange	Aachen	Germany
Canadian Gift Exchange Network	Vancouver	Canada
Québec Home Shopping Network	Montréal	Canada
Royal Canadian Collectables, Ltd.	Tsawassen	Canada

2.3 List the order number and the total amount of sales for all orders. Name the total amount of sales column to “total_amount”.

```
1 •  select ordernumber,sum(quantityordered*priceeach) as 'total_amount' from orderdetails
2    group by ordernumber;
3
```

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

ordernumber	total_amount
10100	10223.83
10101	10549.01
10102	5494.78
10103	50218.95
10104	40206.20
10105	53959.21
10106	52151.81
10107	22292.62
10108	51001.22
10109	25833.14
10110	48425.69
10111	16537.85
10112	7674.94
10113	11044.30
10114	33383.14
10115	21665.98
10116	1627.56
10117	44380.15
10118	3101.40
10119	35826.33
10120	45864.03
10121	16700.47
10122	50824.66
10123	14571.44
10124	32641.98
10125	7565.08
10126	57131.92

2.4 List the order number and the total amount of sales of all orders that their total amount of sales is more than 55000. Name the total amount of sales column to “total_amount”.

```
1 •  select ordernumber,sum(quantityordered*priceeach) as 'total_amount' from orderdetails
2    group by ordernumber
3    having sum(quantityordered*priceeach) > 55000;
4
```

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

ordernumber	total_amount
10126	57131.92
10127	58841.35
10135	55601.84
10142	56052.56
10165	67392.85
10181	55069.55
10192	55425.77
10204	58793.53
10207	59265.14
10212	59830.55
10222	56822.65
10287	61402.00
10310	61234.67
10312	55639.66
10390	55902.50

2.5 List the customer name and the number of sales orders of all customers whose name start with the letter 'D'. Name the number of sales orders column to "num_orders".

```
1 •  select c.customername,count(o.ordernumber) as 'num_orders' from
2    customers c join orders o on c.customernumber = o.customernumber
3    where c.customername like 'D%'
4    group by c.customername;
5
```

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

customername	num_orders
Danish Wholesale Imports	5
Dragon Souveniers, Ltd.	5
Diecast Classics Inc.	4
Daedalus Designs Imports	2
Down Under Souveniers, Inc	5
Double Decker Gift Stores, Ltd	2
Diecast Collectables	2

Result Grid | Form Editor

2.6 List the customer name, the sales rep employee last name, and the check number of all customers who made the payment in year 2005. Name the sales rep employee last name column to "salesempname".

```
1  select c.customername,e.lastname as 'Salesepname' from
2  customers c join employees e on c.salesrepemployeenumber = e.employeenumber
3  join payments p on c.customernumber = p.customernumber
4  where extract(year from p.paymentdate) = 2005;
5
```

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

customername	Salesepname
La Rochelle Gifts	Hernandez
Mini Gifts Distributors Ltd.	Jennings
Mini Gifts Distributors Ltd.	Jennings
Euro+ Shopping Channel	Hernandez
Euro+ Shopping Channel	Hernandez
Euro+ Shopping Channel	Hernandez
Dragon Souveniers, Ltd.	Nishi
Technics Stores Inc.	Jennings
Gift Depot Inc.	Vanauf
Toys of Finland, Co.	Bott
Toys4GrownUps.com	Thompson
Mini Caravy	Hernandez
Boards & Toys Co.	Thompson
Québec Home Shopping ...	Tseng
Alpha Cognac	Hernandez
Lyon Souveniers	Bondur
Anna's Decorations, Ltd	Fixter
Anna's Decorations, Ltd	Fixter
Souveniers And Things Co.	Fixter
Oulu Toy Supplies, Inc.	Bott
Mini Creations Ltd.	Firrelli
Corporate Gift Ideas Co.	Jennings
Down Under Souveniers,...	Marsh
Australian Gift Network, Co	Fixter
Suominen Souveniers	Bott
Marseille Mini Autos	Bondur
Reims Collectables	Bondur

2.7 List the manager last name (the employee who were reported to) and the number of employees of all managers. Name the manager last name and the number of employees columns to “mgrname” and “num_emp”, respectively.

```
1 •  select mng.lastname as mgrname, count(emp.lastname) as num_emp
2    from employees emp join employees mng
3    on emp.reportsto = mng.employeenumber
4    group by mng.lastname;
5
```

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

mgrname	num_emp
Murphy	2
Patterson	7
Bow	6
Bondur	6
Nishi	1

Result Grid | Form Editor

2.8 Create your own question and the answered SQL statement should have SELECT, FROM, WHERE, GROUP BY and HAVING clauses.

-List customer number and name who live in “USA”, their country and sum of money they offered, group by their number that more than 100000.

```
1 •  select c.customernumber,c.customername,
2    c.country,sum(p.amount) as 'SumOfMoney' from
3    customers c join payments p on c.customernumber = p.customernumber
4    where c.country = 'USA'
5    group by c.customernumber
6    having sum(p.amount) > 100000;
7
```

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

customernumber	customername	country	SumOfMoney
124	Mini Gifts Distributors Ltd.	USA	584188.24
131	Land of Toys Inc.	USA	107639.94
151	Muscle Machine Inc	USA	177913.95
161	Technics Stores Inc.	USA	104545.22
320	Mini Creations Ltd.	USA	101872.52
321	Corporate Gift Ideas Co.	USA	132340.78
363	Online Diecast Creations Co.	USA	116449.29

2.9 Create your own question and the answered SQL statement should have SELECT, FROM 3 tables, WHERE and ORDER BY clauses.

-List employee Number who worked in “USA”, their country and name of customer that they represented to. Sort the results in descending order by employee Number.

```
1 •  select e.employeenumber,o.country,c.customername from
2    offices o join employees e on o.officecode = e.officecode
3    join customers c on e.employeenumber = c.salesrepemployeenumber
4    where o.country = 'USA' order by e.employeenumber desc;
5
```

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

employeenumber	country	customername
1323	USA	Motor Mint Distributors Inc.
1323	USA	Gift Ideas Corp.
1323	USA	Tekni Collectables Inc.
1323	USA	Mini Classics
1323	USA	Royal Canadian Collectables, Ltd.
1323	USA	Canadian Gift Exchange Network
1323	USA	Gift Depot Inc.
1323	USA	Land of Toys Inc.
1286	USA	Vitachrome Inc.
1286	USA	American Souvenirs Inc
1286	USA	Muscle Machine Inc
1286	USA	Microscale Inc.
1286	USA	Super Scale Inc.
1286	USA	Classic Legends Inc.
1286	USA	Québec Home Shopping Network
1216	USA	Gifts4AllAges.com
1216	USA	Online Diecast Creations Co.
1216	USA	FunGiftIdeas.com
1216	USA	Diecast Classics Inc.
1216	USA	Auto-Moto Classics Inc.
1216	USA	Marta's Replicas Co.
1188	USA	Diecast Collectables
1188	USA	Collectables For Less Inc.
1188	USA	Classic Gift Ideas, Inc
1188	USA	Mini Creations Ltd.
1188	USA	Online Mini Collectables
1188	USA	Cambridge Collectables Co.
1166	USA	West Coast Collectables Co.
1166	USA	Men 'R' US Retailers, Ltd.
1166	USA	Collectable Mini Designs Co.
1166	USA	Boards & Toys Co.
1166	USA	Toys4GrownUps.com
1166	USA	Signal Gift Stores
1165	USA	Mini Wheels Co.
1165	USA	Technics Stores Inc.
1165	USA	Corporate Gift Ideas Co.
1165	USA	Signal Collectibles Ltd.
1165	USA	The Sharp Gifts Warehouse
1165	USA	Mini Gifts Distributors Ltd.