



# SQL

## (part I)

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สาขาวิชาวิศวกรรมการสื่อสารและสารสนเทศ

- 1/79 คณะเทคโนโลยีอุตสาหกรรม มหาวิทยาลัยราชภัฏเทพสตรี

# 1. Introduction

# 1 . 1 Database

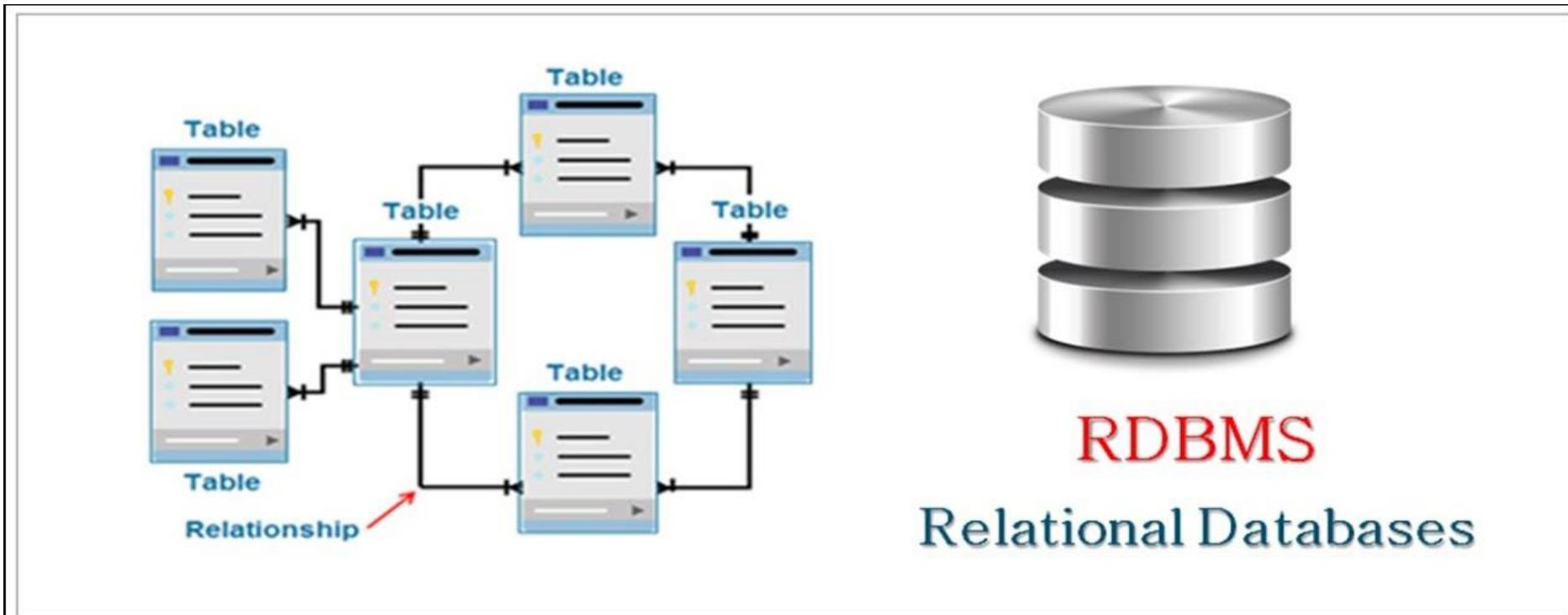
C : Create

R : Read

U : Update

D : Delete

# 1.1 Database



Relational Database Management System

[www.learncomputerscienceonline.com](http://www.learncomputerscienceonline.com)

# 1 . 2 MySQL



Welcome to phpMyAdmin

Language

English

Log in (?)

Username: data

Password: .....  
.....

Go

The screenshot shows the login interface of the phpMyAdmin web application. At the top left is the logo featuring a sailboat icon and the text "phpMyAdmin". Below it is a "Welcome to phpMyAdmin" message. A "Language" dropdown menu is set to "English". The main area contains a "Log in" button with a help icon. Below it are two input fields: "Username" containing "data" and "Password" containing a redacted string. A "Go" button is at the bottom right of the form.

Website: <https://theepsatri.com/phpMyAdmin>

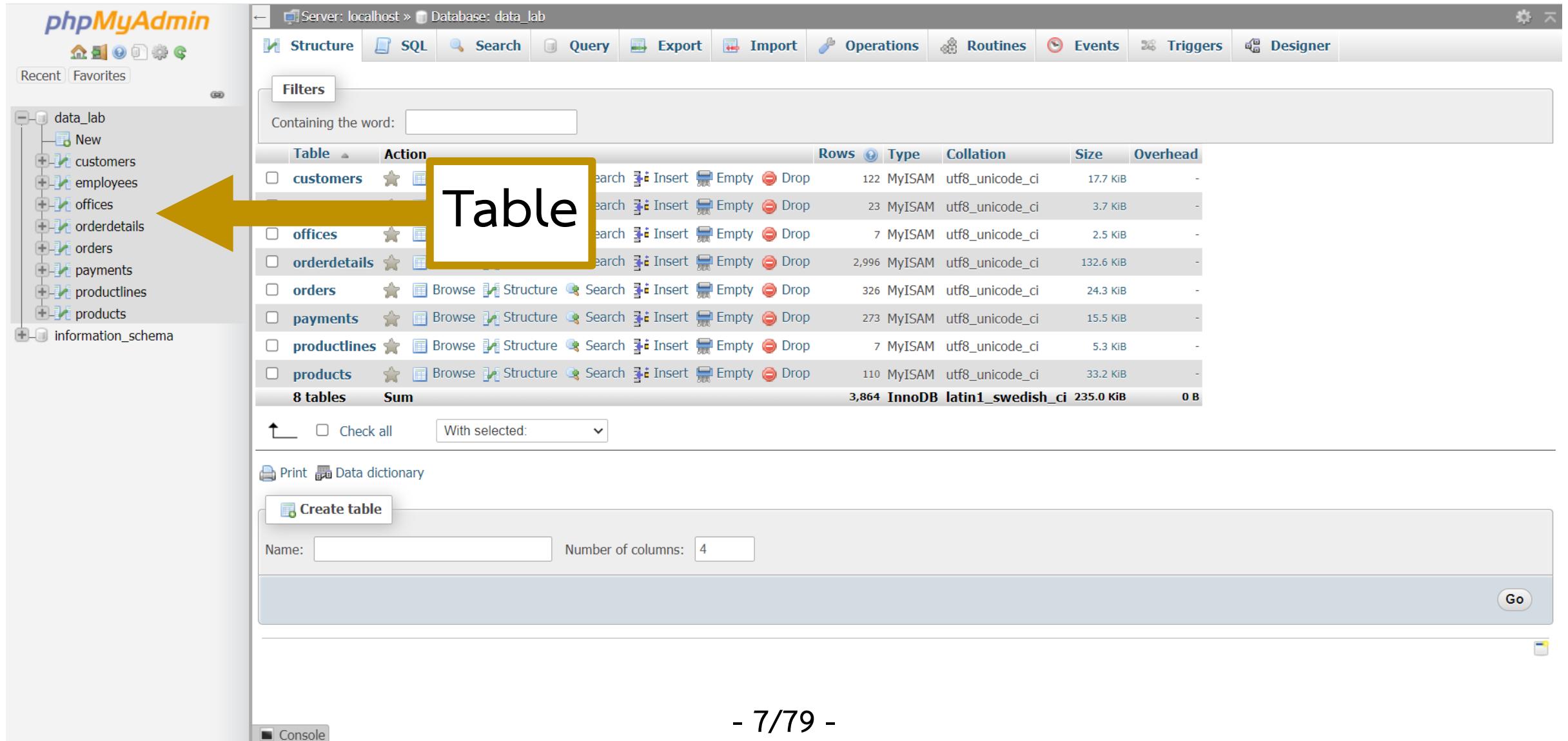
Username: data

Password: Data@2024

# 1 . 2 MySQL

The screenshot shows the phpMyAdmin interface for a MySQL database. The main navigation bar at the top includes links for Databases, SQL, Status, Export, Import, Settings, Variables,Charsets, Engines, and Plugins. On the left, a sidebar lists databases: 'data\_lab' and 'information\_schema'. A large yellow box highlights the word 'Database' in the top-left area of the main content. A yellow arrow points from the left towards this highlighted area. The main content area is divided into several sections: 'General settings' (with a 'Change password' link), 'Appearance settings' (Language: English, Theme: pmahomme, Font size: 82%, More settings), 'Database server' (Server: Localhost via UNIX socket, Server type: MariaDB, Server connection: SSL is not being used, Server version: 10.4.10-MariaDB - MariaDB Server, Protocol version: 10, User: data@localhost, Server charset: cp1252 West European (latin1)), 'Web server' (Apache/2, Database client version: libmysql - mysqlnd 5.0.12-dev - 20150407 - \$Id: 7cc7cc96e675f6d72e5cf0f267f48e167c2abb23 \$, PHP extension: mysqli curl mbstring, PHP version: 7.3.12), and 'phpMyAdmin' (Version information: 4.9.2, Documentation, Official Homepage, Contribute, Get support, List of changes, License). At the bottom, there is a 'Console' link.

# 1 . 2 MySQL



The screenshot shows the phpMyAdmin interface for a database named 'data\_lab'. On the left, there's a tree view of the database schema. A large yellow arrow points from the left towards the 'customers' table in the main list. A white box with a black border highlights the word 'Table'.

**Structure Tab:**

Table	Action	Rows	Type	Collation	Size	Overhead
customers	<a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	122	MyISAM	utf8_unicode_ci	17.7 KIB	-
offices	<a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	23	MyISAM	utf8_unicode_ci	3.7 KIB	-
orderdetails	<a href="#">Search</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	7	MyISAM	utf8_unicode_ci	2.5 KIB	-
orders	<a href="#">Search</a> <a href="#">Structure</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	326	MyISAM	utf8_unicode_ci	24.3 KIB	-
payments	<a href="#">Search</a> <a href="#">Structure</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	273	MyISAM	utf8_unicode_ci	15.5 KIB	-
productlines	<a href="#">Search</a> <a href="#">Structure</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	7	MyISAM	utf8_unicode_ci	5.3 KIB	-
products	<a href="#">Search</a> <a href="#">Structure</a> <a href="#">Insert</a> <a href="#">Empty</a> <a href="#">Drop</a>	110	MyISAM	utf8_unicode_ci	33.2 KIB	-
<b>8 tables</b>	<b>Sum</b>	<b>3,864</b>	<b>InnoDB</b>	<b>latin1_swedish_ci</b>	<b>235.0 Kib</b>	<b>0 B</b>

**Create Table Form:**

Name:  Number of columns:

Go

Console

# 1 . 2 MySQL

phpMyAdmin

Server: localhost » Database: data\_lab » Table: employees

Browse Structure SQL Search Insert Export

Showing rows 0 - 22 (23 total, Query took 0.0001 seconds.)

FROM `employees`

Show all Number of rows: 25 Filter rows: Search this table Sort by key

+ Options

	employeeNumber	lastName	firstName	extension	email	officeCode	reportsTo	jobTitle
<input type="checkbox"/>	1002	Murphy	Diane	x5800	dmurphy@classicmodelcars.com	1	NULL	President
<input type="checkbox"/>		Mary	x4611	mpatterso@classicmodelcars.com	1		1002	VP Sales
<input type="checkbox"/>		Jeff	x9273	jfirrelli@classicmodelcars.com	1		1002	VP Marketing
<input type="checkbox"/>		William	x4871	wpatterson@classicmodelcars.com	6		1056	Sales Manager (APAC)
<input type="checkbox"/>		Gerard	x5408	gbondur@classicmodelcars.com	4		1056	Sales Manager (EMEA)
<input type="checkbox"/>	1143	Bow	Anthony	x5428	abow@classicmodelcars.com	1		1056 Sales Manager (NA)
<input type="checkbox"/>	1165	Jennings	Leslie	x3291	ljennings@classicmodelcars.com	1		1143 Sales Rep
<input type="checkbox"/>	1166	Thompson	Leslie	x4065	lthompson@classicmodelcars.com	1		1143 Sales Rep
<input type="checkbox"/>	1188	Firrelli	Julie	x2173	jfirrelli@classicmodelcars.com	2		1143 Sales Rep
<input type="checkbox"/>	1216	Patterson	Steve	x4334	spatterson@classicmodelcars.com	2		1143 Sales Rep
<input type="checkbox"/>	1286	Tseng	Foon Yue	x2248	ftsing@classicmodelcars.com	3		1143 Sales Rep
<input type="checkbox"/>	1323	Vanauf	George	x4102	gvanauf@classicmodelcars.com	3		1143 Sales Rep
<input type="checkbox"/>	1337	Bondur	Loui	x6493	lbondur@classicmodelcars.com	4		1102 Sales Rep
<input type="checkbox"/>	1370	Hernandez	Gerard	x2028	ghernande@classicmodelcars.com	4		1102 Sales Rep
<input type="checkbox"/>	1401	Castillo	Pamela	x2759	pcastillo@classicmodelcars.com	4		1102 Sales Rep
<input type="checkbox"/>	1501	Bott	Larry	x2211 x102	lbott@classicmodelcars.com	7		1102 Sales Rep
<input type="checkbox"/>	1504	Jones	Barry		bjones@classicmodelcars.com	7		1102 Sales Rep

Console It Copy Delete - 8/79 -

**Database: data\_lab**

**Table: employees**

Browse เพื่อดูข้อมูลในตาราง

# 1.2 MySQL

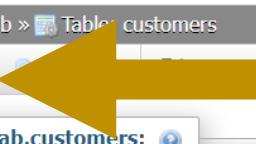
Structure เพื่อดูโครงสร้างของตาราง

The screenshot shows the phpMyAdmin interface with the following details:

- Left sidebar:** Shows the database structure with databases like data\_lab, customers, employees, offices, orderdetails, orders, payments, productlines, products, and information\_schema.
- Top navigation:** Server: localhost, Database: data\_lab, Table: customers, Structure tab (highlighted by a yellow arrow).
- Table structure:** The customers table has 13 columns:
  - customerNumber (int(11))
  - customerName (varchar(50))
  - contactLastName (varchar(50))
  - contactFirstName (varchar(50))
  - phone (varchar(50))
  - addressLine1 (varchar(50))
  - addressLine2 (varchar(50))
  - city (varchar(50))
  - state (varchar(50))
  - postalCode (varchar(15))
  - country (varchar(50))
  - salesRepEmployeeNumber (int(11))
  - creditLimit (double)
- Action buttons:** Check all, With selected: Browse, Change, Drop, Primary, Unique, Index, Fulltext, Fulltext.
- Bottom buttons:** Print, Propose table structure, Move columns, Normalize, Add (1 column(s) after creditLimit), Go.
- Indexes tab:** Shows one primary index: customerNumber (Type: BTREE, Unique: Yes, Packed: No). Action buttons: Edit, Drop.
- Console:** Shows the command history.

# 1 . 2 MySQL

SQL เพื่อเขียนคำสั่ง query



The screenshot shows the phpMyAdmin interface for a database named 'data\_lab'. The 'customers' table is selected. The SQL tab is active, displaying the query: 'SELECT \* FROM `customers` WHERE 1'. To the right of the query, there is a list of columns: customerNumber, customerName, contactLastName, contactFirstName, phone, addressLine1, addressLine2, city, state, postalCode, country, salesRepEmployeeNumber, and creditLimit. Below the query, there are several buttons: SELECT\*, SELECT, INSERT, UPDATE, DELETE, Clear, Format, and Get auto-saved query. There is also a checkbox for Bind parameters. At the bottom, there are options for Delimiter, Show this query here again (checked), Retain query box (unchecked), Rollback when finished (unchecked), and Enable foreign key checks (checked). A 'Go' button is located at the bottom right. The bottom left corner shows a 'Console' icon.

# 2. Query - I

## 2 . 1 SELECT . . FROM . . WHERE

```
SELECT      *
FROM       customers
```

# 2.1 SELECT . . FROM . . WHERE

phpMyAdmin

Recent Favorites

data\_lab

- New
- customers
- employees
- offices
- orderdetails
- orders
- payments
- productlines
- products

information\_schema

Server: localhost » Database: data\_lab » Table: customers

Browse Structure SQL Search Insert More

Run SQL query/queries on table \_lab.customers:

```
1 SELECT *
2 FROM customers
3
```

Columns

customerNumber  
customerName  
addressLine1  
addressLine2  
city  
state  
postalCode  
country  
salesRepEmployeeNumber  
creditLimit

SQL เพื่อเขียนคำสั่ง query

SELECT \* SELECT INSERT UPDATE  
DELETE Clear Format  
Get auto-saved query

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The screenshot shows the phpMyAdmin interface for the 'customers' table in the 'data\_lab' database. The 'SQL' tab is selected. A large red box highlights the text 'SQL เพื่อเขียนคำสั่ง query' (SQL to write a query) with an arrow pointing to the SQL input field. The SQL code 'SELECT \* FROM customers' is visible in the field. To the right of the input field, there is a list of columns: customerNumber, customerName, addressLine1, addressLine2, city, state, postalCode, country, salesRepEmployeeNumber, and creditLimit.

# 2.1 SELECT . . FROM . . WHERE

phpMyAdmin

Server: localhost » Database: data\_lab » Table: customers

Browse Structure SQL Search Insert Export Import Operations Triggers

Show query box

Showing rows 0 - 24 (122 total, Query took 0.0024 seconds.)

SELECT \* FROM customers

Profiling [Edit inline] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

1 > >> Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

	customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	103	Atelier graphique	Schmitt	Carine	40.32.2555	54, rue Royale	NULL	Nantes	NULL	44000	France
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	112	Signal Gift Stores	King	Jean	7025551838	8489 Strong St.	NULL	Las Vegas	NV	83030	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	114	Australian Collectors, Co.	Ferguson	Peter	03 9520 4555	636 St Kilda Road	Level 3	Melbourne	Victoria	3004	Australia
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	119	La Rochelle Gifts	Labrune	Janine	40.67.8555	67, rue des Cinquante Otages	NULL	Nantes	NULL	44000	France
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	121	Baane Mini Imports	Bergulfsen	Jonas	07-98 9555	Erling Skakkes gate 78	NULL	Stavern	NULL	4110	Norway
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	124	Mini Gifts Distributors Ltd.	Nelson	Susan	4155551450	5677 Strong St.	NULL	San Rafael	CA	97562	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	125	Havel & Zbyszek Co	Piestrzewicz	Zbyszek	(26) 642-7555	ul. Filtrowa 68	NULL	Warszawa	NULL	01-012	Poland
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	128	Blauer See Auto, Co.	Keitel	Roland	+49 69 66 90 2555	Lyonerstr. 34	NULL	Frankfurt	NULL	60528	Germany
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	129	Mini Wheels Co.	Murphy	Julie	6505555787	5557 North Pendale Street	NULL	San Francisco	CA	94217	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	131	Land of Toys Inc.	Lee	Kwai	2125557818	897 Long Airport Avenue	NULL	NYC	NY	10022	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	141	Euro+ Shopping Channel	Freyre	Diego	(91) 555 94 44	C/ Moralzarjal, 86	NULL	Madrid	NULL	28034	Spain
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	144	Volvo Model Replicas, Co	Berglund	Christina	0921-12 3555	Berguvsvägen 8	NULL	Luleå	NULL	S-958 22	Sweden
<input type="checkbox"/> <a href="#">Console</a> <a href="#">Copy</a> <a href="#">Delete</a>	145	Danish Wholesale	Tvrtke	Ivana	31 12 3555	Vinħællet 34	NULL	Koħieni	NULL	1734	Denmark

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## 2 . 1 SELECT . . FROM . . WHERE

**SELECT**    customers.customerNumber,  
              customers.customerName,  
              customers.country  
**FROM**      customers

# 2.1 SELECT . . FROM . . WHERE

phpMyAdmin

Server: localhost » Database: data\_lab » Table: customers

Browse Structure SQL Search Insert Export Import Operations Triggers

Show query box

✓ Showing rows 0 - 24 (122 total, Query took 0.0019 seconds.)

```
SELECT customers.customerNumber, customers.customerName, customers.country FROM customers
```

Profiling [Edit inline] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

1 > >> Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

	customerNumber	customerName	country
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	103	Atelier graphique	France
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	112	Signal Gift Stores	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	114	Australian Collectors, Co.	Australia
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	119	La Rochelle Gifts	France
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	121	Baane Mini Imports	Norway
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	124	Mini Gifts Distributors Ltd.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	125	Havel & Zbyszek Co	Poland
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	128	Blauer See Auto, Co.	Germany
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	129	Mini Wheels Co.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	131	Land of Toys Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	141	Euro+ Shopping Channel	Spain
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	144	Volvo Model Replicas, Co	Sweden
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	145	Danish Wholesale Imports	Denmark
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	146	Saveley & Henriot, Co.	France
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	148	Dragon Souvenirs, Ltd.	Singapore
<input type="checkbox"/> <a href="#">Console</a> <a href="#">Copy</a> <a href="#">Delete</a>	151	Muscle Machine Inc	USA

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## 2 . 1 SELECT . . FROM . . WHERE

```
SELECT customers.customerNumber,  
       customers.customerName,  
       customers.country  
FROM   customers  
WHERE  customers.country = 'USA'
```

# 2.1 SELECT . . FROM . . WHERE

phpMyAdmin

Server: localhost » Database: data\_lab » Table: customers

Browse Structure SQL Search Insert Export Import Operations Triggers

Showing rows 0 - 24 (36 total, Query took 0.0043 seconds.)

SELECT customers.customerNumber, customers.customerName, customers.country FROM customers WHERE customers.country = 'USA'

1 > >> Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

Profiling [Edit inline] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh]

	customerNumber	customerName	country
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	112	Signal Gift Stores	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	124	Mini Gifts Distributors Ltd.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	129	Mini Wheels Co.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	131	Land of Toys Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	151	Muscle Machine Inc	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	157	Diecast Classics Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	161	Technics Stores Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	168	American Souvenirs Inc	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	173	Cambridge Collectables Co.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	175	Gift Depot Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	181	Vitachrome Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	198	Auto-Moto Classics Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	204	Online Mini Collectables	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	205	Toys4GrownUps.com	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	219	Boards & Toys Co.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	239	Collectable Mini Designs Co.	USA
<input type="checkbox"/> <a href="#">Console</a> <a href="#">Copy</a> <a href="#">Delete</a>	286	Marta's Replicas Co.	USA

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## 2.1 SELECT . . FROM . . WHERE

ให้ query ข้อมูล customers ประกอบไปด้วย customerNumber,  
customerName และ country โดยแสดงเฉพาะลูกค้าในประเทศ Norway

## 2.1 SELECT . . FROM . . WHERE

ให้ query ข้อมูล customers ประกอบไปด้วย customerNumber,  
customerName และ country โดยแสดงเฉพาะลูกค้าในกลุ่มประเทศ Norway,  
Denmark และ Finland

## 2 . 1 SELECT . . FROM . . WHERE

```
SELECT payments.customerNumber,  
       payments.amount  
FROM   payments  
WHERE  payments.amount > 5000
```

# 2.1 SELECT . . FROM . . WHERE

phpMyAdmin

Server: localhost > Database: data\_lab > Table: payments

Browse Structure SQL Search Insert Export Import Operations Triggers

Showing rows 0 - 24 (253 total, Query took 0.0346 seconds.)

SELECT payments.customerNumber, payments.amount FROM payments WHERE payments.amount > 5000

1 > >> Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

	customerNumber	amount
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	103	6066.78
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	103	14571.44
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	112	14191.12
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	112	32641.98
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	112	33347.88
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	114	45864.03
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	114	82261.22
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	114	7565.08
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	114	44894.74
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	119	19501.82
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	119	47924.19
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	119	49523.67
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	121	50218.95
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	121	17876.32
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	121	34638.14
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	124	101244.59
<input type="checkbox"/> Edit <input type="button" value="Copy"/> <input type="button" value="Delete"/>	124	85410.87

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## 2.1 SELECT . . FROM . . WHERE

ให้ query หาข้อมูล orders ประกอบไปด้วย orderNumber, status และ customerNumber โดยแสดงเฉพาะข้อมูล customerNumber รหัส 124

## 2.1 SELECT . . FROM . . WHERE

ให้ query หาข้อมูล orders ประกอบไปด้วย orderNumber, status และ customerNumber โดยแสดงเฉพาะข้อมูล customerNumber รหัส 103, 112 และ 114

## 2 . 2 ORDER BY

```
SELECT customers.customerNumber,  
        customers.customerName,  
        customers.country  
FROM    customers  
WHERE   customers.country = 'USA'  
ORDER BY customers.customerName
```

# 2.2 ORDER BY

phpMyAdmin

Server: localhost » Database: data\_lab » Table: customers

Browse Structure SQL Search Insert Export Import Operations Triggers

Show query box

Showing rows 0 - 24 (36 total, Query took 0.0011 seconds.) [customerName: AMERICAN SOUVENIRS INC... - MUSCLE MACHINE INC...]

SELECT customers.customerNumber, customers.customerName, customers.country FROM customers WHERE customers.country = 'USA' ORDER BY customers.customerName

Profiling [Edit inline] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

1 > >> Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

	customerNumber	customerName	country
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	168	American Souvenirs Inc	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	198	Auto-Moto Classics Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	219	Boards & Toys Co.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	173	Cambridge Collectables Co.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	339	Classic Gift Ideas, Inc	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	424	Classic Legends Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	239	Collectable Mini Designs Co.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	379	Collectables For Less Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	321	Corporate Gift Ideas Co.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	157	Diecast Classics Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	495	Diecast Collectables	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	462	FunGiftIdeas.com	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	175	Gift Depot Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	447	Gift Ideas Corp.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	362	Gifts4AllAges.com	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	131	Land of Toys Inc.	USA

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## 2 . 2 ORDER BY

```
SELECT customers.customerNumber,  
       customers.customerName,  
       customers.country  
  FROM customers  
 WHERE customers.country = 'USA'  
ORDER BY customers.customerName DESC
```

# 2.2 ORDER BY

phpMyAdmin

Server: localhost » Database: data\_lab » Table: customers

Browse Structure SQL Search Insert Export Import Operations Triggers

Showing rows 0 - 24 (36 total, Query took 0.0006 seconds.) [customerName: WEST COAST COLLECTABLES CO.... - FUNGIFTIDEAS.COM...]

SELECT customers.customerNumber, customers.customerName, customers.country FROM customers WHERE customers.country = 'USA' ORDER BY customers.customerName DESC

Profiling [Edit inline] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

1 > >> Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

	customerNumber	customerName	country
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	475	West Coast Collectables Co.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	181	Vitachrome Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	205	Toys4GrownUps.com	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	450	The Sharp Gifts Warehouse	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	328	Tekni Collectables Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	161	Technics Stores Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	455	Super Scale Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	112	Signal Gift Stores	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	487	Signal Collectibles Ltd.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	204	Online Mini Collectables	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	363	Online Diecast Creations Co.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	151	Muscle Machine Inc	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	486	Motor Mint Distributors Inc.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	129	Mini Wheels Co.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	124	Mini Gifts Distributors Ltd.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	320	Mini Creations Ltd.	USA
<input type="checkbox"/> <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	319	Mini Classics	USA

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## 2.2 ORDER BY

ให้ query หาข้อมูล payments ประกอบไปด้วย customerNumber และ amount โดยเรียงลำดับตามยอด amount จากมากไปน้อย

## 2.2 ORDER BY

ให้ query หาข้อมูล employees ประกอบไปด้วย employeeNumber, firstName และ lastName โดยเรียงลำดับตาม employeeNumber จากมากไปน้อย

## 2 . 3 LIMIT

```
SELECT payments.customerNumber,  
       payments.amount  
FROM   payments  
ORDER BY payments.amount DESC  
LIMIT  0,3
```

# 2 . 3 LIMIT

phpMyAdmin

Server: localhost » Database: data\_lab » Table: payments

Browse Structure SQL Search Insert Export Import Operations Triggers

Showing rows 0 - 2 (3 total, Query took 0.0001 seconds.) [amount: 120166.58... - 111654.4...]

```
1 SELECT payments.customerNumber, payments.amount
2 FROM payments
3 ORDER BY payments.amount DESC
4 LIMIT 0,3
```

Enable foreign key checks

Go Cancel Profiling [Edit inline] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

+ Options

customerNumber	amount
141	120166.58
141	116208.4
124	111654.4

Check all With selected:

Query results operations

Print

Console

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## 2 . 3 LIMIT

ให้ query หาข้อมูล products ประกอบไปด้วย productCode, productName และ buyPrice โดยแสดงเฉพาะข้อมูลตาม buyPrice มากที่สุด 10 ลำดับแรก



## 2.4 DISTINCT

```
SELECT city  
FROM customers  
ORDER BY city
```

Server: localhost » Database: data\_lab » Table: customers

Browse Structure SQL Search Insert Export Import Operat

row query box

Showing rows 0 - 24 (122 total, Query took 0.0087 seconds.) [city: AACHEN... - CAMBRIDGE...]

lect city from customers order by city

1 > >> | Show all | Number of rows: 25 | Filter rows: Search this table

options

	city	▲ 1				
	Edit		Copy		Delete	Aachen
	Edit		Copy		Delete	Allentown
	Edit		Copy		Delete	Amsterdam
	Edit		Copy		Delete	Århus
	Edit		Copy		Delete	Auckland
	Edit		Copy		Delete	Auckland
	Edit		Copy		Delete	Auckland
	Edit		Copy		Delete	Barcelona
	Edit		Copy		Delete	Bergamo
	Edit		Copy		Delete	Bergen

ชื่อประเทศซ้ำ

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## 2.4 DISTINCT

```
SELECT DISTINCT city  
FROM customers  
ORDER BY city
```

Showing rows 0 - 24 (95 total, Query took 0.0019 seconds.) [city: AACHEN... - COWES...]

```
SELECT DISTINCT city FROM customers ORDER BY city
```

1 < > >> | Show all | Number of rows: 25 | Filter rows: Search

Actions	city	1
<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	Aachen	
<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	Allentown	
<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	Amsterdam	
<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	Århus	
<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	Auckland	
<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	Barcelona	
<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	Bergamo	
<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	Bergen	
<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	Berlin	
<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	Bern	
<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	Boston	

## 2.4 DISTINCT

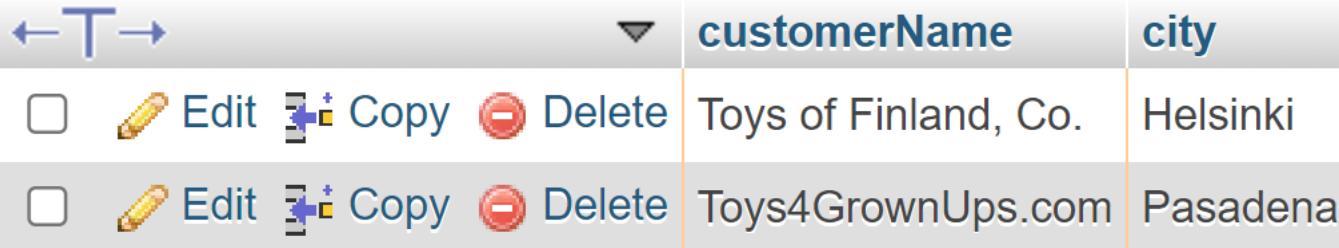
ให้ query หาข้อมูลนามสกุลของพนักงานที่ไม่ซ้ำกัน



# 2.5 LIKE

```
SELECT    customerName, city  
FROM      customers  
WHERE    customerName like 'Toy%'
```

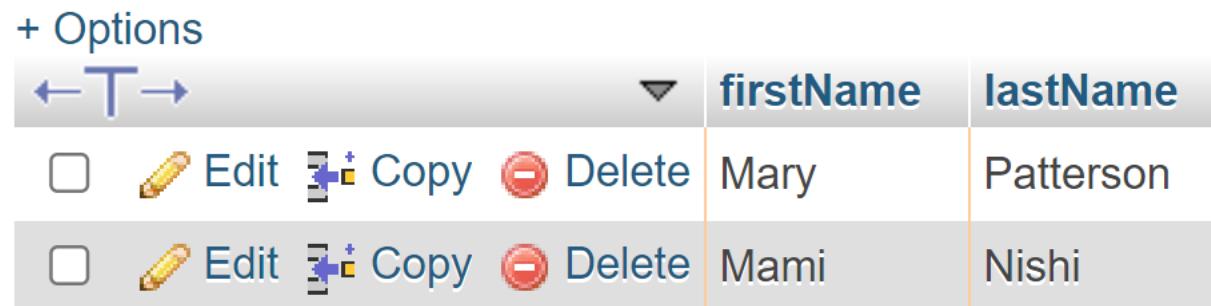
+ Options



	customerName	city
<input type="checkbox"/>  Edit  Copy  Delete	Toys of Finland, Co.	Helsinki
<input type="checkbox"/>  Edit  Copy  Delete	Toys4GrownUps.com	Pasadena

# 2.5 LIKE

```
SELECT    firstName, lastName  
FROM      employees  
WHERE    firstName like 'M__'
```



A screenshot of a MySQL Workbench grid interface. The grid has columns for 'firstName' and 'lastName'. There are two rows of data:

	firstName	lastName
<input type="checkbox"/>   	Mary	Patterson
<input type="checkbox"/>   	Mami	Nishi

# 3 . Query-II

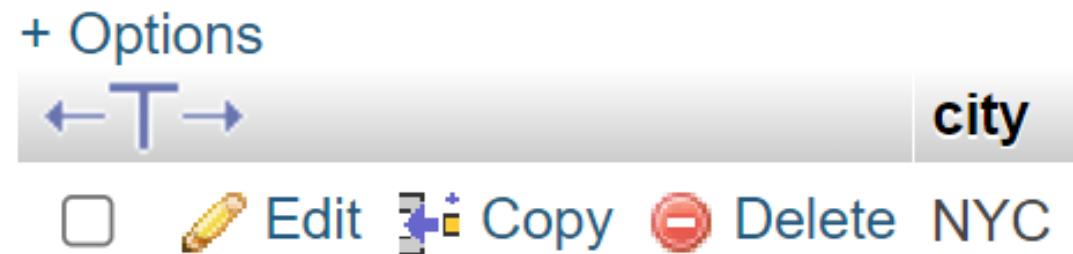
# 3.1 Sub Query

มีบริษัทลูกค้าอะไรบ้าง ที่อยู่เมืองเดียวกับบริษัท Vitachrome Inc.

# 3.1 Sub Query

ขั้นตอนแรก หาว่า Vitachrome Inc. อยู่ที่เมืองอะไร

```
SELECT      city
FROM        customers
WHERE       customerName='Vitachrome Inc.'
```



# 3.1 Sub Query

ขั้นที่สอง

นำเมืองที่ได้จากขั้นตอนแรกมาหาว่ามีบริษัทอะไรอยู่ที่เมืองนี้บ้าง

```
SELECT  
FROM  
WHERE
```

customerName  
customers  
city = 'NYC'

+ Options		customerName
<input type="checkbox"/>	 Edit	 Copy  Delete Land of Toys Inc.
<input type="checkbox"/>	 Edit	 Copy  Delete Muscle Machine Inc
<input type="checkbox"/>	 Edit	 Copy  Delete Vitachrome Inc.
<input type="checkbox"/>	 Edit	 Copy  Delete Classic Legends Inc.
<input type="checkbox"/>	 Edit	 Copy  Delete Microscale Inc.

# 3.1 Sub Query

มีบริษัทลูกค้าอะไรบ้าง ที่อยู่เมืองเดียวกับบริษัท Vitachrome Inc.

สามารถเรียกคำสั่ง SQL ซ้อนกันได้ เพื่อทำงานเพียงครั้งเดียว

```
SELECT      customerName  
FROM        customers  
WHERE       city = (  
                      SELECT      city  
                      FROM        customers  
                      WHERE       customerName='Vitachrome Inc.'  
)
```

# 3.1 Sub Query

- ให้แสดงรายชื่อพนักงานที่มีนามสกุลเดียวกับ William
- ให้แสดงรายชื่อและนามสกุลพนักงานที่อยู่ออฟฟิศเดียวกับ William Patterson

## 3.2 Function

ยอดชำระเงินที่มากที่สุด น้อยที่สุด คือเท่าไร

```
SELECT      MAX(amount), MIN(amount)  
FROM        payments
```

# 3.2 Function

ยอดชำระเงินของลูกค้า 103

```
SELECT      customerNumber, amount  
FROM        payments  
WHERE       customerNumber = 103
```

customerNumber	amount
103	6066.78
103	14571.44
103	1676.14

```
SELECT      customerNumber, SUM(amount)  
FROM        payments  
WHERE       customerNumber = 103
```

customerNumber	SUM(amount)
103	22314.36

# 3.3 GROUP BY

Server: localhost » Database: data\_lab » Table: customers

Browse Structure SQL Search Insert Export Import Operations Triggers

Showing rows 0 - 24 (122 total, Query took 0.0008 seconds.) [salesRepEmployeeNumber: 1702... - 1504...]

SELECT \* FROM `customers` ORDER BY `customers`.`salesRepEmployeeNumber` DESC

Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

Profiling [Edit inline] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

	customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumber	creditLimit
<a href="#">Copy</a> <a href="#">Delete</a>	216	Enaco Distributors	Saavedra	Eduardo	(93) 203 4555	Rambla de Cataluña, 23	NULL	Barcelona	NULL	08022	Spain	1702	60300
<a href="#">Copy</a> <a href="#">Delete</a>	298	Vida Sport, Ltd	Holz	Mihael	0897-034555	Grenzacherweg 237	NULL	Genève	NULL	1203	Switzerland	1702	141300
<a href="#">Copy</a> <a href="#">Delete</a>	344	CAF Imports	Fernandez	Jesus	+34 913 728 555	Merchants House	27-30 Merchant's Quay	Madrid	NULL	28023	Spain	1702	59600
<a href="#">Copy</a> <a href="#">Delete</a>	376	Precious Collectables	Urs	Braun	0452-076555	Hauptstr. 29	NULL	Bern	NULL	30123	Switzerland	1702	0
<a href="#">Copy</a> <a href="#">Delete</a>	458	Corrida Auto Replicas, Ltd	So	Tom	+34 91 00 6342 5555	Plaza de Toros 100	1-6-20 Dojima	Kita-ku	Osaka	28023	Spain	1702	104600
<a href="#">Copy</a> <a href="#">Delete</a>	484	Iberia Gift Imports, Corp.	Ro	Paul	+34 91 00 6342 5555	Bank of China Tower	1 Garden Road	Central Hong Kong	NULL	41101	Spain	1702	65700
<a href="#">Copy</a> <a href="#">Delete</a>	148	Dragon Souveniers, Ltd.	Nan	Patricia	+34 91 00 6342 5555	15 McCallum Street	NatWest Center #13-03	Makati City	NULL	079903	Singapore	1621	103800
<a href="#">Copy</a> <a href="#">Delete</a>	177	Osaka Souveniers Co.	Kentary	Mory	+852 2251 1555	Bank of China Tower	1 Garden Road	Central Hong Kong	NULL	550 0010	Japan	1621	81200
<a href="#">Copy</a> <a href="#">Delete</a>	211	King Kong Collectables, Co.	Gao	Mike	+852 2251 1555	15 McCallum Street	NatWest Center #13-03	Makati City	NULL	1227 MM	Philippines	1621	58600
<a href="#">Copy</a> <a href="#">Delete</a>	385	Cruz & Sons Co.	Cruz	Arnold	+63 2 555 3587	Minato-ku	Tokyo	106-0032	Japan	1621	81500		
<a href="#">Copy</a> <a href="#">Delete</a>	398	Tokyo Collectables, Ltd	Shimamura	Akiko	+81 3 3584 0000	- 49/79 -	2-3-2 Roppongi	Minato-ku	Tokyo	106-0032	Japan	1621	94400

จัด Group ตามรหัสพนักงาน

### 3 . 3 GROUP BY

<b><i>salesRepEmployeeNumber</i></b>	<b><i>COUNT(customers.customerNumber)</i></b>
<i>NULL</i>	22
1165	6
1166	6
1188	6
1216	6
1286	7
1323	8
1337	6
1370	7
1401	10
1501	8
1504	9
1611	5
1612	5
1621	5
1702	6

## 3 . 3 GROUP BY

```
SELECT    customers.salesRepEmployeeNumber,  
          COUNT(customers.customerNumber)  
FROM      customers  
GROUP BY  customers.salesRepEmployeeNumber
```

### 3 . 3 GROUP BY

<b><i>salesRepEmployeeNumber</i></b>	<b><i>COUNT(customers.customerNumber)</i></b>
<i>NULL</i>	22
1165	6
1166	6
1188	6
1216	6
1286	7
1323	8
1337	6
1370	7
1401	10
1501	8
1504	9
1611	5
1612	5
1621	5
1702	6

## 3 . 3 GROUP BY

```
SELECT      orders.customerNumber,  
           COUNT(orders.orderNumber) as 'Number of Orders'  
FROM        orders  
GROUP BY    orders.customerNumber  
ORDER BY    `Number of Orders` DESC
```

# 3 . 3 GROUP BY

customerNumber	Number of Orders
141	26
124	17
148	5
114	5
145	5
353	5
323	5
321	4
381	4
128	4
496	4
282	4
121	4
382	4
161	4
131	4
450	4
276	4
398	4
151	4
166	4
157	4
144	4
119	4
424	3

### 3.3 GROUP BY

ให้ query หาข้อมูล orderdetails ประกอบไปด้วย productCode และจำนวนการสั่งสินค้าซึ่นน้ำๆ (Number of Orders)

### 3.3 GROUP BY

ยอดชำระเงินของลูกค้าแต่ละคน

```
SELECT customerNumber, SUM(amount)  
FROM payments  
GROUP BY customerNumber
```

customerNumber	SUM(amount)
103	22314.36
112	80180.98
114	180585.06999999998
119	116949.68000000001
121	104224.79
124	584188.2400000001
128	75937.76000000001
129	66710.56
131	107639.94
141	715738.9800000001
144	43680.65

### 3.3 GROUP BY

ให้แสดงจำนวนพนักงานแยกตามออฟฟิศ

```
SELECT officeCode, COUNT(officeCode)
FROM employees
GROUP BY officeCode
```

officeCode	COUNT(officeCode)
1	6
2	2
3	2
4	5
5	2
6	4
7	2



# 4 . Join

# 4 . 1 Left-Join #1

employees

offices

employeeNumber	firstName	officeCode	officeCode	country
1002	Dane	1	1	USA
1056	Mary	1	1	USA
1076	Jon	1	1	USA
1088	William	6	6	Australia
1102	Gerard	4	4	France
1143	Anthony	1	1	USA
1165	Leslie	1	1	USA
1166	Leslie	1	1	USA
1188	Julie	2	2	USA
1216	Steve	2	2	USA
1286	Foon Yue	3	3	USA
1323	George	3	3	USA
1337	Loui	4	4	France
1370	Gerard	4	4	France
1401	Pamela	4	4	France
1501	Larry	7	7	UK
1504	Barry	7	7	UK
1611	Andy	6	6	Australia
1612	Peter	6	6	Australia
1619	Tom	6	6	Australia
1621	Mami	5	5	Japan
1625	Yoshimi	-560/79 -	5	Japan

# 4 . 1 Left-Join #1

employeeNumber	firstName	officeCode
1002	Diane	1
1056	Mary	1
1076	Jeff	1
1088	William	6
1102	Gerard	4
1143	Anthony	1
1165	Leslie	1
1166	Leslie	1
1188	Julie	2
1216	Steve	2
1286	Foon Yue	3
1323	George	3
1337	Loui	4
1370	Gerard	4

```
SELECT employeeNumber,  
       firstName,  
       officeCode  
FROM employees
```

# 4 . 1 Left-Join #1

officeCode	country
1	USA
2	USA
3	USA
4	France
5	Japan
6	Australia
7	UK

```
SELECT officeCode,  
       country  
FROM   offices
```

# 4 . 1 Left-Join #1

employeeNumber	firstName	officeCode
1002	Diane	1
1056	Mary	1
1076	Jeff	1
1088	William	6
1102	Gerard	4
1143	Anthon	
1165	Leslie	1
1166	Leslie	1
1188	Julie	2
1216	Steve	2
1286	Foon Yue	3
1323	George	3
1337	Loui	4
1370	Gerard	4

employees

officeCode	country
1	USA
2	USA
3	USA
4	France
5	Spain
6	Australia
7	UK

offices

# 4 . 1 Left-Join #1

```
SELECT employees.employeeNumber,  
       employees.firstName,  
       employees.officeCode,  
       offices.officeCode,  
       offices.country  
  
FROM   employees  
LEFT JOIN offices  
ON     employees.officeCode = offices.officeCode
```

employeeNumber	firstName	officeCode	officeCode	country
1002	Diane	1	1	USA
1056	Mary	1	1	USA
1076	Jeff	1	1	USA
1088	William	6	6	Australia
1102	Gerard	4	4	France
1143	Anthony	1	1	USA
1165	Leslie	1	1	USA
1166	Leslie	1	1	USA
1188	Julie	2	2	USA
1216	Steve	2	2	USA
1286	Foon Yue	3	3	USA
1323	George	3	3	USA
1337	Loui	4	4	France
1370	Gerard	4	4	France
1401	Pamela	4	4	France
1501	Larry	7	7	UK
1504	Barry	7	7	UK
1611	Andy	6	6	Australia
1612	Peter	6	6	Australia
1619	Tom	6	6	Australia
1621	Mami	5	5	Japan
1625	Yoshimi	5	5	Japan

# 4 . 1 Left-Join #2

customerName	salesRepEmployeeNumber	firstName	lastName
Atelier graphique	1370	Gerard	Hernandez
Signal Gift Stores	1166	Leslie	Thompson
Australian Collectors Co.	1611	Andy	Fixter
La Rochelle Gifts	1370	Gerard	Hernandez
Baane Mini Imports	1504	Barry	Jones
Uni Gifts Distributors Ltd.	1165	Leslie	Jennings
Javael & Zbyszek Co	NULL	NULL	NULL
Blauer See Auto, Co.	1504	Barry	Jones
Mini Wheels Co.	1165	Leslie	Jennings
Land of Toys Inc.	1323	George	Vanauf
Euro+ Shopping Channel	1370	Gerard	Hernandez
Volvo Model Replicas, Co	1504	Barry	Jones
Danish Wholesale Imports	1401	Pamela	Castillo
Saveley & Henriot, Co.	1337	Loui	Bondur
Dragon Souveniers, Ltd.	1621	Mami	Nishi
Muscle Machine Inc	1286	Foon Yue	Tseng
Diecast Classics Inc.	1216	Steve	Patterson
Technics Stores Inc.	1165	Leslie	Jennings
Handji Gifts& Co	1612	Peter	Marsh
Herkku Gifts	1504	Barry	Jones
American Souvenirs Inc	1286	Foon Yue	Tsena

# 4 . 1 Left-Join #2

customerName	salesRepEmployeeNumber
Atelier graphique	1370
Signal Gift Stores	1166
Australian Collectors, Co.	1611
La Rochelle Gifts	1370
Baane Mini Imports	1504
Mini Gifts Distributors Ltd.	1165
Havel & Zbyszek Co	NULL
Blauer See Auto, Co.	1504

customers

employeeNumber	firstName	lastName
1002	Diane	Murphy
1056	Mary	Patterson
1076	Jeff	Firrelli
1088	William	Patterson
1102	Gerard	Bondur
1143	Anthony	Bow
	Leslie	Jennings
	Leslie	Thompson

employees

```
SELECT      customerName,  
            salesRepEmployeeNumber  
FROM        customers
```

```
SELECT      employeeNumber,  
            firstName,  
            lastName  
FROM        employees
```

# 4 . 1 Left-Join #2

```
SELECT    customers.customerName,  
          customers.salesRepEmployeeNumber,  
          employees.firstName,  
          employees.lastName  
FROM      customers  
LEFT JOIN employees  
ON        customers.salesRepEmployeeNumber =  
                  employees.employeeNumber
```

# 4 . 1 Left-Join #2

customerName	salesRepEmployeeNumber	firstName	lastName
Atelier graphique	1370	Gerard	Hernandez
Signal Gift Stores	1166	Leslie	Thompson
Australian Collectors, Co.	1611	Andy	Fixter
La Rochelle Gifts	1370	Gerard	Hernandez
Baane Mini Imports	1504	Barry	Jones
Mini Gifts Distributors Ltd.	1165	Leslie	Jennings
Havel & Zbyszek Co	NULL	NULL	NULL
Blauer See Auto, Co.	1504	Barry	Jones
Mini Wheels Co.	1165	Leslie	Jennings
Land of Toys Inc.	1323	George	Vanauf
Euro+ Shopping Channel	1370	Gerard	Hernandez
Volvo Model Replicas, Co	1504	Barry	Jones
Danish Wholesale Imports	1401	Pamela	Castillo
Saveley & Henriot, Co.	1337	Loui	Bondur
Dragon Souveniers, Ltd.	1621	Mami	Nishi
Muscle Machine Inc	1286	Foon Yue	Tseng
Diecast Classics Inc.	1216	Steve	Patterson
Technics Stores Inc.	1165	Leslie	Jennings
Handji Gifts& Co	1612	Peter	Marsh
Herkku Gifts	1504	Barry	Jones
American Souvenirs Inc	- 68/79 -	1286	Foon Yue
			Tsena

# 4 . 1 Left-Join #3

productCode	Number of Orders
S18_3232	53
S24_2840	28
S700_1691	28
S32_3522	28
S18_3029	28
S18_2949	28
S24_3816	28
S32_1374	28
S24_1937	28
S700_4002	28
S18_2319	28
S24_3949	28
S18_4668	28
S10_4962	28
S12_2823	28
S700_2047	28
S700_2824	28
S18_3856	28
S18_2957	28
S24_2022	28

**SELECT**

orderdetails.productCode,  
**COUNT**(orderdetails.orderNumber) AS  
'Number of Orders'  
**FROM** orderdetails  
**GROUP BY** orderdetails.productCode

# 4 . 1 Left-Join #3

productCode	productName
S10_1678	1969 Harley Davidson Ultimate Chopper
S10_1949	1952 Alpine Renault 1300
S10_2016	1996 Moto Guzzi 1100i
S10_4698	2003 Harley-Davidson Eagle Drag Bike
S10_4757	1972 Alfa Romeo GTA
S10_4962	1962 LanciaA Delta 16V
S12_1099	1968 Ford Mustang
S12_1108	2001 Ferrari Enzo
S12_1666	1958 Setra Bus
S12_2823	2002 Suzuki XREO
S12_3148	1969 Corvair Monza
S12_3380	1968 Dodge Charger
S12_3891	1969 Ford Falcon
S12_3990	1970 Plymouth Hemi Cuda
S12_4473	1957 Chevy Pickup
S12_4675	1969 Dodge Charger

**SELECT**

products.productCode,  
products.productName  
products

**FROM**

# 4 . 1 Left-Join #3

```
SELECT      orderdetails.productCode,  
           products.productName,  
           COUNT(orderdetails.orderNumber) AS 'Number of Orders'  
FROM        orderdetails  
  
LEFT JOIN   products  
  
ON          orderdetails.productCode = products.productCode  
  
GROUP BY    orderdetails.productCode  
ORDER BY    `Number of Orders` DESC
```

# 4 . 1 Left-Join #3

productCode	productName	Number of Orders
S18_3235	1992 Ferrari 360 Spider red	53
S18_2949	1913 Ford Model T Speedster	28
S24_3816	1940 Ford Delivery Van	28
S32_4289	1928 Ford Phaeton Deluxe	28
S32_1374	1997 BMW F650 ST	28
S18_2057	1934 Ford V8 Coupe	28
S24_1444	1970 Dodge Coronet	28
S50_1341	1930 Buick Marquette Phaeton	28
S18_3136	18th Century Vintage Horse Carriage	28
S24_2840	1958 Chevy Corvette Limited Edition	28
S700_1691	American Airlines: B767-300	28
S18_3320	1917 Maxwell Touring Car	28
S700_2047	HMS Bounty	28
S18_4600	1940s Ford truck	28
S32_2509	1954 Greyhound Scenicruiser	28
S700_2466	America West Airlines B757-200	28
S18_2325	1932 Model A Ford J-Coupe	28
S18_4668	1939 Cadillac Limousine	28
S700_2834	ATA: B757-300	28
S18_2795	1928 Mercedes-Benz SSK	28
S24_2300	1962 Volkswagen Microbus	28
S50_1392	Diamond T620 Semi Skinned Tanker	28

orderdetails

products

# 5 . Export

# 5 . 1 Excel

phpMyAdmin

Server: localhost » Database: data\_lab » Table: products

Browse Structure SQL Search Insert Export Import Operations Triggers

productCode	productName	Number of Orders
S18_3232	1992 Ferrari 360 Spider red	53
S18_2325	1932 Model A Ford J-Coupe	28
S18_4668	1939 Cadillac Limousine	28
S700_2834	ATA: B757-300	28
S18_2795	1928 Mercedes-Benz SSK	28
S24_2300	1962 Volkswagen Microbus	28
S50_1392	Diamond T620 Semi-Skirted Tanker	28
S700_3167	F/A 18 Hornet 1/72	28
S24_1937	1939 Chevrolet Deluxe Coupe	28
S24_4258	1936 Chrysler Airflow	28
S18_1662	1980s Black Hawk Helicopter	28
S700_4002	American Airlines: MD-11S	28
S24_2022	1938 Cadillac V-16 Presidential Limousine	28
S32_1268	1980's GM Manhattan Express	28
S10_4757	1972 Alfa Romeo GTA	28
S18_2581	P-51-D Mustang	28
S72_1253	Boeing X-32A JSF	28
S18_1342	1937 Lincoln Berline	28
S32_3522	1996 Peterbilt 379 Stake Bed with Outrigger	28
S18_3029	1999 Yamaha Speed Boat	28
S10_1678	1969 Harley Davidson Ultima Copper	28
S18_1367	1936 Mercedes-Benz 500K Special Roadster	28
S700_2824	1982 Camaro Z28	28
S18_3856	1941 Chevrolet Special De Cabriolet	28
S10_2016	1996 Moto Guzzi 1100i	28

1 > >> Number of rows: 25 Filter rows: Search this table

Query results operations

Print Copy to clipboard Export Display chart Create view

Console



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# 5.1 Excel

phpMyAdmin

Server: localhost » Database: data\_lab » Table: orderdetails

Browse Structure SQL Search Insert Export Import Operations Triggers

Recent Favorites

data\_lab  
New  
customers  
employees  
offices  
orderdetails  
orders  
payments  
productlines  
products  
information\_schema

Exporting rows from "orderdetails" table

**Export method:**

Quick - display only the minimal options  
 Custom - display all possible options

**Format:**

CodeGen  
CodeGen  
CSV  
CSV for MS Excel  
JSON  
LaTeX  
MediaWiki Table  
Microsoft Word 2000  
OpenDocument Spreadsheet  
OpenDocument Text  
PDF  
PHP array  
Texy! text  
XML  
YAML

2996  
0

Go

Console



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# 5 . 1 Excel

A	B	C	D	E	F	G	H	I	J	K
1	productCode	productName	Number of Orders							
2	S18_3232	1992 Ferrari 360 Spider red	53							
3	S18_2949	1913 Ford Model T Speedster	28							
4	S24_3816	1940 Ford Delivery Sedan	28							
5	S32_4289	1928 Ford Phaeton Deluxe	28							
6	S32_1374	1997 BMW F650 ST	28							
7	S18_2957	1934 Ford V8 Coupe	28							
8	S24_1444	1970 Dodge Coronet	28							
9	S50_1341	1930 Buick Marquette Phaeton	28							
10	S18_3136	18th Century Vintage Horse Carriage	28							
11	S24_2840	1958 Chevy Corvette Limited Edition	28							
12	S700_1691	American Airlines: B767-300	28							
13	S18_3320	1917 Maxwell Touring Car	28							
14	S700_2047	HMS Bounty	28							
15	S18_4600	1940s Ford truck	28							
16	S32_2509	1954 Greyhound Scenicruiser	28							
17	S700_2466	America West Airlines B757-200	28							
18	S18_2325	1932 Model A Ford J-Coupe	28							
19	S18_4668	1939 Cadillac Limousine	28							
20	S700_2834	ATA: B757-300	28							
21	S18_2795	1928 Mercedes-Benz SSK	28							
22	S24_2300	1962 Volkswagen Microbus	28							
23	S50_1392	Diamond T620 Semi-Skirted Tanker	28							
24	S700_3167	F/A 18 Hornet 1/72	28							
25	S24_1937	1939 Chevrolet Deluxe Coupe	28							
26	S24_4258	1936 Chrysler Airflow	28							
27	S18_1662	1980s Black Hawk Helicopter	28							
28	S700_4002	American Airlines MD-11C	28							

# 5.2 SQL (Back up)

The screenshot shows the phpMyAdmin interface for the 'customers' table in the 'data\_lab' database. A context menu is open over the table name, listing various export formats: CodeGen, CSV, CSV for MS Excel, JSON, LaTeX, MediaWiki Table, Microsoft Word 2000, OpenDocument Spreadsheet, OpenDocument Text, PDF, PHP array, SQL (which is highlighted with a purple arrow), Texy! text, XML, and YAML. Below the menu, there are sections for 'Rows:' and 'Operations'.

**Rows:**

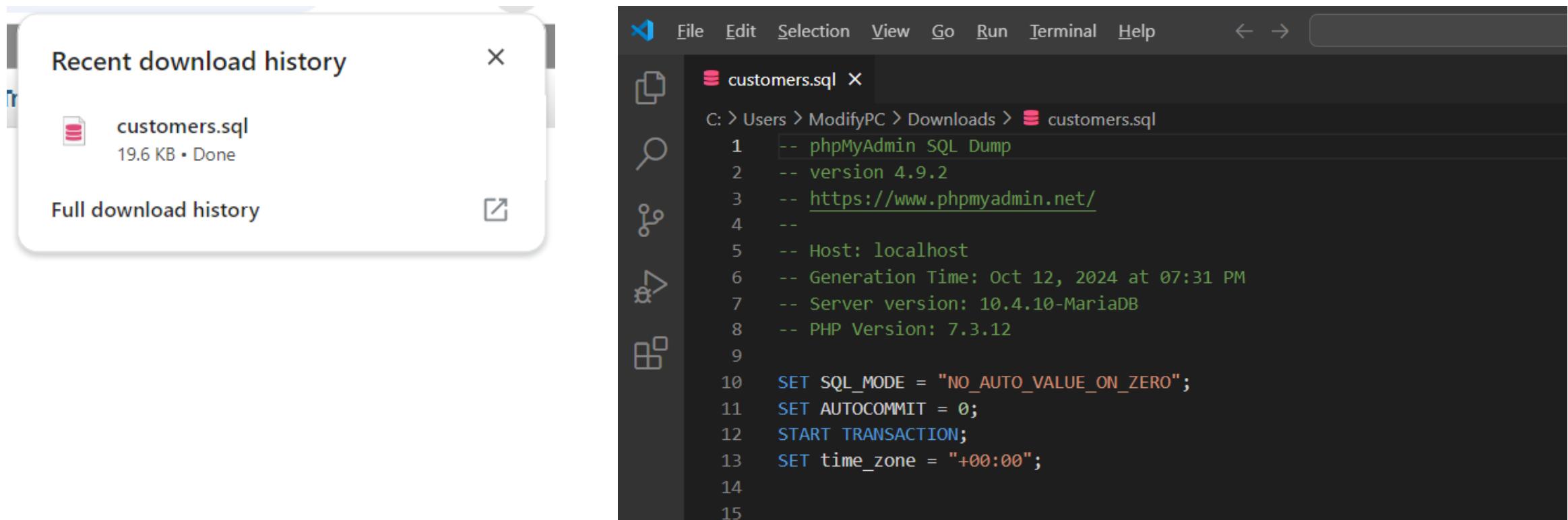
- Dump some row(s)  
Number of rows:   
Row to begin at:
- Dump all rows

**Operations:**

- SQL
- Search
- Insert
- Export
- Import
- Operations

At the bottom left is a 'Go' button, and at the bottom center is the page number '- 77/79 -'.

# 5.2 SQL (Back up)



The image shows two windows side-by-side. On the left is a file manager window titled 'Recent download history' containing a single item: 'customers.sql' (19.6 KB, Done). On the right is a code editor window titled 'customers.sql' showing the contents of a MySQL dump file. The code editor has a dark theme with icons on the left.

```
-- phpMyAdmin SQL Dump
-- version 4.9.2
-- https://www.phpmyadmin.net/
--
-- Host: localhost
-- Generation Time: Oct 12, 2024 at 07:31 PM
-- Server version: 10.4.10-MariaDB
-- PHP Version: 7.3.12

SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
SET AUTOCOMMIT = 0;
START TRANSACTION;
SET time_zone = "+00:00";


```

