## **BASIC DATABASE – PRACTICAL SESSION 1**

### I. Setup enviroment 1. Install MySQL

The traditional way to install MySQL is to use the official installer provided at <u>https://dev.mysql.com/downloads/installer/</u>. However, if you want to get phpMyAdmin also (one of the most famous tools for administration of MySQL), you should instead use some software bundles like <u>XAMPP</u>. You may be pleased to know that XAMPP supports 3 common OSs (Windows, Ubuntu, MacOS). When using XAMPP, to manage services, let run the file xampp-control.exe in Windows, then make sure that the service MySQL is running like the below figure. To invoke phpMyAdmin, let click the button Admin, then you will be navigated to the address <u>http://localhost/phpmyadmin/</u>.



### 2. Connect to MySQL

MySQL is in fact a server side software which expose its services via a TCP-IP connections. For each session working with MySQL, you have to provide host name (or IP), port (the default is 3306), username, and password.

There are multiple existing tools to connect to MySQL: command-line tool, phpMyAdmin, MySQL Workbench, Visual Studio Code with plugin.

#### **Command-line client**

Mysql is a command-line client program that allows you to interact with MySQL in the interactive and non-interactive mode. The mysql command-line client is typically located in the bin directory of the MySQL's installation folder. To invoke the mysql program, you just simply navigate to the bin directory of the MySQL's installation folder and type:

mysql

To connect to the MySQL Server, you use this command:

```
shell>mysql -u root -p
```

If everything is OK, you will connect to the MySQL Server with the following command:

mysql>

You can now run SQL statement by typing it and press enter. For example, to display the databases, run:

```
mysql> show databases;
```

#### **Graphical tools**

A more convenient way to work with MySQL server is to use graphical client tools. For example, to connect to server with MySQL Workbench:

- Click "MySQL Connections" to go to the screeen "Setup New Connection"



- Enter the name of the new connection (to be displayed in the first screen), the connection information (ip, port, username, password). Click "Test Connection" to check if the connection works well, then click OK to save the new connection.

Setup New Conn	ection	- 🗆 X				
Connection Name: Connection Method:	my localhost Standard (TCP/IP)	Type a name for the connection 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 Vault Clear	The user's password. Will be requested later if it's not set.				
Default Schema:		The schema to use as default schema. Leave blank to select it later.				
Configure Server	Management	Test Connection Cancel OK				

- From the Home screen, click the connection you defined in the previous step



- Once connected, you work with the server by writing SQL statements, in the query

panel. To run a single statement, just select it, and press "Ctrl + Enter" or click  $\swarrow$  button on the tool box.

my localhost - Warning - not suppo.x my localhost (northwind) - Wa_x										
File Edit View Query Database Server Tools Scripting Help										
5 \$ 6 5 5 5 6 8 5	0									
Navigator										
SCHEMAS 🕸 🛅 🚽 🖉 🕵 💿 🚱 💿 😒 🔯 Hint to 1000 rows 🔹 🙀 🍕 🔍 🔺 🕨 🔯 🖧	imp to									
Q Filter objects										
V northwind A 2 • SELECT * FROM customens Automatic cont	text help is									
Tables disabled. Use th	e toolbar t									
▶ customers < manually get h	elp for the									
employees	ostic holp									
▶ Inventory_transactio ✓ id company last_name first_name emai_address job_tite toggle autom	auc neip.									
Company A Bedecs Anna 1000 Owner Grid										
Administration Schemas 2 Company B Gratacos Solsona Antonio Water Owner										
Information J Company C Axen I nomas Purchasing K										
No object selected customers 2 x Apply Revert Context Help Snippets										
Output	Output									
Action Output										
# Time Action Message Dura	ation / Fetch									
1 23:29:19 SELECT * FROM customers LIMIT 0, 1000 Error Code: 1046. No database selected Select the 0.00	.0 sec									
<ul> <li>2 23:29:41 USE northwind</li> <li>0 row(s) affected</li> <li>0.00</li> </ul>	.0 sec									
3 23:29:41 SELECT * FROM customers LIMIT 0, 1000 29 row(s) returned 0.00	0 sec / 0.000 sec									
4 23:31:46 SELECT * FROM customers LIMIT 0, 1000 29 row(s) returned 0.00	0 sec / 0.000 sec									
Object Info Session										

# II. Getting started with SQL statements

- 1. Write a SQL statement to create a new database name "Company".
- 2. Write a SQL statement to create to set the default working database to "Company".
- 3. Write SQL statements to define tables of "Company" databases with contraints and columns illustrated by igures below. You should determine appropriate datatype for each column.

EMPLOYE	EE											
Fname	Minit	Lname	<u>Ssn</u>	Bdate	Address	Sex	Salary	Super_ssn	Dno			
Dname	Dname Dnumber Mgr_ssn Mgr_start_date											
DEPT_LOCATIONS           Dnumber         Dlocation												
PROJECT												
Pname Pnumber Plocation Dnum												
WORKS_ON												
DEPENDENT												
Essn	Depend	lent_name	Sex	Bdate	Relations	ship						

- Add column Partner\_ssn to the table EMPLOYEE. This column indicates the SSN of spouse of each employee. For those who are now single, the value should be NULL.
- 5. Write SQL statements to insert sample rows to these tables.
- 6. Write SQL statements to delete the tables you created.