

By Completing this practical sheet, you will learn

1. How to install and configure a database server
2. How to install, configure, and use a DBMS
3. How to create databases and tables in the DB server, using the DBMS.

## Section 1: Install and configure a database server

**NOTE:** We will be using MySQL DB server

You have 2 options to use MySQL DB server

1. Download MySQL server from the official site and install.  
**NOTE:** You have to install a DBMS like phpMyAdmin or MySQL Workbench separately.
2. Download and install XAMPP, which includes the MySQL server with XAMPP control panel to start/stop the server, and also the phpMyAdmin DBMS.  
**NOTE:** XAMPP has some more servers and tools other than MySQL server.

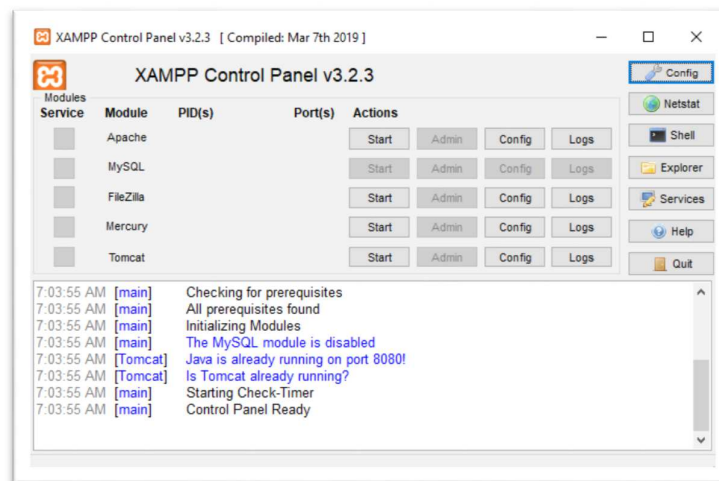
Let's use the XAMP tool.

### Step 1.1: Download and install XAMPP

- Download from <https://www.apachefriends.org/index.html>
- Install into a known location

### Step 1.2: Start/stop the MySQL server

- Open the XAMPP control panel from Start menu.



- Start MySQL server using the start button in front of the MySQL label

**Q:** What is the port of the MySQL server?

**Q:** How can we change the port?

## Section 2: Install a DBMS

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MySQL has two main DBMSs, the phpMyAdmin and MySQL Workbench. phpMyAdmin is already installed with XAMPP. Let's learn how to use both of them.

### Step 2.1 Use the phpMyAdmin as DBMS

XAMPP contains the phpMyAdmin.

**NOTE:** phpMyAdmin is a web application developed using PHP and needs the Apache web server to run.

Start the Apache web server from the XAMPP control panel.

**Q:** What is the port of the Apache webserver?

**Q:** How to change the Apache's port? (refer the link below)

<https://alexjustesen.com/2018/07/30/how-to-change-your-apache-listen-port-number-in-xampp/>

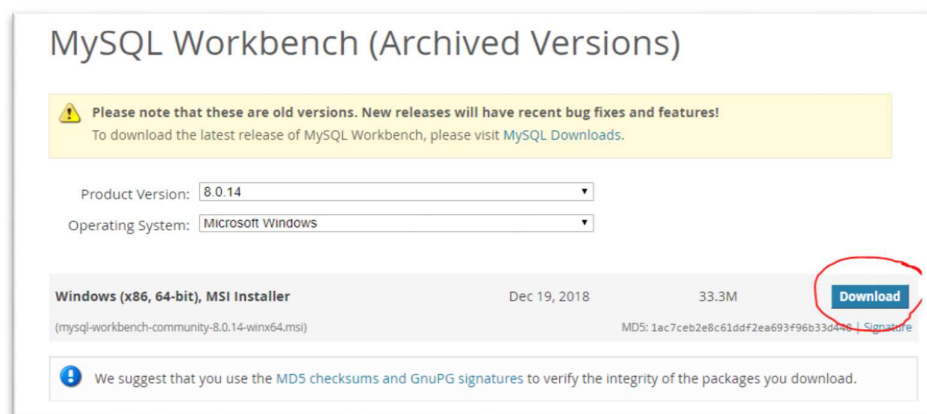
**Q:** Why do you have to change the web server port?

To launch the phpMyAdmin, click the Admin button in front of the MySQL label.

### Step 2.2: Use the MySQL Workbench as DBMS

Download from <https://downloads.mysql.com/archives/workbench/>

Install into your PC.



Open the MySQL Workbench from the start menu.

To connect to the MySQL server, first a connection should be created.

Click on the plus button in the MySQL Connections feature on the home page of the workbench.

Then fill the details of your MySQL database server in.

**Setup New Connection**

Connection Name:  Type a name for the connection

Connection Method:  Method to use to connect to the RDBMS

Parameters

Hostname:  Port:  Name or IP address of the server host - and TCP/IP port.

Username:  Name of the user to connect with.

Password:   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.

**Q:** Can we use any name for the Connection Name?

**Q:** Why do we use 127.0.0.1 for the Hostname?

**Q:** From where the value for the Port comes?

Click the Test Connection button and make sure the connection is working.

If everything is fine, click the OK button to confirm.

Then click the newly created connection button on the home page to connect to the server.

**Q:** Can we use both phpMyAdmin and MySQL workbench to connect to same DB server and modify same DB?

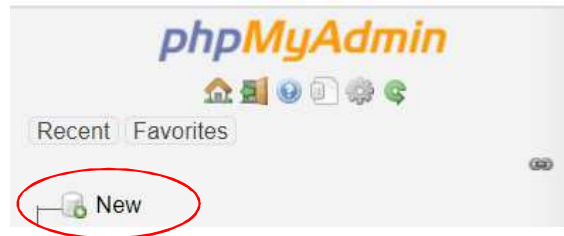
## Section 3: Create database and tables

Let's use phpMyAdmin for this.

**Q:** Can we see the changes we do in the DB server using phpMyAdmin, via the MySQL Workbench?

### Step 3.1 Create a database

Click the new button from the left sidebar to create a new DB.



Provide a name for the DB and click the Create button.  
You should be able to see the new DB on the left side bar.

**Q:** Why do we need a new DB?

**Q:** Can we create tables without a DB?

Select the new DB from the left side bar.

### Step 3.2 Create table(s)

Go to the Create table feature, provide a name and number of columns, and click the Go button to create a new table.

**Create table**

Name: 
Number of columns:

Create the table below named **items**.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	
1	itemID	int(11)			No	None		AUTO_INCREMENT	
2	itemCode	varchar(10)	latin1_swedish_ci		No	None			
3	itemName	varchar(30)	latin1_swedish_ci		No	None			
4	itemPrice	decimal(5,2)			No	None			
5	itemDesc	varchar(200)	latin1_swedish_ci		No	None			

**NOTE:** The *itemID* is the primary key, and it an auto increment field.

**NOTE:** note the data types of the columns.

**NOTE:** Connect to the server from MySQL Workbench and observe the changes in the server.

End of the practical