



Clase 15. Programación Backend

SQL



OBJETIVOS DE LA CLASE

- Comprender el concepto de base de datos
- Instalar y configurar un servidor de base de datos SQL.
- Realizar CRUD hacia la base de datos mediante clientes GUI y CLI

CRONOGRAMA DEL CURSO

Clase 14



**Webpack: Module
Bundler**

Clase 15



SQL

Clase 16



SQL y Node.js

Servidor de Base de Datos SQL



CODER HOUSE



¿Qué es una base de datos?



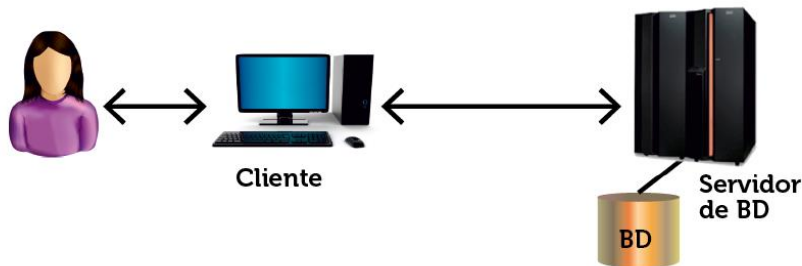
- La base de datos es un **repositorio persistente** que nos permite **almacenar** gran número de **información** de una **forma organizada** para su futura consulta, realización de búsquedas, nuevo ingreso de datos y muchas otras operaciones.
- Un **servidor de base de datos** es un **contenedor** que puede alojar un gran número de bases de datos y ofrece los servicios para conectarlas a los clientes.
- Mediante los **clientes** podemos interactuar con las bases de datos y estos pueden estar implementados en modo consola, en modo aplicación gráfica o desde nuestra aplicación de servidor.

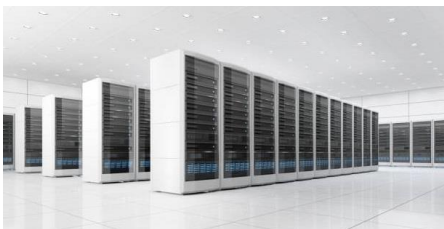


Cientes de base de datos

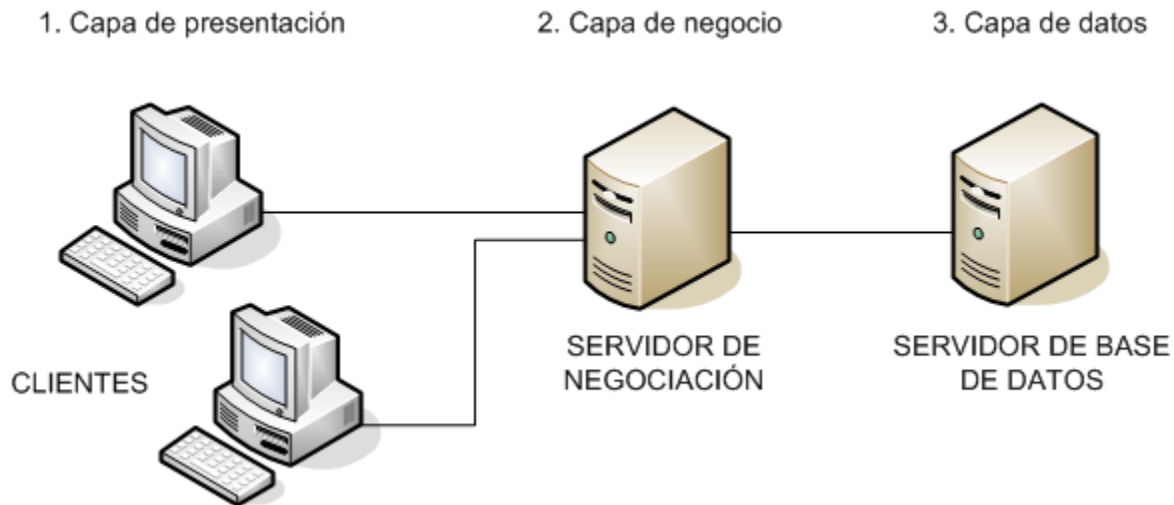


- La arquitectura **cliente-servidor** es un modelo de diseño de software en el que las tareas se reparten entre los proveedores de recursos o servicios, llamados servidores, y los demandantes, llamados clientes
- **Un cliente** realiza peticiones a otro programa, el servidor, quien le da respuesta
- **Un cliente de base de datos** se conecta e interactúa con el servidor de base de datos





Modelo Cliente Servidor



Tipos de clientes de base de datos



Cliente CLI (*Command Line Interface*): Es un cliente que interactúa con la base de datos **mediante** el uso de una **consola**.

```
MySQL 5.6 Command Line Client
r - Advanced Edition (Commercial)
Copyright (c) 2000, 2014, Oracle and/or its affiliates. All rights reserved.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> use dvd_collection;
Database changed
mysql> SELECT * FROM movies;
+-----+-----+-----+
| movie_id | title                                | release_date |
+-----+-----+-----+
| 1 | Gone with the Wind                   | 1939-04-17   |
| 2 | The Hound of the Baskervilles       | 1939-03-31   |
| 3 | The Matrix                          | 1999-06-11   |
| 4 | Above the Law                       | 1988-04-08   |
| 5 | Iron Man 2                          | 2010-05-07   |
+-----+-----+-----+
5 rows in set (0.00 sec)

mysql>
```


Tipos de clientes de base de datos



Cliente GUI (*graphical user interface*): Es un cliente que interactúa con la base de datos **mediante** el uso de una **aplicación gráfica**.

The screenshot shows the MySQL Workbench interface with the title bar 'sakila_full.mwb* - MySQL Workbench'. The left sidebar contains 'MANAGEMENT' (Server Status, Client Connections, Users and Privileges, Status and System Variables, Data Export, Data Import/Restore) and 'INSTANCE' (Startup / Shutdown, Server Logs, Options File). The 'SCHEMAS' section shows a tree view with 'sakila' expanded, containing 'Tables' (actor, address, category, city, country, customer, film, film_actor, film_category, inventory, payment, rental, staff, store, supplier, vendor) and 'Object Info' (Table: film, Columns:). The main area displays a query in the 'Query 1 x' tab:

```
1 SELECT `actor`.`actor_id`,
2       `actor`.`first_name`,
3       `actor`.`last_name`,
4       `actor`.`last_update`
5 FROM `sakila`.`actor`
6
7 SELECT `film`.`film_id`,
8       `film`.`title`,
9       `film`.`description`,
10      `film`.`release_year`,
11      `film`.`language_id`,
12      `film`.`original_language_id`,
13      `film`.`rental_duration`,
14      `film`.`rental_rate`,
15      `film`.`length`,
16      `film`.`replacement_cost`,
17      `film`.`rating`
```

Below the query, the 'Result Set Filter' is empty. The results are displayed in a table with columns: #, film_id, title, description. The data shows the first four rows of the film table:

#	film_id	title	description
1	1	ACADEMY DINOSAUR	A Epic Drama of a Feminist And a Mad Scientist who must Battle a Teacher in The Canadian Rockies
2	2	ACE GOLDFINGER	A Astounding Epistle of a Database Administrator And a Explorer who must Find a Car in Ancient China
3	3	ADAPTATION HOLES	A Astounding Reflection of a Lumberjack And a Car who must Sink a Lumberjack in A Baloon Factory
4	4	AFFAIR PREJUDICE	A Fanciful Documentary of a Frisbee And a Lumberjack who must Chase a Monkey in A Shark Tank

At the bottom, the 'Object Info' tab shows 'Table: film' and 'Columns:'. The 'Query Completed' message is visible at the bottom left. On the right, the 'Context Help' pane shows a list of SQL keywords and functions, including SELECT, DISTINCT, GROUP BY, ORDER BY, LIMIT, and others.

Tipos de clientes de base de datos



Cliente Web : Es un cliente que interactúa con la base de datos a través de una página web **mediante** el uso de un **navegador**

The screenshot shows the phpMyAdmin interface in a web browser. The left sidebar displays a tree view of databases, including 'ejercicios', 'information_schema', 'mibasemartes', 'mibasemartes2', 'mysql', 'performance_schema', 'phpmyadmin', and 'test'. The main panel shows the 'Base de datos: ejercicios' structure. A table list is displayed with columns: Tabla, Acción, Filas, Tipo, Cotejamiento, Tamaño, and Residuo a depurar. The tables listed are 'departamento', 'empleado', and 'orden_sueldos'. Below the table list, there is a 'Crear tabla' section with input fields for 'Nombre:' and 'Número de columnas: 4', and a 'Continuar' button.

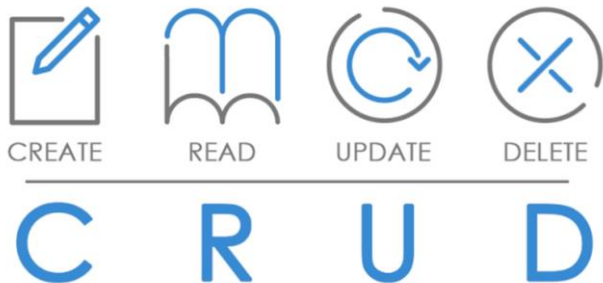
Tabla	Acción	Filas	Tipo	Cotejamiento	Tamaño	Residuo a depurar
<input type="checkbox"/> departamento		12	InnoDB	utf8mb4_general_ci	16.0 KB	-
<input type="checkbox"/> empleado		25	InnoDB	utf8mb4_general_ci	16.0 KB	-
<input type="checkbox"/> orden_sueldos		-				
3 tablas	Número de filas	-37	InnoDB	utf8mb4_general_ci	32.0 KB	0 B

Tipos de clientes de base de datos



Cliente de aplicación: Es un cliente que está implementado **dentro** de nuestra **aplicación** de **backend** y sirve para que nuestro programa se conecte e interactúe con la base de datos.

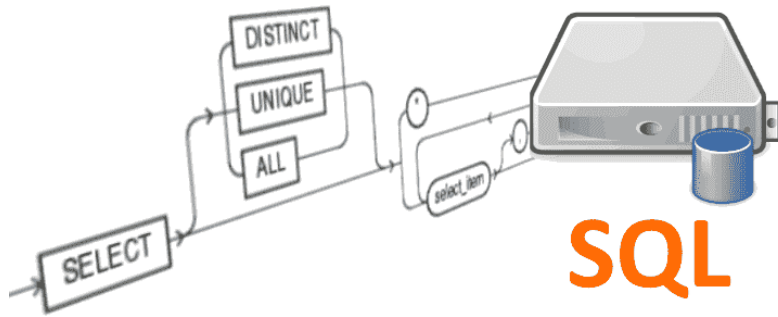
```
index.js  x
1  'use strict' // modo estricto para evitar sintaxis incorrecta
2
3  var mongoose = require('mongoose')
4
5  mongoose.connect('mongodb://localhost:27017/dbTutorial', { useNewUrlParser: true }, (err, db) => {
6    if (err) throw err
7    console.log("conexión establecida a la base de datos " + db.name)
8    db.close()
9  })
```



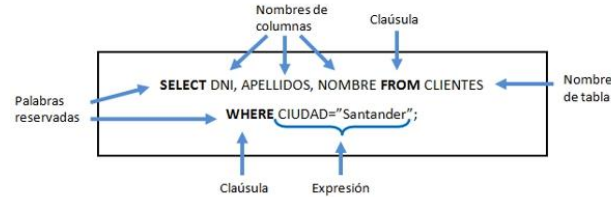
¿Qué es **CRUD**?



- En informática, **CRUD** es el acrónimo de "Crear, Leer, Actualizar y Borrar" (del original en inglés: *Create, Read, Update and Delete*), que se usa para referirse a las funciones básicas en bases de datos o la capa de persistencia en un software
- CRUD resume las **tareas** requeridas por un usuario **para crear y gestionar datos**, ya sea para el manejo de bases de datos o para el uso de aplicaciones.



¿Qué es SQL?



- La sigla que se conoce como **SQL** corresponde a la expresión inglesa **Structured Query Language** (en español “Lenguaje de Consulta Estructurado”)
- SQL es un **tipo de lenguaje** vinculado con la **gestión de bases de datos de carácter relacional**, que permite la especificación de distintas clases de operaciones entre éstas.
- Gracias a la utilización del álgebra y de cálculos relacionales, el SQL brinda la **posibilidad de realizar consultas** con el objetivo de recuperar información de las bases de datos de manera sencilla

¿Qué podemos hacer con SQL?



MYSQL Y MARIADB

Comandos SQL: Documentación MariaDB

<https://mariadb.com/kb/es/comandos-sql/>

The screenshot shows a web browser window displaying the MariaDB Knowledge Base page for SQL Commands in Spanish. The page has a clean, modern design with a white background and blue accents. The MariaDB logo is prominently displayed at the top left. A navigation bar at the top right contains links for Knowledge Base, Contact, Login, and Search. Below the logo, a breadcrumb trail indicates the current location: Knowledge Base » MariaDB - Spanish » Usando MariaDB » Comandos SQL. On the left side, there is a sidebar with a list of links: Inicio, Open Questions, MariaDB Server, MariaDB MaxScale, MariaDB ColumnStore, and Connectors. Below these links is a section for asking questions, with a button labeled 'Ask a question here' and a note that there are 1 question. The main content area is titled 'Comandos SQL' and lists various SQL commands: ALTER, CREATE, INSERT, LOAD, SHOW, and etc... Each command is accompanied by a small icon and a brief description. The commands listed are: Comando HELP, Comandos SQL Básicos, CREATE USER, DROP USER, SHOW DATABASES, and START TRANSACTION. On the right side, there is a sidebar with a list of links for 'Usando MariaDB', including: Comandos SQL, Funciones y Operadores, Sentencias Programadas y Compuestas, SQL Estructura y Comandos, Tipos de Datos, Columnas Dinámicas, Conectarse al servidor MariaDB desde un terminal linux, CONNECT Table Types - MySQL Table Type: Accessing MySQL/MariaDB Tables, and a link to 'Ask a question here'.

Comandos SQL - MariaDB Knowl x +

mariadb.com/kb/es/comandos-sql/

Knowledge Base Contact Login Search

PRODUCTS SERVICES PRICING RESOURCES ABOUT US DOWNLOAD

Knowledge Base » MariaDB - Spanish » Usando MariaDB » Comandos SQL

Inicio

Open Questions

MariaDB Server

MariaDB MaxScale

MariaDB ColumnStore

Connectors

Ask a question here

View 1 questions

Localized Versions

SQL Statements [en]

Comandos SQL

ALTER, CREATE, INSERT, LOAD, SHOW, y etc...

Comando HELP
Sintaxis `HELP palabra_buscada` Description El comando HELP puede ser utiliza...

Comandos SQL Básicos
Definiendo cómo es almacenada la información. `CREATE DATABASE` se utiliza pa...

CREATE USER
Sintaxis `CREATE [OR REPLACE] USER [IF NOT EXISTS] user_specification [,user_specification`

DROP USER
Sintaxis `DROP USER [IF EXISTS] user [, user] ...` Descripción La instrucción...

SHOW DATABASES
Syntax `SHOW [DATABASES | SCHEMAS] [LIKE 'pattern' | WHERE expr] Descrip...`

START TRANSACTION
Syntax `START TRANSACTION [transaction_property [, transaction_property] ...] | BEGIN [WORK]`

There are 1 related questions.

↑ Usando MariaDB ↑

Comandos SQL

- Funciones y Operadores
- Sentencias Programadas y Compuestas
- SQL Estructura y Comandos
- Tipos de Datos
- Columnas Dinámicas
- Conectarse al servidor MariaDB desde un terminal linux
- CONNECT Table Types - MySQL Table Type: Accessing MySQL/MariaDB Tables

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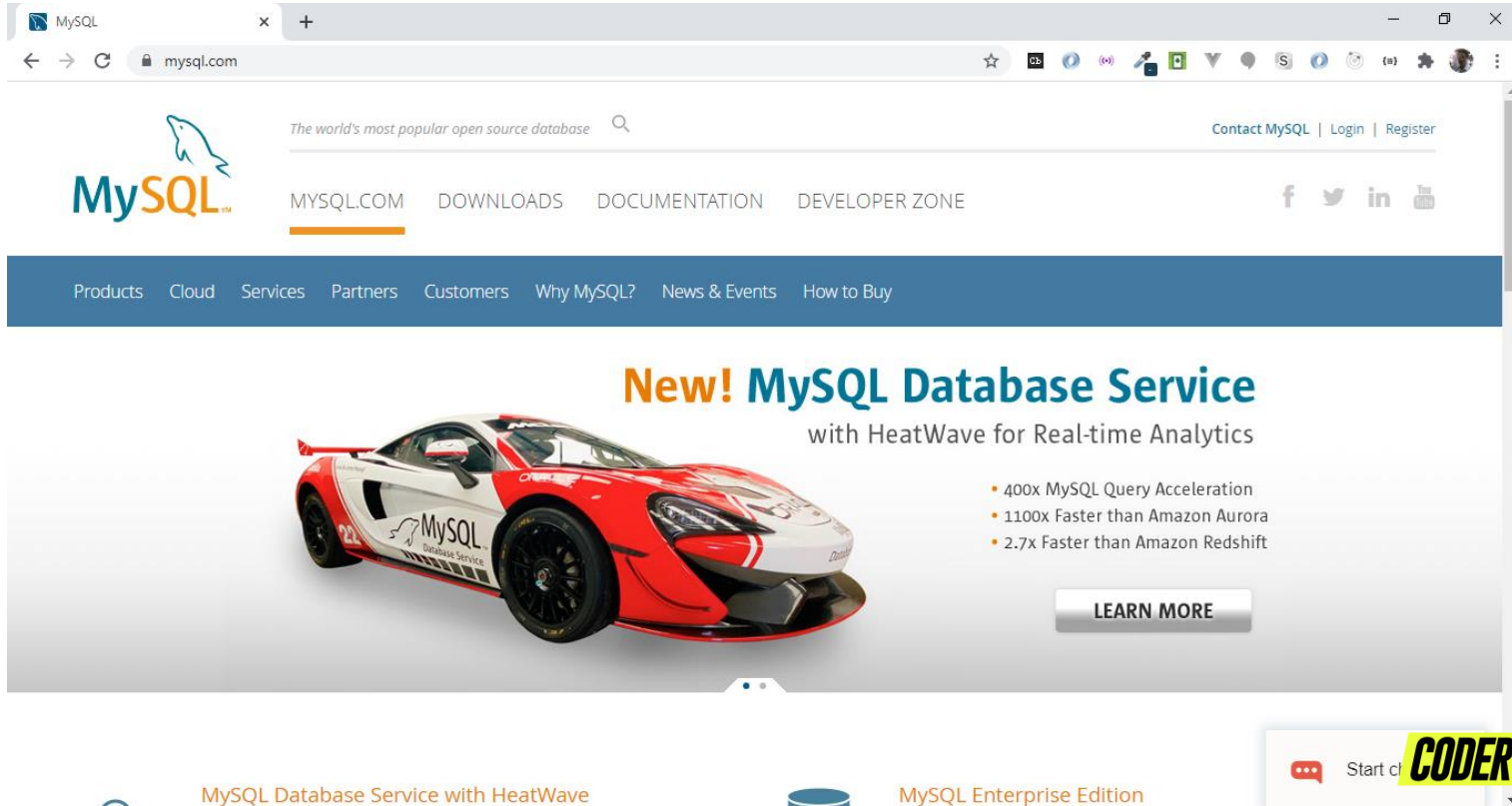
MySQL y MariaDB



- **MySQL** es un sistema de gestión de bases de datos relacional desarrollado bajo licencia dual: Licencia pública general/Licencia comercial por Oracle Corporation y está considerada como la **base de datos de código abierto más popular del mundo**.
- **MariaDB** es un **sistema de gestión de bases de datos** derivado de MySQL con licencia GPL (General Public License).
- **MySQL y MariaDB** son **compatibles** entre sí a nivel funcional.

MySQL: Web Oficial

<https://www.mysql.com/>



The screenshot shows the MySQL website homepage. At the top, there's a navigation bar with the MySQL logo, a search bar, and links for 'Contact MySQL', 'Login', and 'Register'. Below this is a main navigation menu with links for 'MySQL.COM', 'DOWNLOADS', 'DOCUMENTATION', and 'DEVELOPER ZONE'. A secondary navigation bar contains links for 'Products', 'Cloud', 'Services', 'Partners', 'Customers', 'Why MySQL?', 'News & Events', and 'How to Buy'. The main content area features a large banner for 'New! MySQL Database Service with HeatWave for Real-time Analytics'. The banner includes a red and white sports car with 'MySQL Database Service' branding. To the right of the car, there's a list of performance benefits: '400x MySQL Query Acceleration', '1100x Faster than Amazon Aurora', and '2.7x Faster than Amazon Redshift'. A 'LEARN MORE' button is positioned below the list. At the bottom of the page, there are two logos: 'MySQL Database Service with HeatWave' and 'MySQL Enterprise Edition'. In the bottom right corner, there's a chat bubble with the text 'Start ch' and a yellow banner with the text 'CODER HOUSE'.

MySQL

The world's most popular open source database

Contact MySQL | Login | Register

MySQL.COM DOWNLOADS DOCUMENTATION DEVELOPER ZONE

f t in

Products Cloud Services Partners Customers Why MySQL? News & Events How to Buy

New! MySQL Database Service

with HeatWave for Real-time Analytics

- 400x MySQL Query Acceleration
- 1100x Faster than Amazon Aurora
- 2.7x Faster than Amazon Redshift

LEARN MORE

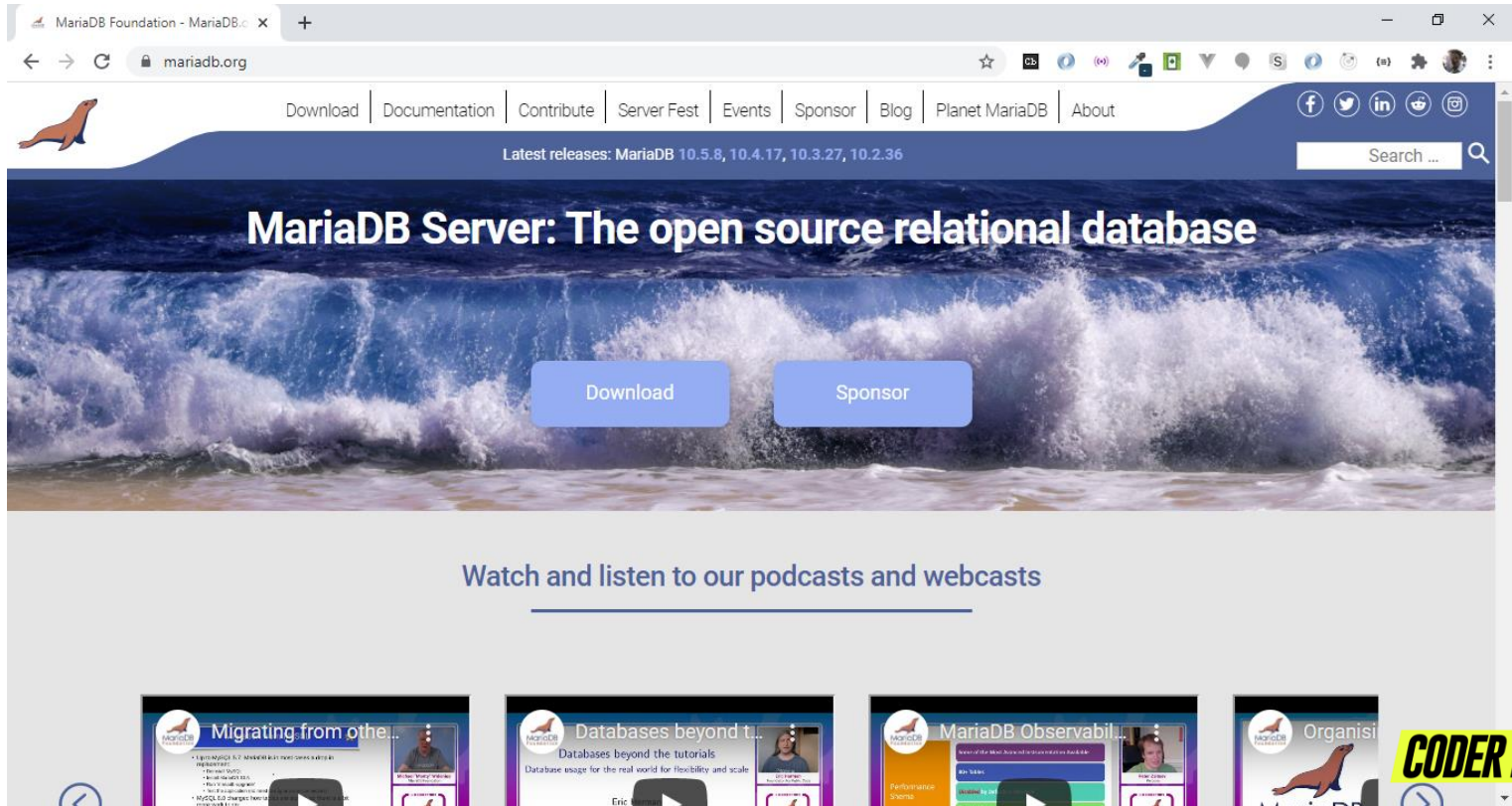
MySQL Database Service with HeatWave

MySQL Enterprise Edition

Start ch **CODER HOUSE**

MariaDB: Web Oficial

<https://mariadb.org/>



The screenshot shows the official MariaDB website in a web browser. The browser's address bar displays 'mariadb.org'. The website's navigation bar includes links for 'Download', 'Documentation', 'Contribute', 'Server Fest', 'Events', 'Sponsor', 'Blog', 'Planet MariaDB', and 'About'. A search bar is located on the right side of the navigation bar. The main header features the MariaDB logo (a red seal) and the text 'Latest releases: MariaDB 10.5.8, 10.4.17, 10.3.27, 10.2.36'. The main content area has a large background image of a blue ocean wave with the text 'MariaDB Server: The open source relational database' overlaid. Below this text are two blue buttons labeled 'Download' and 'Sponsor'. Further down, there is a section titled 'Watch and listen to our podcasts and webcasts' with a horizontal line underneath. At the bottom of the page, there are four video thumbnails: 'Migrating from other...', 'Databases beyond the tutorials', 'MariaDB Observability', and 'Organising...'. The 'CODER HOUSE' logo is visible in the bottom right corner.

MariaDB Foundation - MariaDB.org

mariadb.org

Download | Documentation | Contribute | Server Fest | Events | Sponsor | Blog | Planet MariaDB | About

Latest releases: MariaDB 10.5.8, 10.4.17, 10.3.27, 10.2.36

Search ...

MariaDB Server: The open source relational database

Download Sponsor

Watch and listen to our podcasts and webcasts

Migrating from other... Databases beyond the tutorials MariaDB Observability Organising...

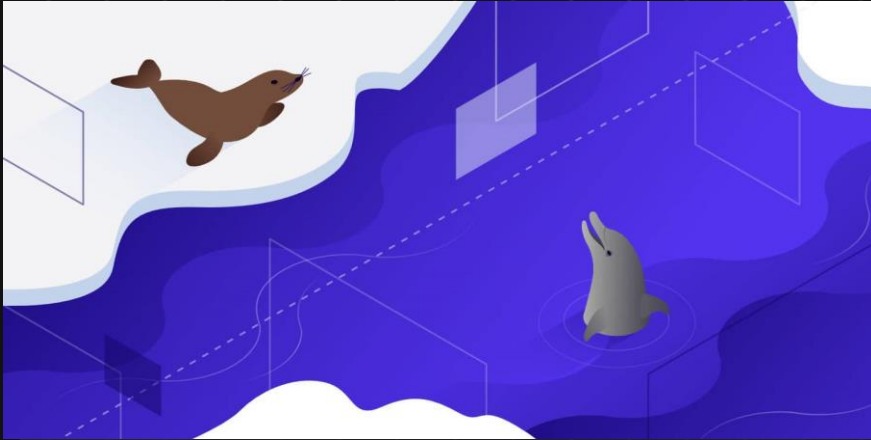
CODER HOUSE



BREAK

¡5/10 MINUTOS Y VOLVEMOS!

Instalación del Servidor y Cliente de base de datos MySQL / MariaDB



Servidor MariaDB > XAMPP: Web oficial

<https://www.apachefriends.org/es/>



The screenshot shows the official XAMPP website in Spanish. The browser's address bar displays 'apachefriends.org/es/index.html'. The website has a dark blue header with the 'Apache Friends' logo and a navigation menu including 'Descargar', 'Complementos', 'Alojamiento', 'Comunidad', and 'Acerca de'. A search bar is also present. The main content area features the XAMPP logo and the text 'XAMPP Apache + MariaDB + PHP + Perl'. Below this, a section titled '¿Qué es XAMPP?' explains that XAMPP is the most popular PHP development environment, a free distribution of Apache containing MariaDB, PHP, and Perl, designed for easy installation and use. To the right of the text is a video player titled 'Introduction to XAMPP' showing the XAMPP logo. At the bottom, there are three download buttons: 'Descargar' (with a sub-link 'Pulsa aquí para otras versiones'), 'XAMPP para Windows 8.0.2 (PHP 8.0.2)', and 'XAMPP para Linux 8.0.2 (PHP 8.0.2)'. A fourth button for 'XAMPP para OS X 8.0.2 (PHP 8.0.2)' is partially visible. The 'CODER HOUSE' logo is in the bottom right corner.

XAMPP Installers and Download: x +

apachefriends.org/es/index.html

Apache Friends

Descargar Complementos Alojamiento Comunidad Acerca de

Buscar.. Buscar ES

XAMPP Apache + MariaDB + PHP + Perl

¿Qué es XAMPP?

XAMPP es el entorno más popular de desarrollo con PHP

XAMPP es una distribución de Apache completamente gratuita y fácil de instalar que contiene MariaDB, PHP y Perl. El paquete de instalación de XAMPP ha sido diseñado para ser increíblemente fácil de instalar y usar.

Introduction to XAMPP

XAMPP

Descargar
Pulsa aquí para otras versiones

XAMPP para Windows
8.0.2 (PHP 8.0.2)

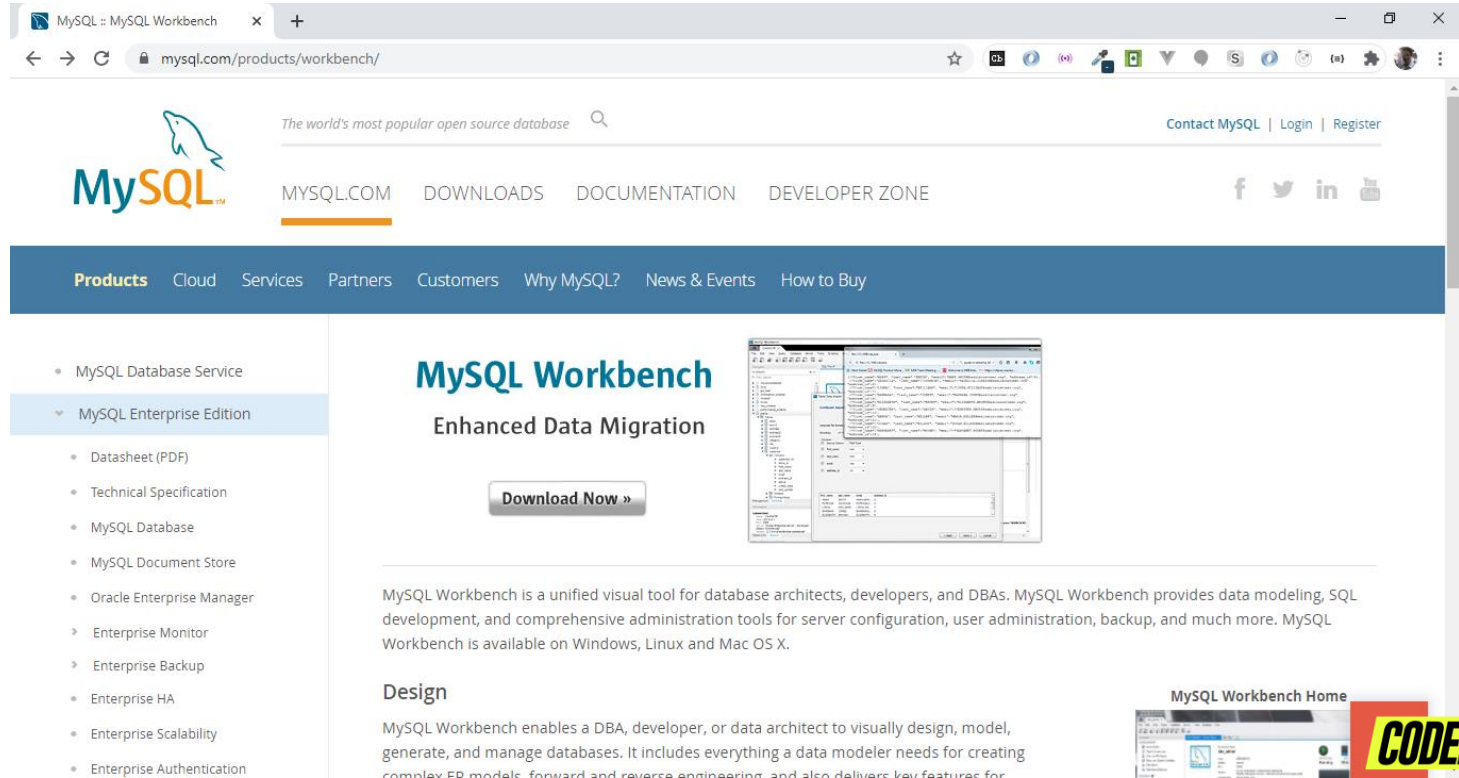
XAMPP para Linux
8.0.2 (PHP 8.0.2)

XAMPP para OS X
8.0.2 (PHP 8.0.2)

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Cliente MariaDB > MySQL Workbench

<https://www.mysql.com/products/workbench/>



The screenshot shows the MySQL Workbench product page. At the top, there's a navigation bar with the MySQL logo and links to MySQL.COM, DOWNLOADS, DOCUMENTATION, and DEVELOPER ZONE. Below this is a dark blue navigation bar with links to Products, Cloud, Services, Partners, Customers, Why MySQL?, News & Events, and How to Buy. The main content area features a sidebar on the left with a list of products, including MySQL Database Service and MySQL Enterprise Edition. The main content area has a large heading for MySQL Workbench, a subheading for Enhanced Data Migration, and a 'Download Now »' button. To the right of the text is a screenshot of the MySQL Workbench application interface. Below the text, there's a paragraph describing MySQL Workbench as a unified visual tool for database architects, developers, and DBAs. At the bottom right, there's a small screenshot of the MySQL Workbench Home screen and a red banner with the text 'CODER HOUSE'.

MySQL :: MySQL Workbench

mysql.com/products/workbench/

The world's most popular open source database

Contact MySQL | Login | Register

MySQL.COM DOWNLOADS DOCUMENTATION DEVELOPER ZONE

Products Cloud Services Partners Customers Why MySQL? News & Events How to Buy

- MySQL Database Service
- MySQL Enterprise Edition
 - Datasheet (PDF)
 - Technical Specification
 - MySQL Database
 - MySQL Document Store
 - Oracle Enterprise Manager
 - Enterprise Monitor
 - Enterprise Backup
 - Enterprise HA
 - Enterprise Scalability
 - Enterprise Authentication

MySQL Workbench

Enhanced Data Migration

[Download Now »](#)

MySQL Workbench is a unified visual tool for database architects, developers, and DBAs. MySQL Workbench provides data modeling, SQL development, and comprehensive administration tools for server configuration, user administration, backup, and much more. MySQL Workbench is available on Windows, Linux and Mac OS X.

Design

MySQL Workbench enables a DBA, developer, or data architect to visually design, model, generate, and manage databases. It includes everything a data modeler needs for creating complex ED models, forward and reverse engineering, and also delivers key features for

MySQL Workbench Home

CODER HOUSE

MySQL Workbench : instalación

The image is a collage of three browser screenshots illustrating the steps to download MySQL Workbench.

Screenshot 1: MySQL Website
The browser shows the MySQL website at mysql.com/products/workbench/. The navigation bar includes links for MySQL.COM, DOWNLOADS, DOCUMENTATION, and DEVELOPER ZONE. A sidebar on the left lists various MySQL products, with 'MySQL Enterprise Edition' expanded. A yellow arrow points to the 'Download Now »' button for MySQL Workbench.

Screenshot 2: MySQL Community Downloads
The browser shows the 'MySQL Community Downloads' page at dev.mysql.com/downloads/workbench/. The page title is 'MySQL Community Downloads' with a sub-header 'MySQL Workbench'. A yellow arrow points to the 'General Availability (GA) Releases' tab.

Screenshot 3: MySQL Workbench 8.0.23 Download Page
The browser shows the 'MySQL Workbench 8.0.23' download page. It includes a 'Select Operating System:' dropdown menu with 'Microsoft Windows' selected. A yellow arrow points to the 'Recommended Download:' section, which features the 'MySQL Installer for Windows'.

MySQL Workbench 8.0.23 Recommended Download:

- Windows (x86, 32 & 64-bit), MySQL Installer MSI

MySQL Workbench Windows Prerequisites:

To be able to install and run MySQL Workbench on Windows, your system needs to have libraries listed below installed. The MySQL website provides as links to the corresponding download pages where you can find the necessary files.

- Microsoft .NET Framework 4.5
- Visual C++ Redistributable for Visual Studio 2019
- Visual C++ Redistributable for Visual Studio 2019 (for Japanese)
- Visual C++ Redistributable for Visual Studio 2019 (for Traditional Chinese)
- Visual C++ Redistributable for Visual Studio 2019 (for Korean)

CODER HOUSE

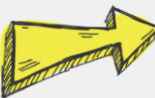
Iniciando nuestro servidor de base de datos

XAMPP Control Panel v3.2.4 [Compiled: Jun 5th 2019]

XAMPP Control Panel v3.2.4

Service	Module	PID(s)	Port(s)	Actions
<input type="checkbox"/>	Apache			<input type="button" value="Start"/> <input type="button" value="Admin"/>
<input type="checkbox"/>	MySQL			<input type="button" value="Start"/> <input type="button" value="Admin"/>
<input type="checkbox"/>	FileZilla			<input type="button" value="Start"/> <input type="button" value="Admin"/>
<input type="checkbox"/>	Mercury			<input type="button" value="Start"/> <input type="button" value="Admin"/>
<input type="checkbox"/>	Tomcat			<input type="button" value="Start"/> <input type="button" value="Admin"/>

10:14:49 [main] All prerequisites found
10:14:49 [main] Initializing Modules
10:14:49 [main] Starting Check-Timer
10:14:49 [main] Control Panel Ready
10:14:53 [mysql] Attempting to start MySQL app...
10:14:53 [mysql] Status change detected: running
11:32:03 [mysql] Attempting to stop MySQL app...
11:32:04 [mysql] Status change detected: stopped




XAMPP Control Panel v3.2.4 [Compiled: Jun 5th 2019]

XAMPP Control Panel v3.2.4

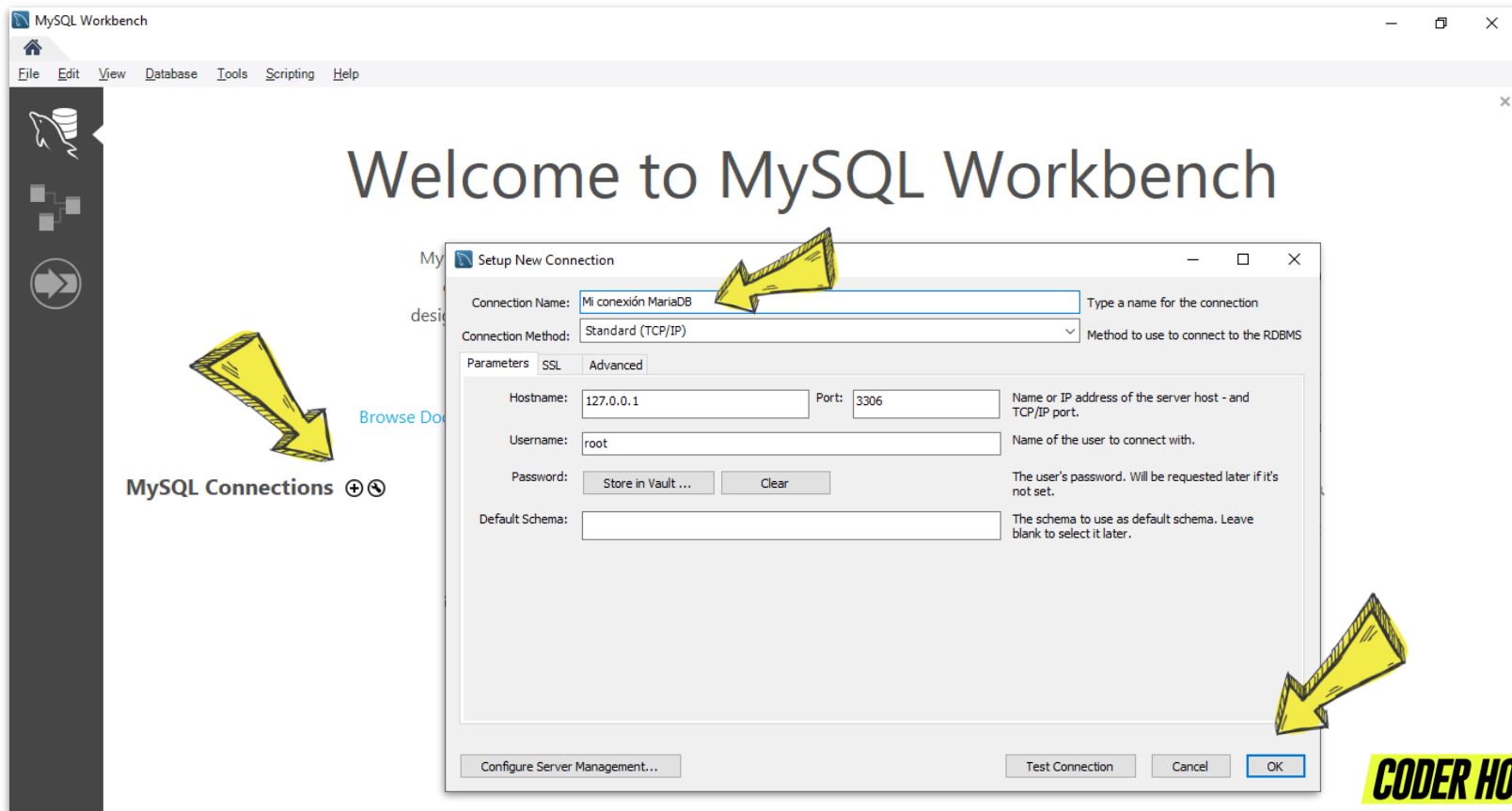
Service	Module	PID(s)	Port(s)	Actions
<input type="checkbox"/>	Apache			<input type="button" value="Start"/> <input type="button" value="Admin"/> <input type="button" value="Config"/> <input type="button" value="Logs"/>
<input type="checkbox"/>	MySQL	9536	3306	<input type="button" value="Stop"/> <input type="button" value="Admin"/> <input type="button" value="Config"/> <input type="button" value="Logs"/>
<input type="checkbox"/>	FileZilla			<input type="button" value="Start"/> <input type="button" value="Admin"/> <input type="button" value="Config"/> <input type="button" value="Logs"/>
<input type="checkbox"/>	Mercury			<input type="button" value="Start"/> <input type="button" value="Admin"/> <input type="button" value="Config"/> <input type="button" value="Logs"/>
<input type="checkbox"/>	Tomcat			<input type="button" value="Start"/> <input type="button" value="Admin"/> <input type="button" value="Config"/> <input type="button" value="Logs"/>

10:14:49 [main] Starting Check-Timer
10:14:49 [main] Control Panel Ready
10:14:53 [mysql] Attempting to start MySQL app...
10:14:53 [mysql] Status change detected: running
11:32:03 [mysql] Attempting to stop MySQL app...
11:32:04 [mysql] Status change detected: stopped
11:33:24 [mysql] Attempting to start MySQL app...
11:33:24 [mysql] Status change detected: running



CODER HOUSE

Inicializando el cliente MySQL Workbench



Utilizando el cliente MySQL Workbench

The screenshot displays the MySQL Workbench interface. The left sidebar shows the 'SCHEMAS' tree with 'ejercicios' expanded, containing 'departamento', 'empleado', and 'Views'. The 'empleado' table is selected. The main editor shows a SQL query: `-- 1. Obtener los datos completos de los empleados.` and `select * from Empleado;`. The 'Result Grid' shows the results of the query, displaying columns: nDIEmp, nomEmp, sexEmp, fecIncorporacion, salEmp, comisionE, cargoE, jefeID, and codDepto. The bottom status bar indicates the query was executed successfully, returning 25 rows in 0.016 seconds.

MySQL Workbench

Conexión Base Curso Martes...

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

ejercicios

Tables

departamento

empleado

Columns

nDIEmp

nomEmp

sexEmp

fecNac

fecIncorporacion

salEmp

comisionE

cargoE

jefeID

codDepto

Indexes

Foreign Keys

Triggers

Administration Schemas

Information

Schema: mibasemartes

Object Info Session

queryClase1 queryClase2 queryClase3 queryClase4 queryEjercicios

Limit to 1000 rows

70 ('333.333.336', 'Carolina Ríos', 'F', '1992-02-15', '2000-10-01', 1250000, 500000,

71 ('333.333.337', 'Edith Muñoz', 'F', '1992-03-31', '2000-10-01', 800000, 3600000, 'V

72 ('1.130.555', 'Julián Mora', 'M', '1989-07-03', '2000-10-01', 800000, 3100000, 'Ven

73

74 -- 1. Obtener los datos completos de los empleados.

75 • select * from Empleado;

76

Result Grid

Filter Rows:

Edit: Export/Import: Wrap Cell Content:

nDIEmp nomEmp sexEmp fecIncorporacion salEmp comisionE cargoE jefeID codDepto

1.130.222 José Giraldo M 1985-01-20 2000-11-01 1200000 400000 Asesor 22.222.222 3500

1.130.333 Pedro Blanco M 1987-10-28 2000-10-01 800000 3000000 Vendedor 31.178.144 2000

1.130.444 Jesús Alfonso M 1988-03-14 2000-10-01 800000 3500000 Vendedor 31.178.144 2000

1.130.555 Julián Mora M 1989-07-03 2000-10-01 800000 3100000 Vendedor 31.178.144 2200

1.130.777 Marcos Cortez M 1986-06-23 2000-04-16 2550000 500000 Mecánico 333.333.333 4000

1.130.782 Antonio Gil M 1980-01-23 2010-04-16 850000 1500000 Técnico 16.211.383 1500

1.751.219 Melissa Roa F 1960-06-19 2001-03-16 2250000 2500000 Vendedor 31.178.144 2100

Empleado 1 x

Apply Revert Context Help Snippets

Output

Action Output

Time Action Message Duration / Fetch

1 10:16:53 select * from Empleado LIMIT 0, 1000 25 row(s) returned 0.016 sec / 0.000 sec

CODER HOUSE



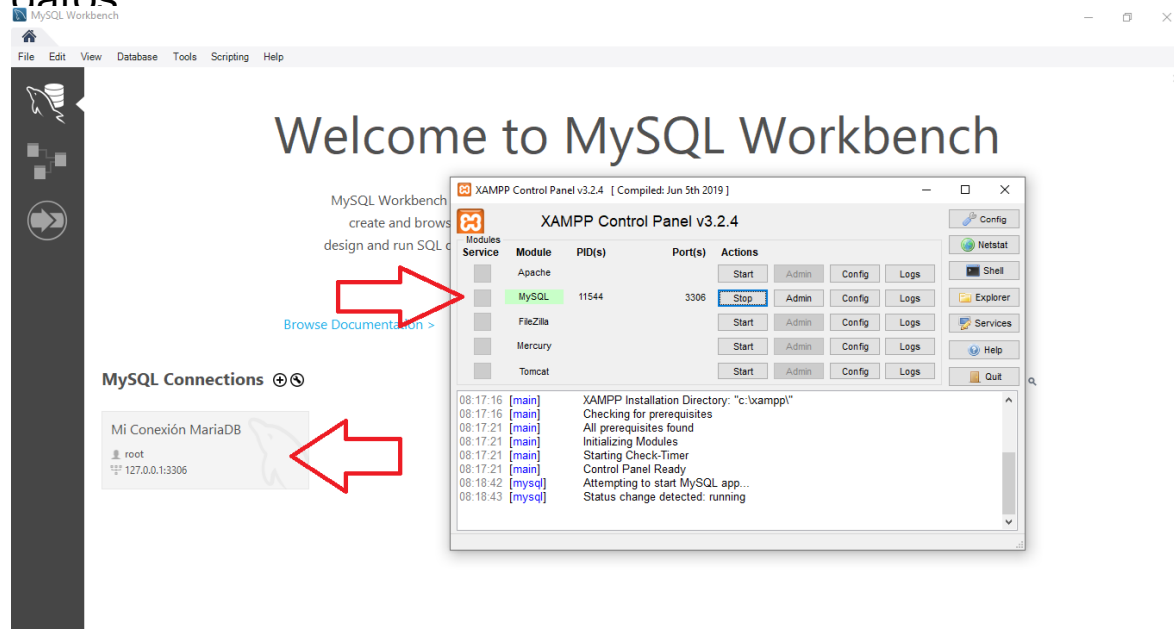
INSTALACIÓN

Tiempo: 10 minutos



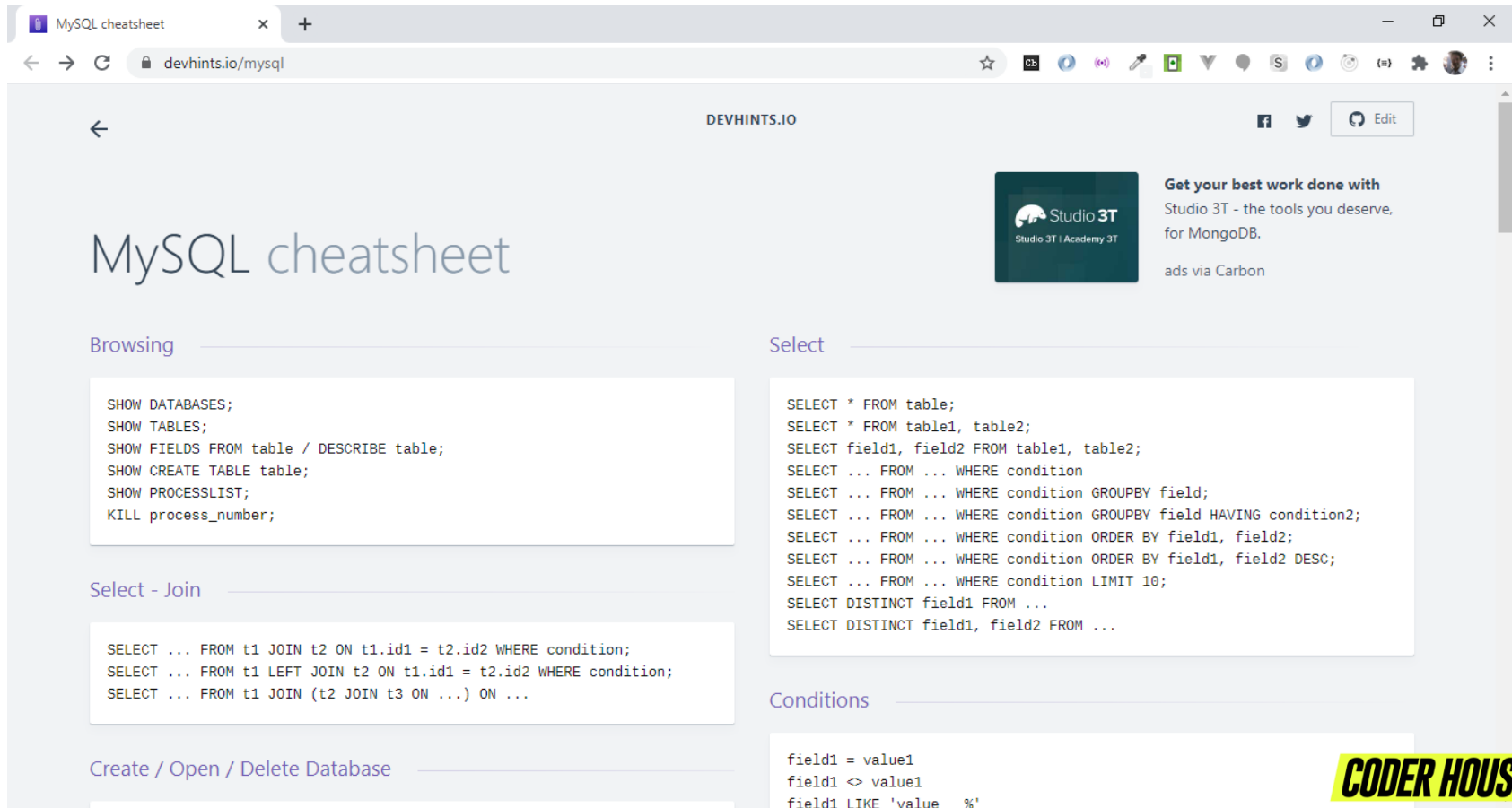
Realizar las siguientes operaciones:

1. Instalar XAMPP e iniciar el motor de base de datos MySQL/MariaDB.
2. Instalar MySQL Workbench y crear una conexión de usuario administrador hacia la base de datos



MySQL Cheatsheet

[*https://devhints.io/mysql*](https://devhints.io/mysql)

***CODER HOUSE***



INICIALIZACIÓN

Tiempo: 10 minutos



Realizar la siguientes operaciones:

1. Iniciar el servicio de base de datos MySQL/MariaDB mediante el panel de control de XAMPP.
2. Listar las bases de datos presentes realizando la consulta SQL con MySQL Workbench.
3. Mediante la aplicación de consola mysql realizar la misma consulta anterior. La aplicación de consola mysql se encuentra en C:\xampp\mysql\bin y se ejecuta en modo administrador con 'mysql -u root' dentro de una consola CLI
4. Iniciar el servidor apache a través del panel de control de XAMPP y levantar en el navegador el cliente web de la base de datos mediante la url <http://localhost/phpmyadmin/> y comprobar las bases de datos existentes



localhost / 127.0.0.1 | phpMyAdmin

localhost/phpmyadmin/

Aplicaciones

phpMyAdmin

Reciente Favoritas

- Nueva
- information_schema
- mysql
- performance_schema
- phpmyadmin
- test

Configuración

Server connection

Más configuración

Configuración

Idioma - Language

Tema: pmahom

Administration Schemas

Information

MySQL Workbench

Mi Conexión MariaDB - Warni...

File Edit View Query Database Server Tools Scripting Help

Navigator

Filter objects

SCHEMAS

- phpmyadmin
- test

Query 1

1 • show databases;

Result Grid

Database
information_schema
mysql
performance_schema
phpmyadmin
test

Administration Schemas

Information

Commander

```
C:\xampp\mysql\bin
λ mysql -u root
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 22
Server version: 10.4.14-MariaDB mariadb.org binary distribut
ion

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and
others.

Type 'help;' or '\h' for help. Type '\c' to clear the curren
t input statement.

MariaDB [(none)]> show databases;

+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| phpmyadmin |
| test |
+-----+
5 rows in set (0.002 sec)

MariaDB [(none)]>
```

mysql.exe

Message

5 row(s) returned

Duration / Fetch

0.000 sec / 0.000 sec

Licencia

XAMPP Control Panel v3.2.4 [Compiled: Jun 5th 2019]

XAMPP Control Panel v3.2.4

Modules

Service	Module	PID(s)	Port(s)	Actions
<input type="checkbox"/>	Apache	16828 7164	80, 443	Stop Admin Config Logs
<input type="checkbox"/>	MySQL	11544	3306	Stop Admin Config Logs
<input type="checkbox"/>	FileZilla			Start Admin Config Logs
<input type="checkbox"/>	Mercury			Start Admin Config Logs

Config

Netstat

Shell

Explorer

Services

Help

MySQL: Crear base de datos, crear tablas

base de datos



Create / Open / Delete Database

```
CREATE DATABASE DatabaseName;  
CREATE DATABASE DatabaseName CHARACTER SET utf8;  
USE DatabaseName;  
DROP DATABASE DatabaseName;  
ALTER DATABASE DatabaseName CHARACTER SET utf8;
```

Create / Delete / Modify Table

Create

```
CREATE TABLE table (field1 type1, field2 type2);  
CREATE TABLE table (field1 type1, field2 type2, INDEX (field));  
CREATE TABLE table (field1 type1, field2 type2, PRIMARY KEY (field1));  
CREATE TABLE table (field1 type1, field2 type2, PRIMARY KEY (field1,field2));
```

ARTICULO	CANTIDAD
ZAPATILLAS	1.500
GORRAS	12.200
PANTALONES	3.800
CAMISETAS	7.100



CREATE READ UPDATE DELETE

CREATE READ UPDATE DELETE

MySQL CRUD: Select, Insert, Update, Delete

Select

```
SELECT * FROM table;
SELECT * FROM table1, table2;
SELECT field1, field2 FROM table1, table2;
SELECT ... FROM ... WHERE condition
SELECT ... FROM ... WHERE condition GROUPBY field;
SELECT ... FROM ... WHERE condition GROUPBY field HAVING condition2;
SELECT ... FROM ... WHERE condition ORDER BY field1, field2;
SELECT ... FROM ... WHERE condition ORDER BY field1, field2 DESC;
SELECT ... FROM ... WHERE condition LIMIT 10;
SELECT DISTINCT field1 FROM ...
SELECT DISTINCT field1, field2 FROM ...
```

Update

```
UPDATE table1 SET field1=new_value1 WHERE condition;
UPDATE table1, table2 SET field1=new_value1, field2=new_value2, ... WHERE
table1.id1 = table2.id2 AND condition;
```

Conditions

```
field1 = value1
field1 <> value1
field1 LIKE 'value _ %'
field1 IS NULL
field1 IS NOT NULL
field1 IS IN (value1, value2)
field1 IS NOT IN (value1, value2)
condition1 AND condition2
condition1 OR condition2
```

Insert

```
INSERT INTO table1 (field1, field2) VALUES (value1, value2);
```

Delete

```
DELETE FROM table1 / TRUNCATE table1
DELETE FROM table1 WHERE condition
DELETE FROM table1, table2 FROM table1, table2 WHERE table1.id1 =
table2.id2 AND condition
```



GESTIONANDO UNA BASE DE DATOS

Tiempo: 10 minutos



Mediante en uso del cliente MySQL Workbench realizar las siguientes tareas:

- 1) Crear una base de datos llamada 'mibase'
- 2) Crear una tabla dentro de esa base con el nombre 'usuarios' que contenga los siguientes campos:
 - 'nombre' del tipo varchar no nulo
 - 'apellido' del tipo varchar no nulo
 - 'edad' del tipo entero sin signo
 - 'email' del tipo varchar no nulo
 - 'id' clave primaria autoincremental no nula



3) Insertar estos 3 usuarios en esa tabla:

- Juan Perez, edad 23, jp@gmail.com
- Pedro Mei, edad 21, pm@gmail.com
- Juana Suarez, edad 25, js@gmail.com

3) Listar los usuarios agregados

4) Borrar el usuario con id = 2

5) Actualizar la edad del usuario con id = 1 a 24 años

6) Listar los registros comprobando que los datos estén actualizados según las acciones realizadas.

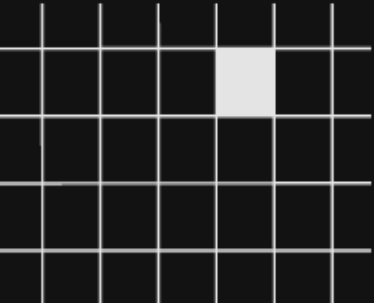
¿PREGUNTAS?





¡MUCHAS GRACIAS!

Resumen de lo visto en clase hoy:

- Bases de datos.
 - Lenguaje SQL.
 - MySQL.
 - MariaDB.
 - SQLite3.
- 



OPINA Y VALORA ESTA CLASE

#DEMOCRATIZANDOLAEDUCACIÓN