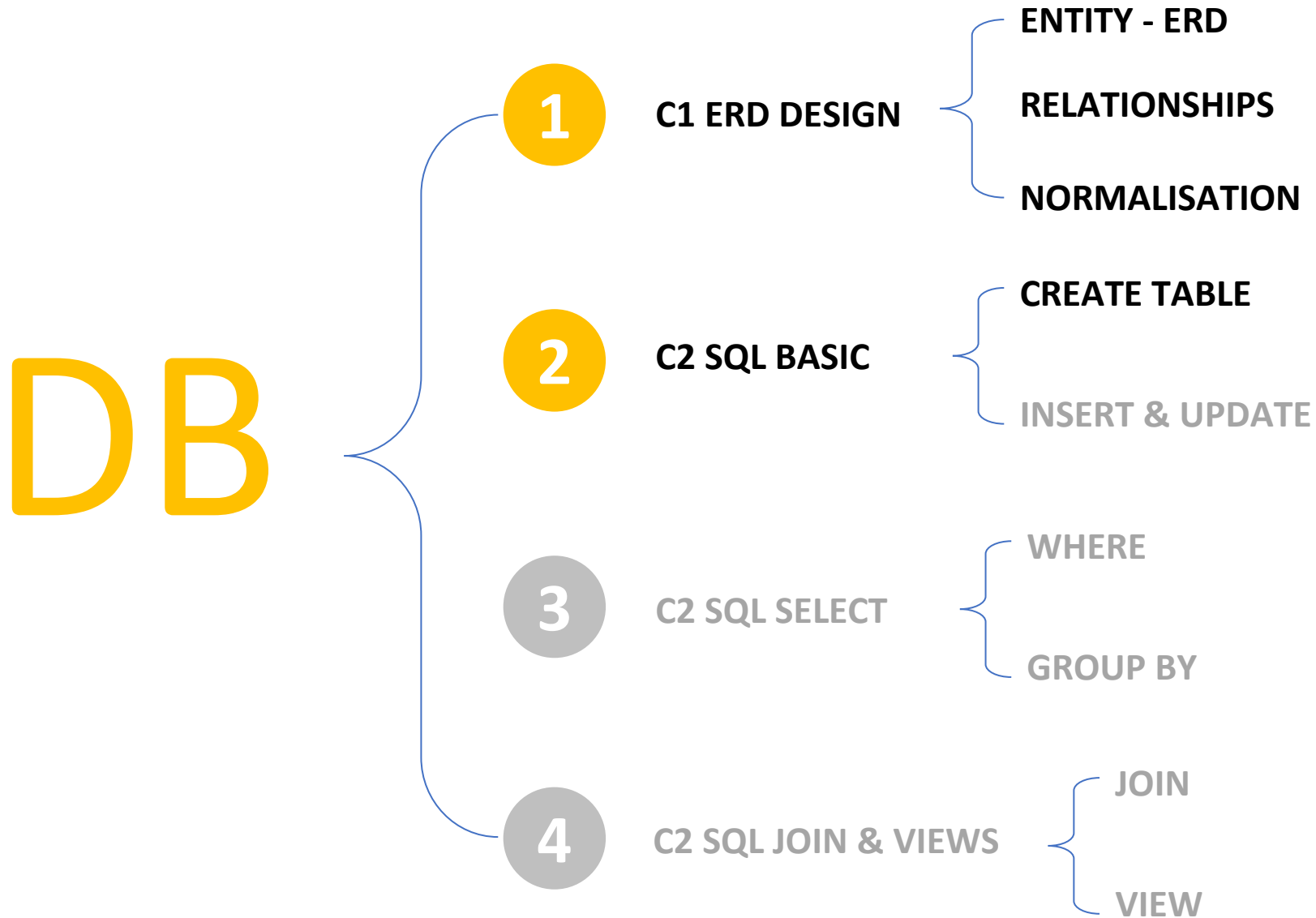


# DB

**Creating and managing  
tables in MySQL**

# Database content



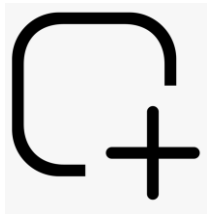


# OBJECTIVES FOR TODAY



- ✓ Manage **MySQL database**
  - ✓ create database
  - ✓ delete database
  
- ✓ Manage **MySQL table**
  - ✓ create table
  - ✓ delete table
  - ✓ set columns types

# SOME KEY WORDS !!!!



**CREATE**

CREATE A TABLE, A DATABASE



**MODIFY**

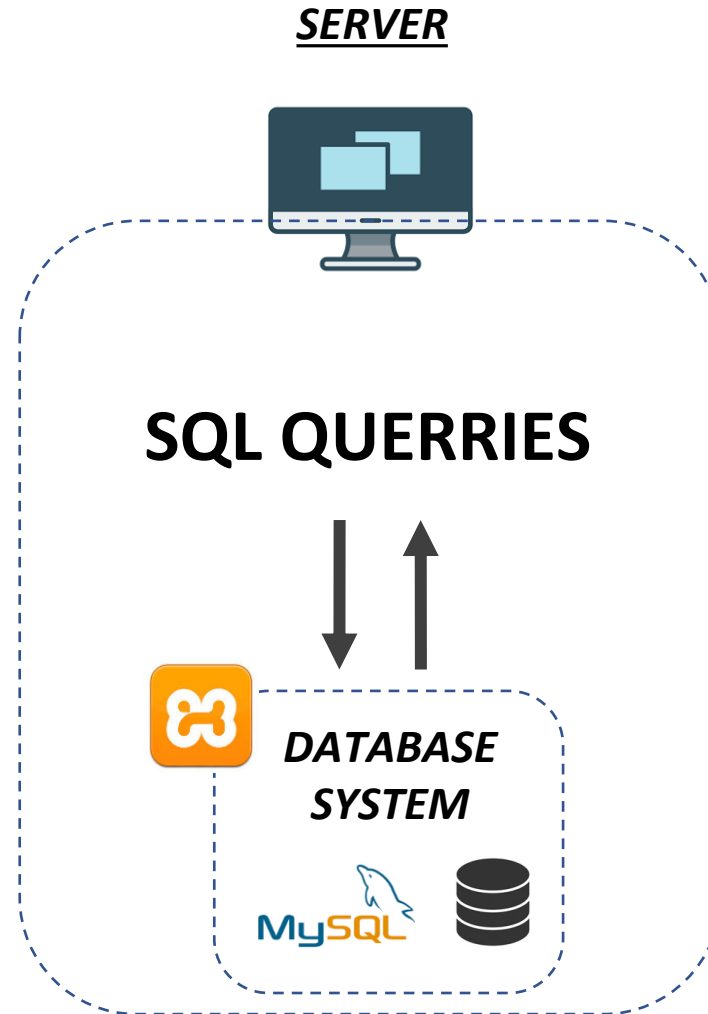
CHANGE A COLUMN



**DROP**

DELETE A DATABASE, A  
TABLE

# How to connect to a **database system** ?



# What is MySQL ?



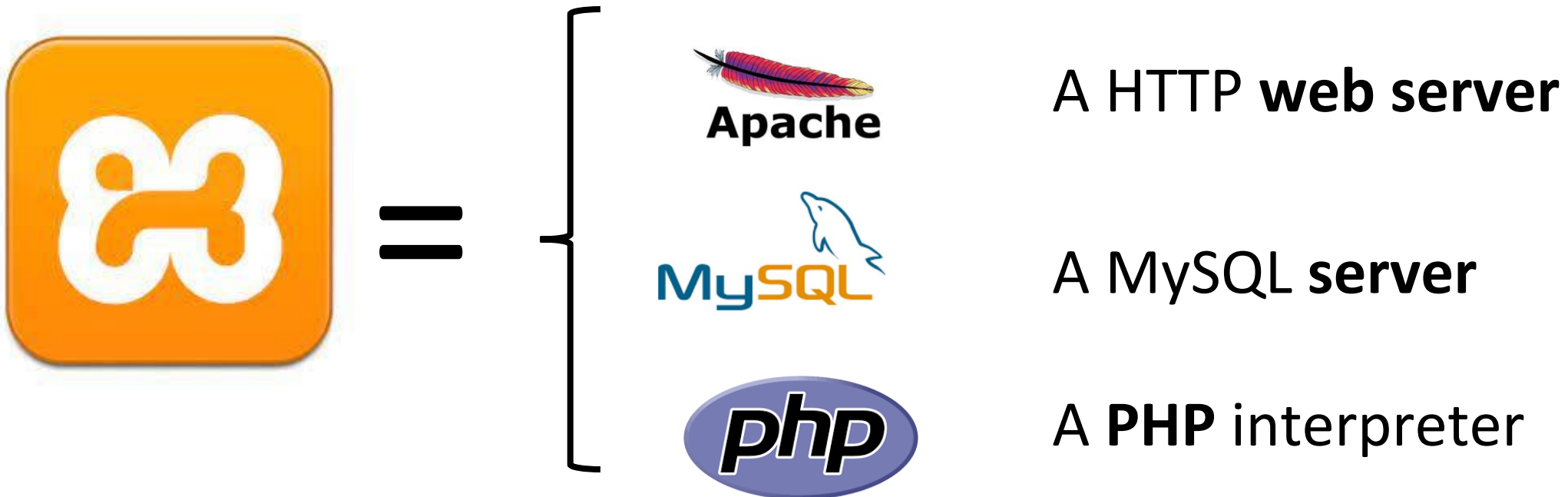
✓ A relational database management system (RDMS)

✓ A language to

[	CREATE MODIFY EXTRACT	<b>data</b> from a relational database
---	-----------------------------	--

# What is **XAMPP** ?

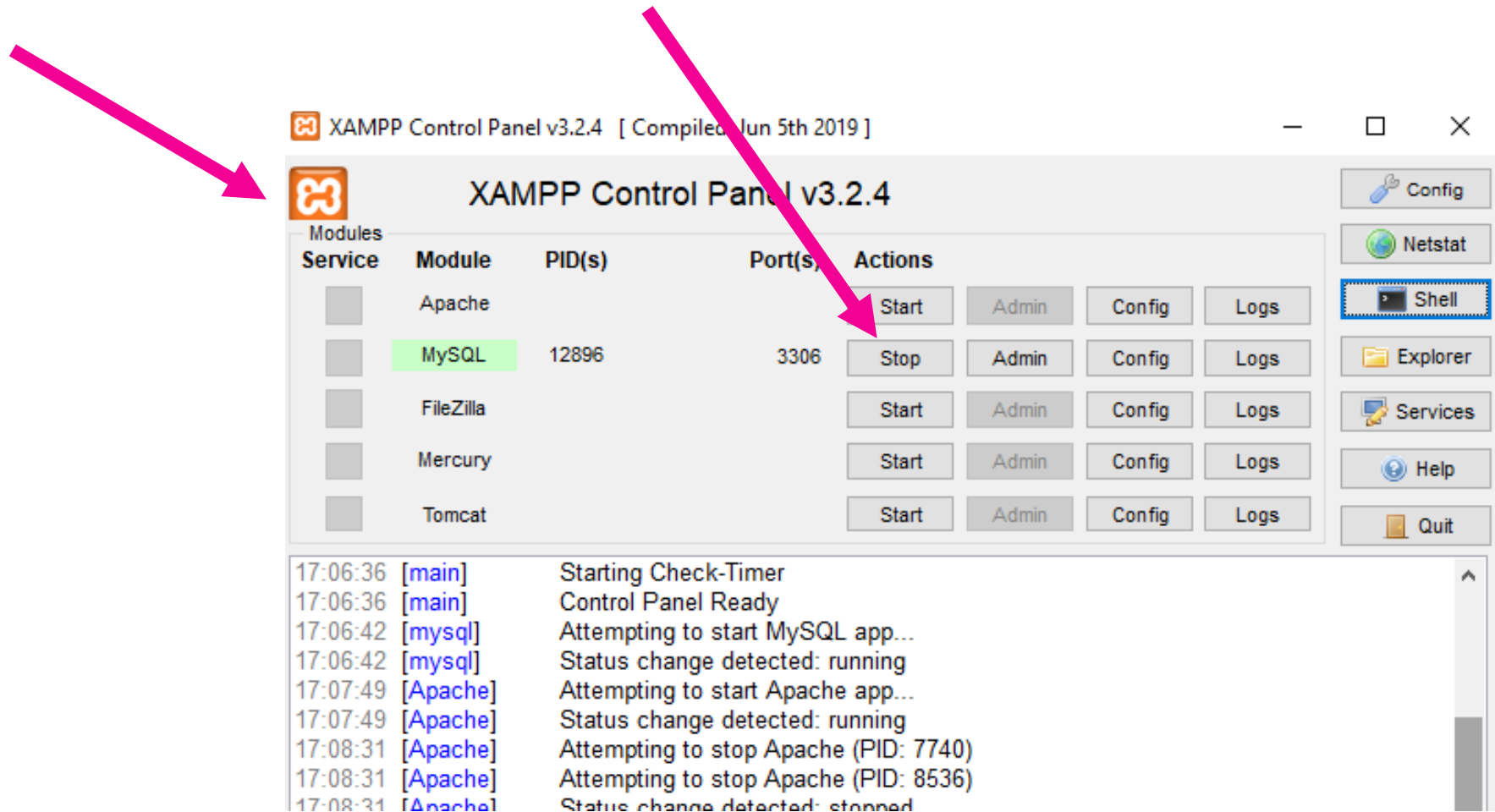
**XAMPP** is a CROSS PLATFORM application providing many services:



# Let's connect to the RDMS

1 – RUN XAMPP

2 – ACTIVATE MYSQL



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			Start Admin Config Logs
<input type="checkbox"/>	MySQL	12896	3306	Stop Admin Config Logs
<input type="checkbox"/>	FileZilla			Start Admin Config Logs
<input type="checkbox"/>	Mercury			Start Admin Config Logs
<input type="checkbox"/>	Tomcat			Start Admin Config Logs

17:06:36 [main] Starting Check-Timer  
17:06:36 [main] Control Panel Ready  
17:06:42 [mysql] Attempting to start MySQL app...  
17:06:42 [mysql] Status change detected: running  
17:07:49 [Apache] Attempting to start Apache app...  
17:07:49 [Apache] Status change detected: running  
17:08:31 [Apache] Attempting to stop Apache (PID: 7740)  
17:08:31 [Apache] Attempting to stop Apache (PID: 8536)  
17:08:31 [Apache] Status change detected: stopped

Config Netstat Shell Explorer Services Help Quit

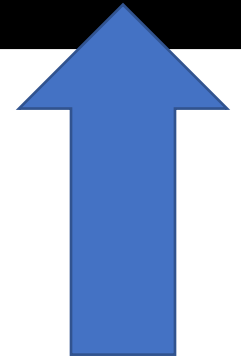


# Launch a terminal and run **mysql** programm

```
mysql -u root
```

By default

{ USER = root  
PASSWORD = *no password*



**CREATE DATABASE**

**DELETE DATABASE**

# Create a database

```
CREATE DATABASE your database ;
```

```
MariaDB [(none)]> CREATE DATABASE ronanTable;  
Query OK, 1 row affected (0.001 sec)
```



Want to create database **only** if NOT existing?

```
CREATE DATABASE IF NOT EXISTS <db>
```

# Select database to work with

```
USE <your database>;
```

```
MariaDB [(none)]> USE ronanTable;  
Database changed
```

# Remove a database

```
DROP DATABASE <your database>;
```

**CREATE TABLE**  
**SET COLUMN PROPERTIES**  
**DELETE TABLE**

# Create a table

```
CREATE TABLE <your table>
(
    column1 datatype,
    column2 datatype,
    ...
);
```

# Remove a table

```
DROP TABLE <table name>;
```



# Most common My SQL types

TYPE	Description	Example
<b>CHAR( fixedSize)</b>	A FIXED length string	toto
<b>VARCHAR(maximumSize)</b>	A VARIABLE length string - From 0 to maximumSize characters	toto
<b>BINARY</b>	A binary value	
<b>BOOLEAN</b>	Zero is considered as false, other than is considered as true.	1 (True), yes 0 (False), no
<b>INTEGER</b>		45
<b>FLOAT</b>		42.5
<b>DATE</b>	A date - Format: YYYY-MM-DD	2021-06-05
<b>TIME</b>	A time Format: hh:mm:ss	11:45:00
<b>DATETIME</b>	A date and time Format: YYYY-MM-DD hh:mm:ss	2021-06-05 11:45:00



See more type : [https://www.w3schools.com/mysql/mysql\\_datatypes.asp](https://www.w3schools.com/mysql/mysql_datatypes.asp)

# Create your first SQL table

PET		
	name	VARCHAR(20)
	owner	VARCHAR(20)
	sex	CHAR(1)
	birth	DATE
	death	DATE

```
CREATE TABLE pet (  
    name VARCHAR(20), owner VARCHAR(20), sex CHAR(1),  
    birth DATE, death DATE  
);
```

# 3 nice columns properties

```
CREATE TABLE Persons (  
    personId int ,  
    lastName varchar(255) NOT NULL,  
    firstName varchar(255),  
    age int DEFAULT (20),  
    PRIMARY KEY (personId)  
);
```

NOT NULL = value cannot be null  
NULL = value can be null

By default age value is 20

Define the PRIMARY KEY

# Show all tables

```
SHOW TABLES;
```

```
MariaDB [ronanTable]> SHOW TABLES;  
+-----+  
| Tables_in_ronantable |  
+-----+  
| pet                   |  
+-----+  
1 row in set (0.001 sec)
```

# Display the structure of a table

DESCRIBE tablename;

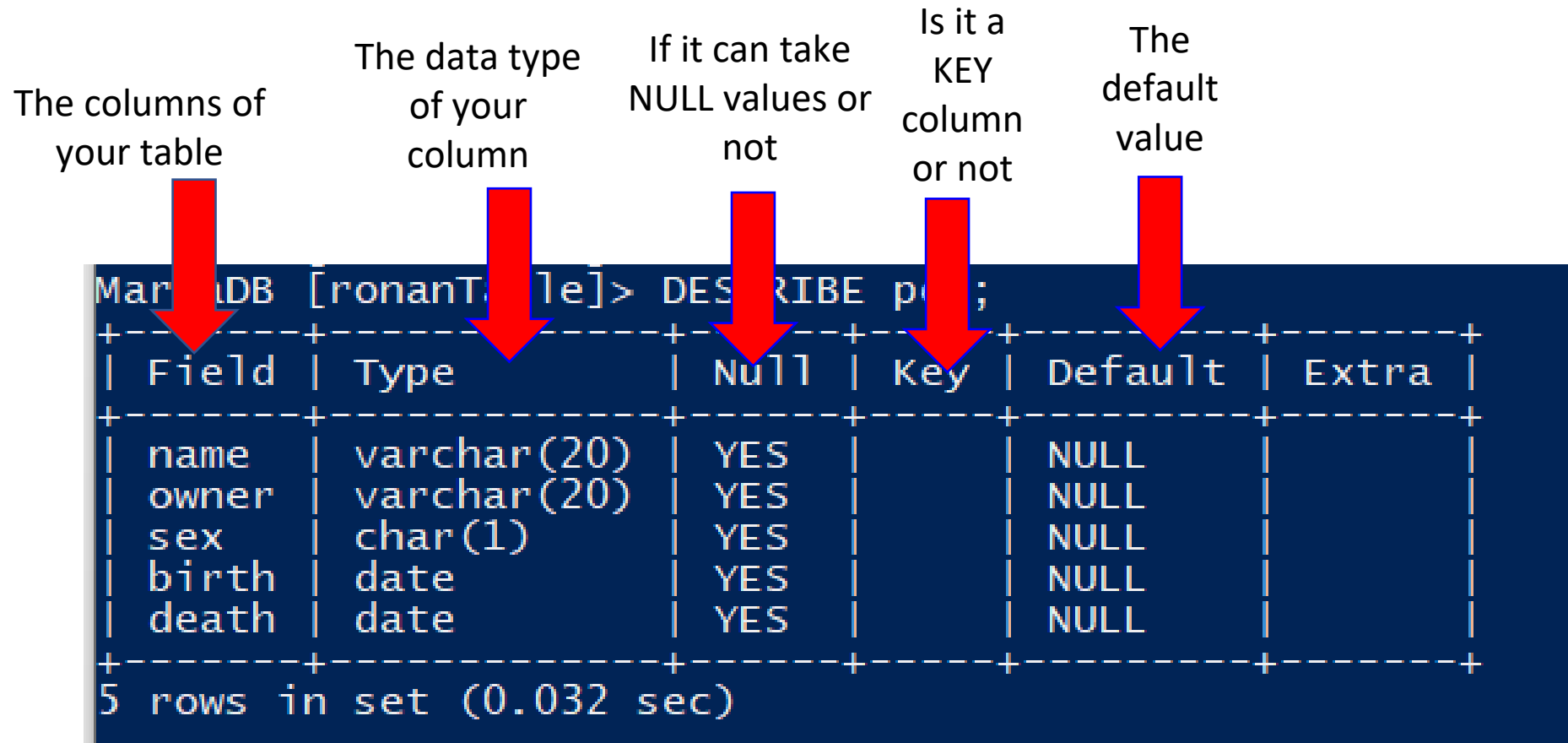
The columns of your table

The data type of your column

If it can take NULL values or not

Is it a KEY column or not

The default value



Field	Type	Null	Key	Default	Extra
name	varchar(20)	YES		NULL	
owner	varchar(20)	YES		NULL	
sex	char(1)	YES		NULL	
birth	date	YES		NULL	
death	date	YES		NULL	

5 rows in set (0.032 sec)

# Add a table column

```
ALTER TABLE pet  
ADD email varchar(255);
```

Column  
name

Column  
type

Field	Type	Null	Key	Default	Extra
name	varchar(20)	YES		NULL	
owner	varchar(20)	YES		NULL	
sex	char(1)	YES		NULL	
birth	date	YES		NULL	
death	date	YES		NULL	
email	varchar(255)	YES		NULL	

New column added

# Change a table column

```
ALTER TABLE pet  
MODIFY email varchar(140);
```

Column  
name

Column  
type

Field	Type	Null	Key	Default	Extra
name	varchar(20)	YES		NULL	
owner	varchar(20)	YES		NULL	
sex	char(1)	YES		NULL	
birth	date	YES		NULL	
death	date	YES		NULL	
email	varchar(140)	YES		NULL	

Column modified

# Remove a table column

```
ALTER TABLE pet
DROP email;
```

Column  
name

Field	Type	Null	Key	Default	Extra
ID	int(11)	NO		NULL	
LastName	varchar(255)	NO		NULL	
FirstName	varchar(255)	YES		NULL	
Age	int(11)	NO	PRI	NULL	

column email removed



# Change a primary key

```
ALTER TABLE Persons  
DROP PRIMARY KEY,  
ADD PRIMARY KEY (Age);
```

Remove previous PK



Set the new PK



Field	Type	Null	Key	Default	Extra
ID	int(11)	NO		NULL	
LastName	varchar(255)	NO		NULL	
FirstName	varchar(255)	YES		NULL	
Age	int(11)	NO	PRI	NULL	

## ACTIVITY 1



10 MIN

# 1. Create the following table

Employee			
PK	employeeID	VARCHAR(200)	NOT NULL
	firstName	VARCHAR(100)	
	sex	CHAR(1)	NOT NULL
	birth	DATE	

## 2. show the result of your table creation

## ACTIVITY 2



10 MIN

```
CREATE TABLE tasks (  
    taskId INT(11) NOT NULL,  
    subject VARCHAR(45),  
    startDate DATE DEFAULT "2021-06-11",  
    endDate DATE,  
    description VARCHAR(200) NOT NULL,  
    PRIMARY KEY (taskId )  
);
```

### QUESTIONS:

1. What are the columns of the table tasks?
2. Which column is the primary key?
3. What is the type of **subject**?
4. Can **end\_date** be NULL or not?
5. Can **description** be NULL or not?
6. What is the default value of **start\_date**?

## Activity (correction)

Q1) The columns are *task\_id*, *varchar*, *start\_date*, *end\_date*, *dexcription*

Q2) We have the statement “PRIMAY KEY(task\_id)”, so *task\_id* is the primary key

Q3) *subject* data type is a string which maximum length is 45 characters because we have ”subject varchar(45)

Q4) *end\_date* can be NULL because we indicate NULL next to the data type

Q5) *description* NOT NULL

Q6) The default value of *start\_date* is 2021-06-11

# GOOD LINKS

[https://www.w3schools.com/sql/sql\\_syntax.asp](https://www.w3schools.com/sql/sql_syntax.asp)

<https://dev.mysql.com/doc/mysql-tutorial-excerpt/8.0/en/database-use.html>

<https://www.techonthenet.com/mysql/index.php>