SQL: Structed query Language / BACKEND

* **CRUD:**
  + C ---- > Create something
  + R ---- > Read the data
  + U --- > Update the data
  + D --- > Delete the data

Go to (oracle ) MySQL benchwork - <https://dev.mysql.com/downloads/workbench/>

**Or use Remote Database**

**Webserve**r: Server that serve task with website; Task –

* When register your info goes Webserver ;;
* When login, it will verify the login & password with business logic.

**Business Logic (APP Server)**: A monitor; that is between Webserver & database; Task – that goes back & forth to bring data from Database and send the info to Webserver…

* After registering Webserver will send the info to Business Logic which will store in to Database
* If logging in, it will verify the login & password with the info stored in Database.

**Database**: data that is stored in the Back – End.

* When registered, Business login will store the info here. It will always stay here.
* **Relational database Model:** Sorting the Users info into groups and organize the data
  + {name, E address, Plumber} {favorite products } {Checkout Address}

Primary Key: Used to attach the database

Foreign key: Used to attach the database (child)

A screenshot of a computer

Description automatically generated

Database Administrator : DBA Will write all the info of the database

Varchar : means text

Name of database: Shopping carts

Tables: 7 tables { categories, customers, order details ..}

Query: (these helps us to test data that are instore in database)

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| --- | --- |
| [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM customers; | Selecting all data from objects of database |
| [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) address FROM customers; | Selecting data inside objects |
| [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) CustomerName, address FROM customers; | Selecting 2 data inside objects / table |
| SELECT `Country` FROM customers where `Country` = 'Mexico'; |  |
| [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) DISTINCT `Country` FROM `customers`; | Selecting only one data, will now repeat |
| [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `products` ORDER BY Price ASC; | Selecting by Descending (low) |
| [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `products` ORDER BY Price DESC; | Selecting by Descending (high) |
| [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `products` ORDER BY ProductName; | It will order by alphabet letter |
| [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `customers` WHERE `Country` = 'SPAIN'  [AND](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_and) CustomerName [LIKE](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/string-comparison-functions.html%23operator_like) 'g%'; | Selecting customs from Spain and name starts with G; note if it is after % then ends before -> begin. |
| [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `customers`   WHERE `Country` = 'Germany'  [OR](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_or) Country = 'SPAIN' | Selecting to category at once using OR. You can add **ASC** or **DESC** |
| [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `customers` WHERE [NOT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/logical-operators.html%23operator_not)  `Country` = 'SPAIN'; | Selecting all countries except Spain |

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| --- |
| **Insert Value:** |
| **Insert**  INSERT INTO customers (CustomerName, ContactName, Address,City, PostalCode, Country)  VALUES ('Jon', 'Jon Smith', '1000 wilson blvd', 'Fairfax', '22122', 'USA' )  ***Insert Data success***  A yellow background with black text  Description automatically generated |
| ***Update data***  UPDATE customers  set CustomerName = 'Jonny jones'  WHERE CustomerID = 75; |
| **{ Limit (int) , Order BY, DESC, ACS}**  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `products` LIMIT 3; : will select the first top 3  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `products` ORDER BY Price DESC LIMIT 1; - selecting by high price order and limit1    **{MIN, MAX, SUM, AVG, Count, Passing Parameters}**  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [MIN](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_min)(Price) FROM products; 🡪 Easier way to do it  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [MAX](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_min)(Price) FROM products; 🡪 Easier way to do it  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [COUNT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_count)(\*) FROM products; 🡪 to see the counts of products  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [SUM](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_sum)(Quantity) FROM orderdetails; 🡪 to see the Quantity  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) [AVG](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/aggregate-functions.html%23function_avg)(Price) from products; 🡪 to calculate the average  **{Like, IN}**  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `customers` WHERE CustomerName [LIKE](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/string-comparison-functions.html%23operator_like) 'a%'; 🡪 selects customer name starts with A  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `customers` WHERE CustomerName [LIKE](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/string-comparison-functions.html%23operator_like) '%a'; 🡪 selects customer name Ends with A  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `customers` WHERE CustomerName [LIKE](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/string-comparison-functions.html%23operator_like) '%Antonio%';🡪 customer names with similar input  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) \* FROM `customers` WHERE `Country` [IN](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/comparison-operators.html%23function_in) ('Germany','French', 'UK'); 🡪 filer with IN  **{Joins, Inner Join, left Join, Right Join, Full Join}**  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) `ProductID`,`ProductName`,CategoryName  FROM `products`  INNER JOIN categories  ON products.CategoryID = categories.CategoryID; 🡪 joining 2 tables and display at once  [SELECT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/select.html) customers.CustomerName, orders.OrderID  from customers  [LEFT](http://www.agile1test.com/sql/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/string-functions.html%23function_left) JOIN orders  ON customers.CustomerID = orders.CustomerID; 🡪 Left Join |

**KEY:**

|  |  |  |
| --- | --- | --- |
| **Select** | **Select distinct** | **Where** |
| **Order by** | **And** | **Or** |
| **Not** | **Insert info , value** | **Update, set, Where** |
| **Delete** |

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| --- | --- | --- |
| **Min** | **Max** | **Count** |
| **Sum** | **Average** | **Like** |

|  |  |  |
| --- | --- | --- |
| **Joins** | **inner join** | **left join** |
| **right join** | **full join** | **group by** |

**having --- >**