

1 SELECT

Select specific columns or all data:

show databases ;

use ecommerce;

SELECT * FROM ecommerce_data

LIMIT 8;

Output:

Result Grid												
Filter Rows:												
Edit:												
Export/Import:												
Wrap Cell Content:												
Fetch rows:												
order_id	customer_name	email	city	country	product_name	category	quantity	price	total_amount	order_date	status	
1	John Doe	john.doe@example.com	New York	USA	Laptop	Electronics	1	800.00	800.00	2025-01-15 10:25:00	Completed	
2	Jane Smith	jane.smith@example.com	Los Angeles	USA	Smartphone	Electronics	2	500.00	1000.00	2025-02-18 14:12:00	Pending	
3	Alice Johnson	alice.johnson@example.com	Chicago	USA	Headphones	Electronics	1	50.00	50.00	2025-03-05 09:30:00	Completed	
4	Bob Brown	bob.brown@example.com	Houston	USA	T-shirt	Clothing	3	20.00	60.00	2025-04-20 12:45:00	Completed	
5	Carol White	carol.white@example.com	Miami	USA	Shoes	Clothing	2	60.00	120.00	2025-05-10 16:00:00	Pending	
6	David Lee	david.lee@example.com	Seattle	USA	Laptop	Electronics	1	900.00	900.00	2025-06-11 11:15:00	Completed	
7	Eva Green	eva.green@example.com	Boston	USA	Novel	Books	2	15.00	30.00	2025-07-02 13:50:00	Completed	
8	Frank Harris	frank.harris@example.com	San Francisco	USA	Blender	Home & Kitchen	1	120.00	120.00	2025-08-15 09:05:00	Cancelled	
* NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	

2 WHERE with LIMIT

show databases ;

use ecommerce;

SELECT * FROM ecommerce_data

WHERE category = 'Electronics'

LIMIT 8;

Output:

Result Grid												
Filter Rows:												
Edit:												
Export/Import:												
Wrap Cell Content:												
Fetch rows:												
order_id	customer_name	email	city	country	product_name	category	quantity	price	total_amount	order_date	status	
1	John Doe	john.doe@example.com	New York	USA	Laptop	Electronics	1	800.00	800.00	2025-01-15 10:25:00	Completed	
2	Jane Smith	jane.smith@example.com	Los Angeles	USA	Smartphone	Electronics	2	500.00	1000.00	2025-02-18 14:12:00	Pending	
3	Alice Johnson	alice.johnson@example.com	Chicago	USA	Headphones	Electronics	1	50.00	50.00	2025-03-05 09:30:00	Completed	
6	David Lee	david.lee@example.com	Seattle	USA	Laptop	Electronics	1	900.00	900.00	2025-06-11 11:15:00	Completed	
9	Zoe Adams	zoe.adams@example.com	Austin	USA	Smartwatch	Electronics	1	200.00	200.00	2025-09-30 17:30:00	Completed	
12	John Doe	john.doe@example.com	New York	USA	Laptop	Electronics	1	800.00	800.00	2025-01-15 10:25:00	Completed	
13	Jane Smith	jane.smith@example.com	Los Angeles	USA	Smartphone	Electronics	2	500.00	1000.00	2025-02-18 14:12:00	Pending	
14	Alice Johnson	alice.johnson@example.com	Chicago	USA	Headphones	Electronics	1	50.00	50.00	2025-03-05 09:30:00	Completed	
* NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	

3 ORDER BY with LIMIT

show databases ;

use ecommerce;

SELECT * FROM ecommerce_data

ORDER BY price DESC

LIMIT 9;

Output:

Result Grid												
Filter Rows:												
Edit:												
Export/Import:												
Wrap Cell Content:												
Fetch rows:												
	order_id	customer_name	email	city	country	product_name	category	quantity	price	total_amount	order_date	status
▶	270	Grace Turner	grace.turner@example.com	Seattle	USA	Laptop	Electronics	1	1030.00	1030.00	2025-07-06 14:20:00	Completed
	257	Tina Adams	tina.adams@example.com	Miami	USA	Laptop	Electronics	1	1020.00	1020.00	2025-02-26 12:05:00	Completed
	244	Grace Turner	grace.turner@example.com	Houston	USA	Laptop	Electronics	1	1010.00	1010.00	2025-08-19 10:15:00	Pending
	228	Quinn Moore	quinn.moore@example.com	Seattle	USA	Laptop	Electronics	1	1005.00	1005.00	2025-03-12 10:20:00	Completed
	215	Daniel Lewis	daniel.lewis@example.com	Miami	USA	Laptop	Electronics	1	1000.00	1000.00	2025-02-25 12:05:00	Completed
	202	Quentin Allen	quentin.allen@example.com	Houston	USA	Laptop	Electronics	1	995.00	995.00	2025-08-18 10:15:00	Pending
	173	Noah Carter	noah.carter@example.com	Miami	USA	Laptop	Electronics	1	990.00	990.00	2025-02-25 12:05:00	Completed
	186	Aaron Mills	aaron.mills@example.com	San Diego	USA	Laptop	Electronics	1	985.00	985.00	2025-03-10 10:20:00	Completed
	160	Abby Foster	abby.foster@example.com	Houston	USA	Laptop	Electronics	1	980.00	980.00	2025-08-15 10:20:00	Pending
*												

4 GROUP BY

show databases ;

use ecommerce;

DESCRIBE ecommerce_data;

SHOW COLUMNS FROM ecommerce_data;

SELECT column_name, COUNT(*) AS total_count

FROM ecommerce_data

GROUP BY column_name

LIMIT 8;

SELECT column_name, SUM(numeric_column) AS total_sum

FROM ecommerce_data

GROUP BY column_name

LIMIT 8;

Output:-

Result Grid						
Filter Rows:						
Export:						
Wrap Cell Content:						
	Field	Type	Null	Key	Default	Extra
	city	varchar(50)	YES		NULL	
	country	varchar(50)	YES		NULL	
	product_name	varchar(100)	YES		NULL	
	category	varchar(50)	YES		NULL	
	quantity	int	YES		NULL	
	price	decimal(10,2)	YES		NULL	
	total_amount	decimal(10,2)	YES		NULL	

5 WHERE + ORDER BY + LIMIT

show databases ;

use ecommerce;

SELECT * FROM ecommerce_data

WHERE quantity > 5

ORDER BY price ASC;

Output:-

Result Grid												
	order_id	customer_name	email	city	country	product_name	category	quantity	price	total_amount	order_date	status
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

JOIN:

Self-join: Customers with multiple orders:

show databases ;

use ecommerce;

SELECT a.customer_name, a.order_id AS order1, b.order_id AS order2

FROM ecommerce_data a

INNER JOIN ecommerce_data b

ON a.customer_name = b.customer_name

WHERE a.order_id <> b.order_id

LIMIT 8;

Output:-

Result Grid			
	customer_name	order1	order2
▶	John Doe	12	1
	Jane Smith	13	2
	Alice Johnson	14	3
	Bob Brown	15	4
	Carol White	16	5
	David Lee	17	6
	Eva Green	18	7

Left Join

show databases ;

use ecommerce;

SELECT a.customer_name, a.order_id AS order1, b.order_id AS order2

FROM ecommerce_data a

LEFT JOIN ecommerce_data b

ON a.customer_name = b.customer_name AND a.order_id <> b.order_id

LIMIT 8;

Output:-

Result Grid			
Filter Rows:		Export:	Wrap Cell Content: Fetch rows:
	customer_name	order1	order2
▶	John Doe	1	12
	Jane Smith	2	13
	Alice Johnson	3	14
	Bob Brown	4	15
	Carol White	5	16
	David Lee	6	17
	Eva Green	7	18

Right Join:-

show databases ;

use ecommerce;

SELECT a.customer_name, a.order_id AS order1, b.order_id AS order2

FROM ecommerce_data a

RIGHT JOIN ecommerce_data b

ON a.customer_name = b.customer_name AND a.order_id <> b.order_id

LIMIT 20;

Output:

Result Grid			
Filter Rows:		Export:	Wrap Cell Content: Fetch rows:
	customer_name	order1	order2
	Carol White	16	5
	David Lee	17	6
	Eva Green	18	7
	Frank Harris	19	8
	Zoe Adams	39	9
	Yara King	38	10
	NULL	NULL	11

Inner Join

show databases ;

use ecommerce;

SELECT a.customer_name, a.order_id AS order1, b.order_id AS order2, a.product_name

FROM ecommerce_data a

INNER JOIN ecommerce_data b

ON a.customer_name = b.customer_name AND a.product_name = b.product_name

WHERE a.order_id <> b.order_id

LIMIT 8;

Output:-

	customer_name	order1	order2	product_name
▶	John Doe	12	1	Laptop
	Jane Smith	13	2	Smartphone
	Alice Johnson	14	3	Headphones
	Bob Brown	15	4	T-shirt
	Carol White	16	5	Shoes
	David Lee	17	6	Laptop
	Eva Green	18	7	Novel

Subquery with IN: Customers with multiple orders

show databases ;

use ecommerce;

SELECT order_id, customer_name, product_name

FROM ecommerce_data

WHERE customer_name IN (

SELECT customer_name

FROM ecommerce_data

GROUP BY customer_name

HAVING COUNT(*) > 1

)

LIMIT 8;

Output:-

	order_id	customer_name	product_name
▶	1	John Doe	Laptop
	2	Jane Smith	Smartphone
	3	Alice Johnson	Headphones
	4	Bob Brown	T-shirt
	5	Carol White	Shoes
	6	David Lee	Laptop
	7	Eva Green	Novel

d.Use aggregate functions (SUM, AVG)

SUM function

show databases ;

use ecommerce;

SELECT SUM(total_amount) AS total_sales

FROM ecommerce_data;

Output:-

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	total_sales			
▶	60421.00			

Average Function:-

show databases ;

use ecommerce;

SELECT AVG(total_amount) AS avg_order_value

FROM ecommerce_data;

Output:-

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	avg_order_value			
▶	220.514599			

Create a view for analysis

show databases ;

use ecommerce;

CREATE VIEW city_sales_analysis AS

SELECT

city,

COUNT(order_id) AS total_orders,

SUM(total_amount) AS total_revenue,

SUM(CASE WHEN status = 'Completed' THEN 1 ELSE 0 END) AS completed_orders

FROM ecommerce_data

GROUP BY city;

SELECT * FROM city_sales_analysis ORDER BY total_revenue DESC;

Output:-

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	city	total_orders	total_revenue	completed_orders
▶	Seattle	17	7249.00	15
	Los Angeles	22	5846.00	17
	Miami	29	5715.00	21
	Austin	15	5285.00	11
	Dallas	18	4728.00	7
	New York	22	4687.00	9
	San Francisco	16	4670.00	4670.00

Optimize queries with indexes

show databases ;

use ecommerce;

SELECT * FROM ecommerce_data

WHERE city = 'New York' AND status = 'Completed';

Output:-

Result Grid											
Filter Rows:											
Edit:											
Export/Import:											
Wrap Cell Content:											
order_id	customer_name	email	city	country	product_name	category	quantity	price	total_amount	order_date	status
1	John Doe	john.doe@example.com	New York	USA	Laptop	Electronics	1	800.00	800.00	2025-01-15 10:25:00	Completed
12	John Doe	john.doe@example.com	New York	USA	Laptop	Electronics	1	800.00	800.00	2025-01-15 10:25:00	Completed
65	Zara Khan	zara.khan@example.com	New York	USA	Novel	Books	1	18.00	18.00	2025-06-01 10:05:00	Completed
80	Owen Bell	owen.bell@example.com	New York	USA	Yoga Mat	Sports	2	22.00	44.00	2025-01-16 11:25:00	Completed
107	Zara Khan	zara.khan@example.com	New York	USA	Novel	Books	1	18.00	18.00	2025-06-01 10:05:00	Completed
122	Owen Bell	owen.bell@example.com	New York	USA	Yoga Mat	Sports	2	22.00	44.00	2025-01-16 11:25:00	Completed
147	Nathan Diaz	nathan.diaz@example.com	New York	USA	T-shirt	Clothing	3	23.00	69.00	2025-04-05 12:25:00	Completed