



Facultad de Ingeniería en Electricidad y Computación

**Módulo:**

Database SQL and Query Optimization

**Docente:**

Robert Moreno

**Actividad:**

Proyecto Facturación Informe

**Integrantes:**

José Toapanta

Jair Quintero

Pedro Briones

Julio Toala

**Grupo:**

5

Septiembre de 2025

Guayaquil - Ecuador

## 1. Objetivo del Proyecto

El objetivo de este proyecto es analizar la información de clientes, facturas y productos mediante consultas SQL que permitan obtener insights sobre las ventas y representar los resultados en visualizaciones claras en Excel.

### Parte 1: Conociendo la Data

#### ¿Cuántos registros existen en la tabla de clientes?

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```

1 * USE facturacion;
2
3 -- Parte 1
4
5 -- Pregunta 1
6 -- ¿Cuántos registros existen en la tabla de clientes?
7 * SELECT COUNT(*) AS 'Cantidad de Clientes'
8   FROM customers;
9
10 -- Pregunta 2
11 -- ¿Cuántas facturas hay registradas en total?
12 * SELECT COUNT(*) AS 'Cantidad de Facturas'
13   FROM invoices;
14
15 -- Pregunta 3
16 -- ¿Cuántos productos diferentes están disponibles?
17 * SELECT COUNT(*) AS 'Cantidad de Productos'
18   FROM products;
19

```

The 'Schemas' pane on the left shows the database structure. The 'Table: invoices' is selected, showing columns: invoice\_id (PK), customer\_id (FK), and invoice\_date. The 'Result Grid' shows the result of the first query:

Table: invoices
Cantidad de Clientes
4054

The 'Output' pane shows the execution results:

#	Time	Action	Message	Duration / Fetch
1	19:24:36	USE facturacion	0 row(s) affected	0.110 sec
2	19:24:36	SELECT COUNT(*) AS 'Cantidad de Clientes' FROM customers LIMIT 0, 1000	1 row(s) returned	0.054 sec / 0.000 sec

#### ¿Cuántas facturas hay registradas en total?

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following queries:

```

4
5 -- Pregunta 1
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11 -- ¿Cuántas facturas hay registradas en total?
12 * SELECT COUNT(*) AS 'Cantidad de Facturas'
13   FROM invoices;
14
15 -- Pregunta 3
16 -- ¿Cuántos productos diferentes están disponibles?
17 * SELECT COUNT(*) AS 'Cantidad de Productos'
18   FROM products;
19
20 -- Pregunta 4
21 -- Muestra la estructura de la tabla de detalles de factura (campos y tipos de datos).
22 * DESCRIBE invoice_items;

```

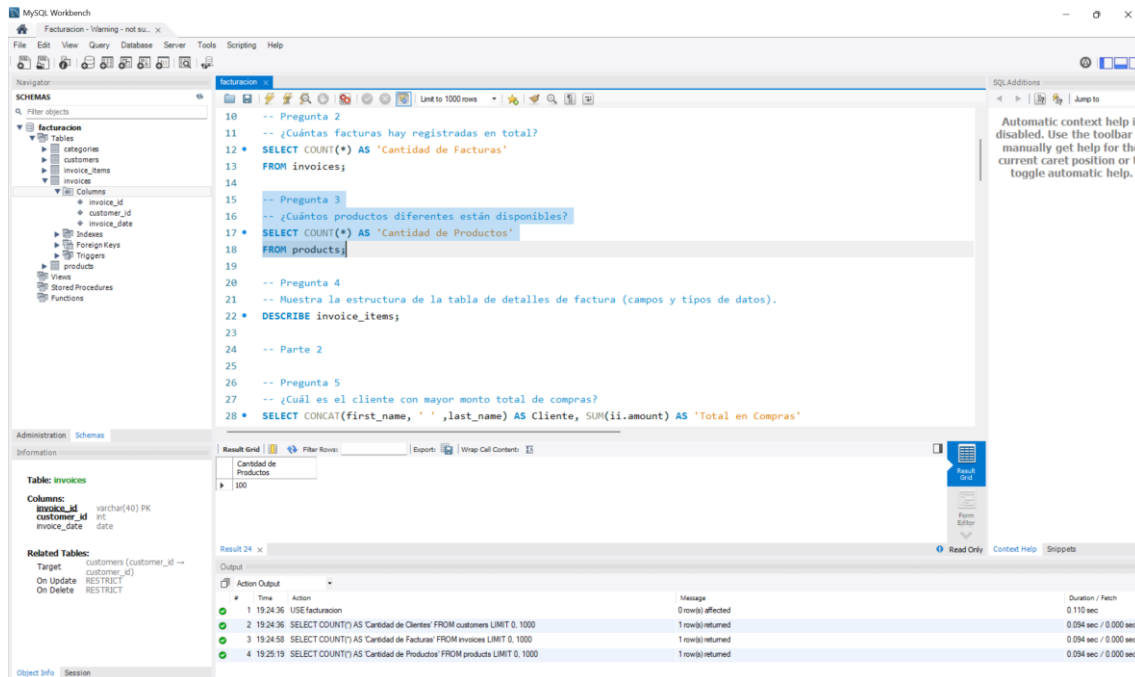
The 'Schemas' pane on the left shows the database structure. The 'Table: invoices' is selected, showing columns: invoice\_id (PK), customer\_id (FK), and invoice\_date. The 'Result Grid' shows the result of the second query:

Table: invoices
Cantidad de Facturas
4054

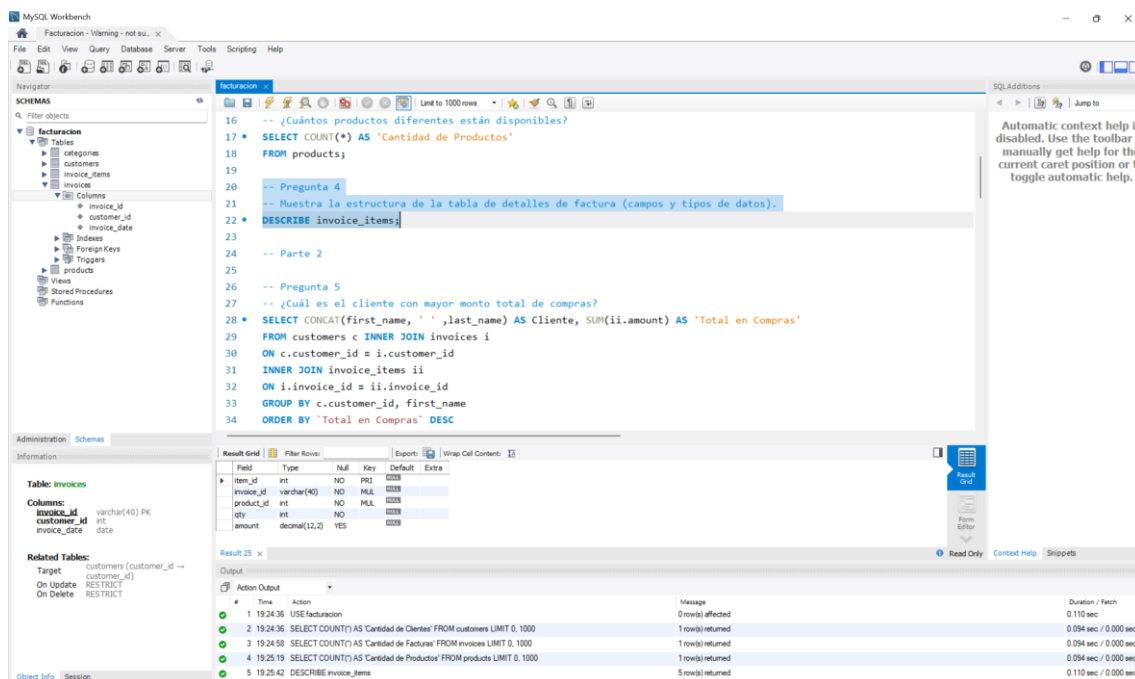
The 'Output' pane shows the execution results:

#	Time	Action	Message	Duration / Fetch
1	19:24:36	USE facturacion	0 row(s) affected	0.110 sec
2	19:24:36	SELECT COUNT(*) AS 'Cantidad de Clientes' FROM customers LIMIT 0, 1000	1 row(s) returned	0.054 sec / 0.000 sec
3	19:24:58	SELECT COUNT(*) AS 'Cantidad de Facturas' FROM invoices LIMIT 0, 1000	1 row(s) returned	0.054 sec / 0.000 sec

#### ¿Cuántos productos diferentes están disponibles?



**Muestra la estructura de la tabla de detalles de factura (campos y tipos de datos).**



## Parte 2: Consultas de análisis

**¿Cuál es el cliente con mayor monto total de compras?**

The screenshot shows the MySQL Workbench interface with a SQL query in the editor. The query is as follows:

```

22 * DESCRIBE invoice_items;
23
24 -- Parte 2
25
26 -- Pregunta 5
27 -- ¿Cuál es el cliente con mayor monto total de compras?
28 * SELECT CONCAT(first_name, ' ', last_name) AS Cliente, SUM(ii.amount) AS 'Total en Compras'
29 FROM customers c INNER JOIN invoices i
30 ON c.customer_id = i.customer_id
31 INNER JOIN invoice_items ii
32 ON i.invoice_id = ii.invoice_id
33 GROUP BY c.customer_id, first_name
34 ORDER BY 'Total en Compras' DESC
35 LIMIT 1;
36
37 -- Pregunta 6 --
38 -- ¿Muestre el top 5 de ciudades que han generado un mayor número de facturas? --
39 * SELECT c.city AS Ciudad, COUNT(DISTINCT i.invoice_id) AS 'Cantidad de Facturas'
40 FROM customers c INNER JOIN invoices i

```

The Results panel shows the output of the first query:

Cliente	Total en Compras
Ara Zimmerman Richard Cummings	341.83

The Action Output panel shows the execution of the queries:

#	Time	Action	Message	Duration / Fetch
2	19:24:36	SELECT COUNT(*) AS 'Cantidad de Clientes' FROM customers LIMIT 0, 1000	1 row(s) returned	0.094 sec / 0.000 sec
3	19:24:58	SELECT COUNT(*) AS 'Cantidad de Facturas' FROM invoices LIMIT 0, 1000	1 row(s) returned	0.094 sec / 0.000 sec
4	19:25:19	SELECT COUNT(*) AS 'Cantidad de Productos' FROM products LIMIT 0, 1000	1 row(s) returned	0.094 sec / 0.000 sec
5	19:25:42	DESCRIBE invoice_items	5 row(s) returned	0.110 sec / 0.000 sec
6	19:26:09	SELECT CONCAT(first_name, ' ', last_name) AS Cliente, SUM(ii.amount) AS 'Total en Compras' FROM customers c IN...	1 row(s) returned	0.219 sec / 0.000 sec

**¿Muestre el top 5 de ciudades que han generado un mayor número de facturas?**

The screenshot shows the MySQL Workbench interface with a SQL query in the editor. The query is as follows:

```

28 * SELECT CONCAT(first_name, ' ', last_name) AS Cliente, SUM(ii.amount) AS 'Total en Compras'
29 FROM customers c INNER JOIN invoices i
30 ON c.customer_id = i.customer_id
31 INNER JOIN invoice_items ii
32 ON i.invoice_id = ii.invoice_id
33 GROUP BY c.customer_id, first_name
34 ORDER BY 'Total en Compras' DESC
35 LIMIT 1;
36
37 -- Pregunta 6 --
38 -- ¿Muestre el top 5 de ciudades que han generado un mayor número de facturas?
39 * SELECT c.city AS Ciudad, COUNT(DISTINCT i.invoice_id) AS 'Cantidad de Facturas'
40 FROM customers c INNER JOIN invoices i
41 ON c.customer_id = i.customer_id
42 GROUP BY city
43 ORDER BY 'Cantidad de Facturas' DESC
44 LIMIT 5;
45
46 -- Pregunta 7

```

The Results panel shows the output of the second query:

Ciudad	Cantidad de Facturas
North Jason	6
South Michael	5
Lake Joseph	5
JenniferMouth	5
East Michael	4

The Action Output panel shows the execution of the queries:

#	Time	Action	Message	Duration / Fetch
3	19:24:58	SELECT COUNT(*) AS 'Cantidad de Facturas' FROM invoices LIMIT 0, 1000	1 row(s) returned	0.094 sec / 0.000 sec
4	19:25:19	SELECT COUNT(*) AS 'Cantidad de Productos' FROM products LIMIT 0, 1000	1 row(s) returned	0.094 sec / 0.000 sec
5	19:25:42	DESCRIBE invoice_items	5 row(s) returned	0.110 sec / 0.000 sec
6	19:26:09	SELECT CONCAT(first_name, ' ', last_name) AS Cliente, SUM(ii.amount) AS 'Total en Compras' FROM customers c IN...	1 row(s) returned	0.219 sec / 0.000 sec
7	19:26:46	SELECT c.city AS Ciudad, COUNT(DISTINCT i.invoice_id) AS 'Cantidad de Facturas' FROM customers c INNER JOI...	5 row(s) returned	0.125 sec / 0.000 sec

**¿Qué categoría de productos concentra el mayor volumen de ventas (en monto total)?**

The screenshot shows the MySQL Workbench interface. The main editor contains a SQL query with comments in Spanish. The query is as follows:

```

43 ORDER BY 'Cantidad de Facturas' DESC
44 LIMIT 5;
45
46 -- Pregunta 7
47 -- ¿Qué categoría de productos concentra el mayor volumen de ventas (en monto total)?
48 SELECT c.category_name AS Categoría, SUM(ii.amount) AS 'Volumen de Ventas'
49 FROM invoice_items ii INNER JOIN products p
50 ON ii.product_id = p.product_id
51 INNER JOIN categories c
52 ON p.category_id = c.category_id
53 GROUP BY c.category_id, category_name
54 ORDER BY 'Volumen de Ventas' DESC
55 LIMIT 1;
56
57 -- Pregunta 8
58 -- ¿Cuál es el producto más vendido por cantidad de unidades?
59 SELECT p.product_name AS Producto, SUM(ii.qty) AS 'Unidades Vendidas'
60 FROM invoice_items ii INNER JOIN products p
61 ON ii.product_id = p.product_id

```

The Results tab shows the following data:

Categoría	Volumen de Ventas
Home & Kitchen	7046.94

The Output tab shows the execution log with the following messages:

#	Time	Action	Message	Duration / Fetch
4	19:25:19	SELECT COUNT(*) AS 'Cantidad de Productos' FROM products LIMIT 0, 1000	1 row(s) returned	0.094 sec / 0.000 sec
5	19:25:42	DESCRIBE invoice_items	5 row(s) returned	0.110 sec / 0.000 sec
6	19:26:09	SELECT CONCAT(first_name, ' ' last_name) AS Cliente, SUM(ii.amount) AS 'Total en Compra' FROM customers c INNER JOIN invoice_items ii ON c.customer_id = ii.customer_id	1 row(s) returned	0.219 sec / 0.000 sec
7	19:26:46	SELECT c.city AS Ciudad, COUNT(DISTINCT invoice_id) AS 'Cantidad de Facturas' FROM customers c INNER JOIN invoices i ON c.customer_id = i.customer_id	5 row(s) returned	0.125 sec / 0.000 sec
8	19:27:10	SELECT c.category_name AS Categoría, SUM(ii.amount) AS 'Volumen de Ventas' FROM invoice_items ii INNER JOIN products p ON ii.product_id = p.product_id INNER JOIN categories c ON p.category_id = c.category_id	1 row(s) returned	0.110 sec / 0.000 sec

¿Cuál es el producto más vendido por cantidad de unidades?

The screenshot shows the MySQL Workbench interface. The main editor contains a SQL query with comments in Spanish. The query is as follows:

```

52 ON p.category_id = c.category_id
53 GROUP BY c.category_id, category_name
54 ORDER BY 'Volumen de Ventas' DESC
55 LIMIT 1;
56
57 -- Pregunta 8
58 -- ¿Cuál es el producto más vendido por cantidad de unidades?
59 SELECT p.product_name AS Producto, SUM(ii.qty) AS 'Unidades Vendidas'
60 FROM invoice_items ii INNER JOIN products p
61 ON ii.product_id = p.product_id
62 GROUP BY p.product_id, p.product_name
63 ORDER BY 'Unidades Vendidas' DESC
64 LIMIT 1;
65
66 -- Pregunta 9
67 -- ¿Cómo ha variado el número de facturas emitidas por año y mes?
68 SELECT YEAR(invoice_date) AS Año, MONTH(invoice_date) AS Mes, COUNT(DISTINCT invoice_id) AS 'Cantidad de Facturas'
69 FROM invoices
70 GROUP BY año, mes;

```

The Results tab shows the following data:

Producto	Unidades Vendidas
Memory Foam Pillow #118	438

The Output tab shows the execution log with the following messages:

#	Time	Action	Message	Duration / Fetch
5	19:25:42	DESCRIBE invoice_items	5 row(s) returned	0.110 sec / 0.000 sec
6	19:26:09	SELECT CONCAT(first_name, ' ' last_name) AS Cliente, SUM(ii.amount) AS 'Total en Compra' FROM customers c INNER JOIN invoice_items ii ON c.customer_id = ii.customer_id	1 row(s) returned	0.219 sec / 0.000 sec
7	19:26:46	SELECT c.city AS Ciudad, COUNT(DISTINCT invoice_id) AS 'Cantidad de Facturas' FROM customers c INNER JOIN invoices i ON c.customer_id = i.customer_id	5 row(s) returned	0.125 sec / 0.000 sec
8	19:27:10	SELECT c.category_name AS Categoría, SUM(ii.amount) AS 'Volumen de Ventas' FROM invoice_items ii INNER JOIN products p ON ii.product_id = p.product_id INNER JOIN categories c ON p.category_id = c.category_id	1 row(s) returned	0.110 sec / 0.000 sec
9	19:27:33	SELECT p.product_name AS Producto, SUM(ii.qty) AS 'Unidades Vendidas' FROM invoice_items ii INNER JOIN products p ON ii.product_id = p.product_id	1 row(s) returned	0.140 sec / 0.000 sec

**Facturacion - Vlaning - not su... x**

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Table: invoices

Columns:

invoice\_id varchar(40) PK

customer\_id int

invoice\_date date

Related Tables:

Target: customers (customer\_id → customer\_id)

On Update: RESTRICT

On Delete: RESTRICT

Object Info Session

facturacion

Limit to 1000 rows

61 ON ii.product\_id = p.product\_id

62 GROUP BY p.product\_id, p.product\_name

63 ORDER BY 'Unidades Vendidas' DESC

64 LIMIT 1;

65

66 -- Pregunta 9

67 -- ¿Cómo ha variado el número de facturas emitidas por año y mes?

68 SELECT YEAR(invoice\_date) AS Año, MONTH(invoice\_date) AS Mes, COUNT(DISTINCT invoice\_id) AS 'Cantidad de Facturas'

69 FROM invoices

70 GROUP BY año, mes;

71

72 -- Pregunta 10

73 -- ¿Cuántos clientes han comprado productos de más de una categoría diferente?

74 SELECT COUNT(t.customer\_id) AS 'Cantidad de Clientes'

75 FROM (SELECT c.customer\_id, COUNT(DISTINCT cc.category\_id) AS categorias\_distintas

76 FROM customers c INNER JOIN invoices i

77 ON c.customer\_id = i.customer\_id

78 INNER JOIN invoice\_items ii

79 ON i.invoice\_id = ii.invoice\_id

80 INNER JOIN products p

81 ON ii.product\_id = p.product\_id

82 INNER JOIN categories cc

83 ON p.category\_id = cc.category\_id

84 GROUP BY c.customer\_id

85 HAVING categorias\_distintas > 1) AS t;

86

87 -- Parte 3

88 -- PREGUNTAS PROPIAS

Result Grid

Filter Rows

Exports

Wrap Cell Contents

Table: invoices

Columns:

invoice\_id varchar(40) PK

customer\_id int

invoice\_date date

Related Tables:

Target: customers (customer\_id → customer\_id)

On Update: RESTRICT

On Delete: RESTRICT

Object Info Session

Output

Action Output

# Time Action Message Duration / Fetch

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7 19:26:46 SELECT c.city AS Ciudad, COUNT(DISTINCT invoice\_id) AS 'Cantidad de Facturas' FROM customers c INNER JOI... 5 row(s) returned 0.125 sec / 0.000 sec

8 19:27:10 SELECT c.category\_name AS Categoría, SUM(ii.amount) AS 'Volumen de Ventas' FROM invoice\_items i INNER JOI... 1 row(s) returned 0.110 sec / 0.000 sec

9 19:27:33 SELECT p.product\_name AS Producto, SUM(ii.amount) AS 'Unidades Vendidas' FROM invoice\_items i INNER JOI... 1 row(s) returned 0.140 sec / 0.000 sec

10 19:27:52 SELECT YEAR(invoice\_date) AS Año, MONTH(invoice\_date) AS Mes, COUNT(DISTINCT invoice\_id) AS 'Cantidad d... 269 row(s) returned 0.109 sec / 0.000 sec

**¿Cuántos clientes han comprado productos de más de una categoría diferente?**

**Facturacion - Vlaning - not su... x**

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Table: invoices

Columns:

invoice\_id varchar(40) PK

customer\_id int

invoice\_date date

Related Tables:

Target: customers (customer\_id → customer\_id)

On Update: RESTRICT

On Delete: RESTRICT

Object Info Session

facturacion

Limit to 1000 rows

70 GROUP BY año, mes;

71

72 -- Pregunta 10

73 -- ¿Cuántos clientes han comprado productos de más de una categoría diferente?

74 SELECT COUNT(t.customer\_id) AS 'Cantidad de Clientes'

75 FROM (SELECT c.customer\_id, COUNT(DISTINCT cc.category\_id) AS categorias\_distintas

76 FROM customers c INNER JOIN invoices i

77 ON c.customer\_id = i.customer\_id

78 INNER JOIN invoice\_items ii

79 ON i.invoice\_id = ii.invoice\_id

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82 INNER JOIN categories cc

83 ON p.category\_id = cc.category\_id

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88 -- PREGUNTAS PROPIAS

Result Grid

Filter Rows

Exports

Wrap Cell Contents

Table: invoices

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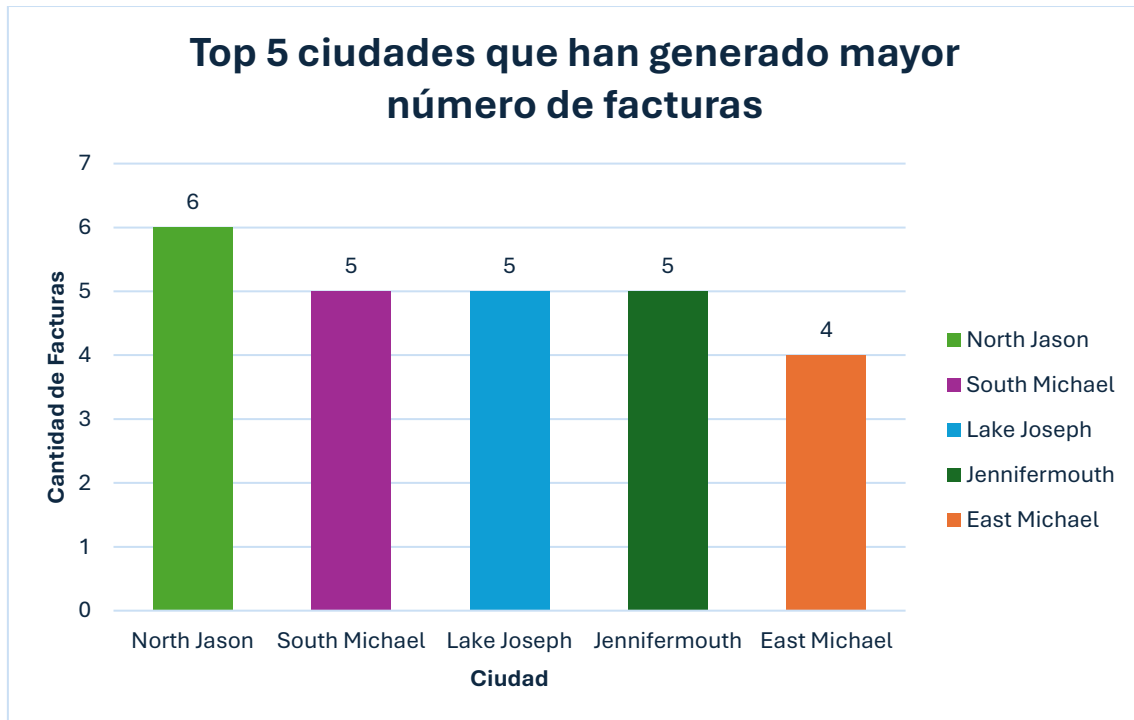
10 19:27:52 SELECT YEAR(invoice\_date) AS Año, MONTH(invoice\_date) AS Mes, COUNT(DISTINCT invoice\_id) AS 'Cantidad d... 269 row(s) returned 0.109 sec / 0.000 sec

11 19:29:28 SELECT COUNT(t.customer\_id) AS 'Cantidad de Clientes' FROM (SELECT c.customer\_id, COUNT(DISTINCT cc cate... 1 row(s) returned 0.156 sec / 0.000 sec

## Parte 3: Visualización en Excel

Escoja 1 de las preguntas de la Parte 2 y realiza una visualización en Excel que muestre claramente el resultado.

**¿Muestre el top 5 de ciudades que han generado un mayor número de facturas?**



**Formula 1 nueva pregunta propia sobre la base de datos (Por cada miembro), resuélvela con SQL y genere la visualización en Excel de al menos 2 de ellas.**

**¿Cuáles son los 3 días de la semana con el menor volumen de ventas?**

```

85  HAVING categorias_distintas > 1) AS t;
86
87  -- Parte 3
88  -- PREGUNTAS PROPIAS
89
90  -- ¿Cuáles son los 3 días de la semana con el menor volumen de ventas?
91  SELECT DATE_FORMAT(i.invoice_date, '%a') AS Día, SUM(ii.amount) AS 'Volumen de Ventas'
92  FROM invoice_items ii INNER JOIN invoices i
93  ON ii.invoice_id = i.invoice_id
94  GROUP BY Día
95  ORDER BY 'Volumen de Ventas' ASC
96  LIMIT 3;
97
98  -- ¿Cuál es la venta promedio por cada factura por mes y año en los últimos 5 años registrados?
99  WITH last_five_years AS (
100 SELECT DISTINCT YEAR(invoice_date) AS Año
101 FROM invoices
102 ORDER BY Año DESC
103 LIMIT 5

```

Día	Volumen de Ventas
Friday	47531.89
Tuesday	47008.35
Wednesday	46235.67

**¿Cuál es la venta promedio por cada factura por mes y año en los últimos 5 años registrados?**

MySQL Workbench

Facturacion - Winamp - not su... x

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Information

Table: invoices

Columns:

- invoice\_id varchar(40) PK
- customer\_id int
- invoice\_date date

Related Tables:

Target: customers (customer\_id → customer\_id) RESTRICT

On Update RESTRICT

On Delete RESTRICT

Object Info Session

facturacion - x

Limit to 1000 rows

```

97 -- ¿Cuál es la venta promedio por cada factura por mes y año en los últimos 5 años registrados?
98
99 WITH last_five_years AS (
100 SELECT DISTINCT YEAR(invoice_date) AS Año
101 FROM invoices
102 ORDER BY Año DESC
103 LIMIT 5
104 )
105
106 SELECT Año, Mes, "Promedio por Factura"
107 FROM (SELECT YEAR(invoice_date) AS Año, DATE_FORMAT(invoice_date, 'MM') AS Mes, ROUND(AVG(t.ventas),2) AS "Promedio por
108 FROM (SELECT invoice_id, SUM(amount) AS ventas
109 FROM invoice_items
110 GROUP BY invoice_id) AS t INNER JOIN invoices i
111 ON t.invoice_id = i.invoice_id
112 GROUP BY Año, Mes) t
113 WHERE Año IN (SELECT Año FROM last_five_years)
114 ORDER BY Año, Mes)
115

```

Result Grid

Año	Mes	Promedio por Factura
2018	April	56.75
2018	August	85.21
2018	December	112.72
2018	February	79.50
2018	January	81.61
2018	July	64.11

Output

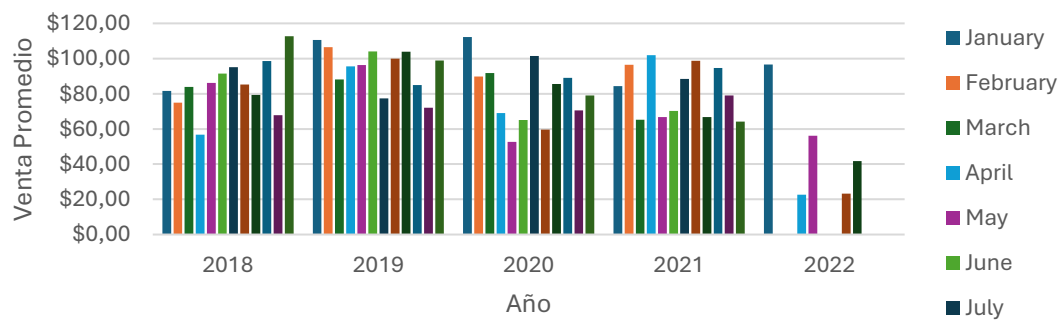
Action Output

#	Time	Action	Message	Duration / Fetch
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10	19:27:52	SELECT YEAR(invoice_date) AS Año, MONTH(invoice_date) AS Mes, COUNT(DISTINCT invoice_id) AS 'Cantidad d...	269 row(s) returned	0.109 sec / 0.000 sec
11	19:29:28	SELECT COUNT(c.customer_id) AS 'Cantidad de Clientes' FROM (SELECT c.customer_id, COUNT(DISTINCT cc.cate...	1 row(s) returned	0.156 sec / 0.000 sec
12	19:30:01	SELECT DATE_FORMAT(invoice_date, '%W') AS Día, SUM(i.amount) AS 'Volumen de Ventas' FROM invoice_items...	3 row(s) returned	0.219 sec / 0.000 sec
13	19:30:35	WITH last_five_years AS ( SELECT DISTINCT YEAR(invoice_date) AS Año FROM invoices ORDER BY Año DESC L...	53 row(s) returned	0.125 sec / 0.000 sec

SQL Additions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

## Venta promedio por cada factura por mes y año en los últimos 5 años registrados



¿Cuáles son las 5 ciudades con el mayor volumen de ventas?



MySQL Workbench

Facturacion - VMware - not su... x

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invoice\_date date

Related Tables:

Target: customers (customer\_id → customer\_id)

On Update: RESTRICT

On Delete: RESTRICT

Object Info Session

facturacion - x

Limit to 1000 rows

```

108 FROM (SELECT invoice_id, SUM(amount) AS ventas
109 FROM invoice_items
110 GROUP BY invoice_id) AS t INNER JOIN invoices i
111 ON t.invoice_id = i.invoice_id
112 GROUP BY Año, Mes) t
113 WHERE Año IN (SELECT Año FROM last_five_years)
114 ORDER BY Año, Mes)
115
116 -- ¿Cuáles son las 5 ciudades con el mayor volumen de ventas?
117 SELECT c.city AS Ciudad, SUM(ii.amount) AS 'Volumen de Ventas'
118 FROM customers c INNER JOIN invoices i
119 ON c.customer_id = i.customer_id
120 INNER JOIN invoice_items ii
121 ON i.invoice_id = ii.invoice_id
122 GROUP BY city
123 ORDER BY 'Volumen de Ventas' DESC
124 LIMIT 5;
125
126 -- ¿Qué porcentaje del total de ventas de la empresa representa cada categoría de productos?

```

Result Grid

City	Volumen de Ventas
Smithstad	645.33
Andersonstad	582.21
South Michael	514.17
Millerfort	493.20
Rodriguezberg	485.50

Result 34 x

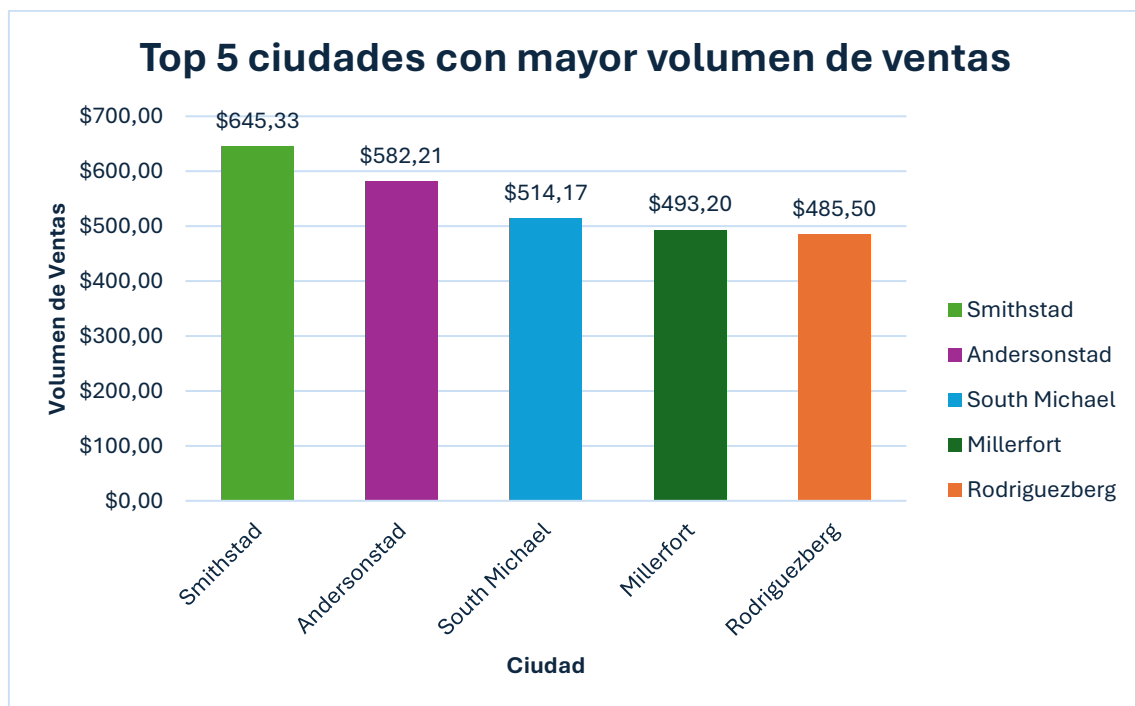
Output

Action Output

#	Time	Action	Message	Duration / Fetch
10	19:27:52	SELECT YEAR(invoice_date) AS Año, MONTH(invoice_date) AS Mes, COUNT(DISTINCT invoice_id) AS Cantidad d...	269 row(s) returned	0.109 sec / 0.000 sec
11	19:29:28	SELECT COUNT(*) customer_id AS 'Cantidad de Clientes' FROM (SELECT c.customer_id, COUNT(DISTINCT cc.cate...	1 row(s) returned	0.156 sec / 0.000 sec
12	19:30:01	SELECT DATE_FORMAT(invoice_date, '%Y') AS Dia, SUM(ii.amount) AS 'Volumen de Ventas' FROM invoice_items...	3 row(s) returned	0.219 sec / 0.000 sec
13	19:30:35	WITH last_five_years AS (SELECT DISTINCT YEAR(invoice_date) AS Año FROM invoices ORDER BY Año DESC L...	53 row(s) returned	0.125 sec / 0.000 sec
14	19:30:59	SELECT c.city AS Ciudad, SUM(ii.amount) AS 'Volumen de Ventas' FROM customers c INNER JOIN invoices i ON c.c...	5 row(s) returned	0.156 sec / 0.000 sec

SQL Additions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



**¿Qué porcentaje del total de ventas de la empresa representa cada categoría de productos?**

MySQL Workbench

Facturacion - VMware - not su... x

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Navigator

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facturacion

Tables

- categories
- customers
- invoice\_items
- invoices

Columns

- invoice\_id
- customer\_id
- invoice\_date

Indexes

Foreign Keys

Triggers

Views

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Functions

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Information

Table: invoices

Columns:

- invoice\_id varchar(40) PK
- customer\_id int
- invoice\_date date

Related Tables:

- customers (customer\_id → invoice\_id)
- On Update RESTRICT
- On Delete RESTRICT

Result Grid

Categoría	Total de Ventas	Porcentaje de Ventas
Home & Kitchen	70446.94	20.55
Sports & Outdoors	68750.54	20.06
Electronics	68186.01	19.89
Beauty	68181.83	19.89
Clothing	67194.77	19.60

Result 35 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
11	19:29:28	SELECT COUNT(*) AS 'Cantidad de Clientes' FROM (SELECT c.customer_id, COUNT(DISTINCT cc.category_id) AS 'Cantidad de Clientes' FROM customers c INNER JOIN categories cc ON c.category_id = cc.category_id)	1 row(s) returned	0.156 sec / 0.000 sec
12	19:30:01	SELECT DATE_FORMAT(invoice_date, '%Y-%m-%d') AS 'Fecha', SUM(amount) AS 'Total de Ventas' FROM invoices ORDER BY fecha DESC LIMIT 5	3 row(s) returned	0.219 sec / 0.000 sec
13	19:30:35	WITH last_five_years AS (SELECT DISTINCT YEAR(invoice_date) AS 'Año' FROM invoices ORDER BY año DESC LIMIT 5)	53 row(s) returned	0.125 sec / 0.000 sec
14	19:30:55	SELECT c.city AS 'Ciudad', SUM(amount) AS 'Volumen de Ventas' FROM customers c INNER JOIN invoices i ON c.customer_id = i.customer_id	5 row(s) returned	0.156 sec / 0.000 sec
15	19:31:41	SELECT c.category_name AS 'Categoría', SUM(amount) AS 'Total de Ventas' ROUND(SUM(amount) * 100.00 / (SELECT SUM(amount) FROM invoice_items)) AS 'Porcentaje de Ventas'	5 row(s) returned	0.125 sec / 0.000 sec

SQL Additions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

## Porcentaje total de ventas por categoría de producto

