

```
1 • create database e_commerce;  
2 -----  
3 •  create table Customers (  
4     customer_id int auto_increment primary key,  
5     `name` varchar(50),  
6     email varchar(50),  
7     mobile varchar(15)  
8 );  
9 •  create table Products (  
10    id int,  
11    `name` varchar(50) not null,  
12    `description` varchar(200),  
13    price decimal(10, 2) not null,  
14    category varchar(50)  
15 );  
16 -----
```

```
16 -----
17 • alter table Customers
18   modify `name` varchar(50) not null;
19 • alter table Customers
20   modify email varchar(50) not null;
21 • alter table Customers
22   add unique(email);
23 • alter table Customers
24   add age int;
25 • alter table Products
26   rename column id to product_id;
27 • alter table Products
28   modify product_id int auto_increment primary key;
29 • alter table products
30   modify column description text;
31 -----
```

```
31  -----
32 • `create table `Order` (
33     order_id int auto_increment primary key,
34     customer_id int,
35     product_id int,
36     quantity int not null,
37     order_date date not null,
38     `status` enum ('Pending', 'Success', 'Cancel'),
39     payment_method enum ('Credit', 'Debit', 'UPI'),
40     total_amount decimal(10, 2) not null,
41     foreign key (customer_id) references customers(customer_id)
42 );
43 -----
```

```
43 -----
44 • alter table `Order`
45 rename Orders;
46 • alter table Orders
47 alter `status` set default 'Pending';
48 • alter table Orders
49 modify column payment_method
50 enum ('Credit', 'Debit', 'UPI', 'COD');
51 • alter table Orders
52 add foreign key (product_id) references products(product_id);
53 -----
```

▼  **e_commerce**

▼  **Tables**

►  **customers**

►  **orders**

►  **products**

►  **Views**

►  **Stored Procedures**

►  **Functions**

►  **mvdatabase**

[Administration](#) [Schemas](#)

Information

Table: **customers**

Columns:

customer_id	int AI PK
name	varchar(50)
email	varchar(50)
mobile	varchar(15)
age	int

The screenshot shows a database structure in a management tool. At the top level is a database icon followed by the name **e_commerce**. Below it is a folder icon labeled **Tables**, which contains three entries: **customers**, **orders**, and **products**. The **products** entry is highlighted with a blue selection bar. Below the **Tables** folder are three more items: **Views**, **Stored Procedures**, and **Functions**. At the bottom of the tree view is a small icon followed by the text **mvdatabase**. Below the tree view are two tabs: **Administration** and **Schemas**, with **Schemas** being the active tab. A horizontal bar labeled **Information** spans the width of the interface.

Table: products

Columns:

<u>product_id</u>	int AI PK
name	varchar(50)
description	text
price	decimal(10,2)
category	varchar(50)

▼  e_commerce

▼  Tables

▶  customers

▶  orders

▶  products

 Views

 Stored Procedures

 Functions

▶  mvdatabase

Administration Schemas

Information

Table: **orders**

Columns:

order_id	int AI PK
customer_id	int
product_id	int
quantity	int
order_date	date
status	enum('Pending','Success','Cancel')
payment_method	enum('Credit','Debit','UPI','COD')
total_amount	decimal(10,2)

```
53 -----
54 • insert into Customers (name, email, mobile, age) values
55     ('John Doe', 'john@example.com', '9876543210', 30),
56     ('Jane Smith', 'jane@example.com', '9876543211', 25),
57     ('Alice Johnson', 'alice@example.com', '9876543212', 28),
58     ('Bob Brown', 'bob@example.com', '9876543213', 35),
59     ('Charlie Davis', 'charlie@example.com', '9876543214', 40),
60     ('Eve White', 'eve@example.com', '9876543215', 22),
61     ('Frank Green', 'frank@example.com', '9876543216', 32),
62     ('Grace Lee', 'grace@example.com', '9876543217', 26),
63     ('Henry King', 'henry@example.com', '9876543218', 33),
64     ('Isabel Scott', 'isabel@example.com', '9876543219', 27),
65     ('Jack Harris', 'jack@example.com', '9876543220', 29),
66     ('Kimberly Young', 'kimberly@example.com', '9876543221', 31),
67     ('Liam Turner', 'liam@example.com', '9876543222', 24),
68     ('Megan Wilson', 'megan@example.com', '9876543223', 36),
69     ('Nathan Moore', 'nathan@example.com', '9876543224', 37),
70     ('Olivia Taylor', 'olivia@example.com', '9876543225', 21),
71     ('Paul Adams', 'paul@example.com', '9876543226', 34),
72     ('Quinn Roberts', 'quinn@example.com', '9876543227', 38),
73     ('Rita Clark', 'rita@example.com', '9876543228', 39),
74     ('Sam Anderson', 'sam@example.com', '9876543229', 23),
75     ('Lucas Martinez', 'lucas@example.com', '9876543230', 28),
76     ('Sofia Gonzalez', 'sofia@example.com', '9876543231', 24);
77 • select * from customers;
```

```
78 • insert into Products (name, description, price, category) values
79     ('Smartphone A', 'High-end smartphone', 499.99, 'Electronics'),
80     ('Smartphone B', 'Budget smartphone', 199.99, 'Electronics'),
81     ('Laptop X', 'Gaming laptop', 1200.00, 'Electronics'),
82     ('Headphones Y', 'Noise-cancelling headphones', 150.00, 'Electronics'),
83     ('Washing Machine', 'Automatic washing machine', 299.99, 'Home Appliances'),
84     ('Fridge Model Z', 'Energy-efficient fridge', 699.99, 'Home Appliances'),
85     ('Microwave Oven', 'Convection microwave oven', 120.00, 'Home Appliances'),
86     ('Smartwatch', 'Fitness tracking smartwatch', 249.99, 'Electronics'),
87     ('TV 55" UHD', '55 inch Ultra HD TV', 799.99, 'Electronics'),
88     ('Tablet Model P', 'Android tablet', 249.00, 'Electronics'),
89     ('Blender X100', 'High-speed blender', 89.99, 'Kitchen'),
90     ('Toaster Model T', '4-slice toaster', 49.99, 'Kitchen'),
91     ('Air Conditioner', 'Portable air conditioner', 350.00, 'Home Appliances'),
92     ('Bluetooth Speaker', 'Portable wireless speaker', 100.00, 'Electronics'),
93     ('Camera SLR', 'Digital camera SLR', 599.99, 'Electronics'),
94     ('Refrigerator Mini', 'Mini fridge', 120.00, 'Home Appliances'),
95     ('Electric Kettle', 'Electric kettle 1.7L', 25.99, 'Kitchen'),
96     ('Guitar Acoustic', 'Acoustic guitar', 150.00, 'Music'),
97     ('Digital Watch', 'Digital sports watch', 80.00, 'Electronics'),
98     ('Gaming Mouse', 'RGB gaming mouse', 49.99, 'Electronics');
99 • select * from products;
```

```
100 • insert into Orders (customer_id, product_id, quantity, order_date, status, payment_method, total_amount) values  
101 (1, 1, 2, '2025-02-01', 'Success', 'Credit', 999.98),  
102 (2, 2, 1, '2025-02-02', 'Success', 'Debit', 199.99),  
103 (3, 3, 1, '2025-02-03', 'Pending', 'UPI', 1200.00),  
104 (4, 4, 2, '2025-02-04', 'Success', 'Credit', 300.00),  
105 (5, 5, 1, '2025-02-05', 'Success', 'Debit', 299.99),  
106 (6, 6, 1, '2025-02-06', 'Cancel', 'UPI', 699.99),  
107 (7, 7, 3, '2025-02-07', 'Success', 'COD', 360.00),  
108 (8, 8, 1, '2025-02-08', 'Pending', 'Credit', 249.99),  
109 (9, 9, 1, '2025-02-09', 'Success', 'Debit', 799.99),  
110 (10, 10, 2, '2025-02-10', 'Success', 'COD', 498.00),  
111 (11, 11, 1, '2025-02-11', 'Pending', 'Credit', 89.99),  
112 (12, 12, 1, '2025-02-12', 'Success', 'Debit', 49.99),  
113 (13, 13, 1, '2025-02-13', 'Success', 'UPI', 350.00),  
114 (14, 14, 1, '2025-02-14', 'Success', 'Credit', 100.00),  
115 (15, 15, 1, '2025-02-15', 'Pending', 'Debit', 599.99),  
116 (16, 16, 2, '2025-02-16', 'Success', 'UPI', 200.00),  
117 (17, 17, 1, '2025-02-17', 'Pending', 'COD', 25.99),  
118 (18, 18, 1, '2025-02-18', 'Success', 'Debit', 150.00),  
119 (19, 19, 1, '2025-02-19', 'Success', 'UPI', 150.00),  
120 (20, 20, 1, '2025-02-20', 'Success', 'Credit', 49.99);  
121 • select * from orders;
```

```
122 • insert into Products (name, description, price, category) values
123     ('Smartphone C', 'Mid-range smartphone', 349.99, 'Electronics'),
124     ('Laptop Y', 'Ultrabook for professionals', 999.99, 'Electronics'),
125     ('Blender X200', 'Professional-grade blender', 149.99, 'Kitchen'),
126     ('Microwave Deluxe', 'High-performance microwave', 199.99, 'Home Appliances'),
127     ('Gaming Chair', 'Ergonomic gaming chair', 249.99, 'Furniture'),
128     ('Smartphone D', 'Affordable smartphone', 399.99, 'Electronics'),
129     ('Wireless Earbuds', 'Bluetooth earbuds', 89.99, 'Electronics'),
130     ('Laptop Z', 'Premium gaming laptop', 2500.00, 'Electronics'),
131     ('4K TV', 'Ultra HD TV with HDR', 1200.00, 'Electronics'),
132     ('Electric Fan', 'Portable electric fan', 30.00, 'Home Appliances'),
133     ('Plastic Bottle', 'Reusable plastic bottle', 10.00, 'Kitchen'),
134     ('Electric Grill', 'Non-stick electric grill', 59.99, 'Kitchen'),
135     ('Reading Lamp', 'LED reading lamp', 19.99, 'Furniture');
136 • insert into Customers (name, email, mobile, age) values
137     ('John Black', 'johnblack@example.com', '9876543232', 29),
138     ('Emily White', 'emilywhite@example.com', '9876543233', 27);
139 • insert into Orders (customer_id, product_id, quantity, order_date, status, payment_method, total_amount) values
140     (1, 5, 1, '2025-02-17', 'Success', 'Debit', 299.99),
141     (2, 6, 2, '2025-02-18', 'Pending', 'UPI', 1399.98),
142     (3, 7, 1, '2025-02-19', 'Success', 'Credit', 249.99);
143 -----
```

	customer_id	name	email	mobile	age
▶	1	John Doe	john@example.com	9876543210	30
	2	Jane Smith	jane@example.com	9876543211	25
	3	Alice Johnson	alice@example.com	9876543212	28
	4	Bob Brown	bob@example.com	9876543213	35
	5	Charlie Davis	charlie@example.com	9876543214	40
	6	Eve White	eve@example.com	9876543215	22
	7	Frank Green	frank@example.com	9876543216	32
	8	Grace Lee	grace@example.com	9876543217	26
	9	Henry King	henry@example.com	9876543218	33
	10	Isabel Scott	isabel@example.com	9876543219	27
	11	Jack Harris	jack@example.com	9876543220	29
	12	Kimberly Young	kimberly@example.com	9876543221	31

13	Liam Turner	liam@example.com	9876543222	24	
14	Megan Wilson	megan@example.com	9876543223	36	
15	Nathan Moore	nathan@example.com	9876543224	37	
16	Olivia Taylor	olivia@example.com	9876543225	21	
17	Paul Adams	paul@example.com	9876543226	34	
18	Quinn Roberts	quinn@example.com	9876543227	38	
19	Rita Clark	rita@example.com	9876543228	39	
20	Sam Anderson	sam@example.com	9876543229	23	
21	Lucas Martinez	lucas@example.com	9876543230	28	
22	Sofia Gonzalez	sofia@example.com	9876543231	24	
23	John Black	johnblack@example....	9876543232	29	
24	Emily White	emilywhite@example...	9876543233	27	
•	NULL	NULL	NULL	NULL	NULL

	product_id	name	description	price	category
▶	1	Smartphone A	High-end smartphone	499.99	Electronics
	2	Smartphone B	Budget smartphone	199.99	Electronics
	3	Laptop X	Gaming laptop	1200.00	Electronics
	4	Headphones Y	Noise-cancelling headphones	150.00	Electronics
	5	Washing Machine	Automatic washing machine	299.99	Home Appliances
	6	Fridge Model Z	Energy-efficient fridge	699.99	Home Appliances
	7	Microwave Oven	Convection microwave oven	120.00	Home Appliances
	8	Smartwatch	Fitness tracking smartwatch	249.99	Electronics
	9	TV 55" UHD	55 inch Ultra HD TV	799.99	Electronics
	10	Tablet Model P	Android tablet	249.00	Electronics
	11	Blender X100	High-speed blender	89.99	Kitchen
	12	Toaster Model T	4-slice toaster	49.99	Kitchen
	13	Air Conditioner	Portable air conditioner	350.00	Home Appliances
	14	Bluetooth Speaker	Portable wireless speaker	100.00	Electronics
	15	Camera SLR	Digital camera SLR	599.99	Electronics
	16	Refrigerator Mini	Mini fridge	120.00	Home Appliances

ID	Product Name	Description	Price	Category
17	Electric Kettle	Electric kettle 1.7L	25.99	Kitchen
18	Guitar Acoustic	Acoustic guitar	150.00	Music
19	Digital Watch	Digital sports watch	80.00	Electronics
20	Gaming Mouse	RGB gaming mouse	49.99	Electronics
21	Smartphone C	Mid-range smartphone	349.99	Electronics
22	Laptop Y	Ultrabook for professionals	999.99	Electronics
23	Blender X200	Professional-grade blender	149.99	Kitchen
24	Microwave Deluxe	High-performance microwave	199.99	Home Appliances
25	Gaming Chair	Ergonomic gaming chair	249.99	Furniture
26	Smartphone D	Affordable smartphone	399.99	Electronics
27	Wireless Earbuds	Bluetooth earbuds	89.99	Electronics
28	Laptop Z	Premium gaming laptop	2500.00	Electronics
29	4K TV	Ultra HD TV with HDR	1200.00	Electronics
30	Electric Fan	Portable electric fan	30.00	Home Appliances
31	Plastic Bottle	Reusable plastic bottle	10.00	Kitchen
32	Electric Grill	Non-stick electric grill	59.99	Kitchen
33	Reading Lamp	LED reading lamp	19.99	Furniture
*	NUL	NUL	NUL	NUL

Global Product Sales Performance - Q1 2024								
Order ID	Customer Details		Product & Quantity		Order & Status		Financials	
	Customer ID	Customer Name	Product ID	Quantity	Order Date	Status	Payment Method	Total Amount
1	1	John Doe	1	2	2025-02-01	Success	Credit	999.98
2	2	Jane Smith	2	1	2025-02-02	Success	Debit	199.99
3	3	Mike Johnson	3	1	2025-02-03	Pending	UPI	1200.00
4	4	Sarah Davis	4	2	2025-02-04	Success	Credit	300.00
5	5	David Wilson	5	1	2025-02-05	Success	Debit	299.99
6	6	Amy Green	6	1	2025-02-06	Cancel	UPI	699.99
7	7	Chris Brown	7	3	2025-02-07	Success	COD	360.00
8	8	Eve White	8	1	2025-02-08	Pending	Credit	249.99
9	9	Frank Black	9	1	2025-02-09	Success	Debit	799.99
10	10	Grace Grey	10	2	2025-02-10	Success	COD	498.00
11	11	Samuel Purple	11	1	2025-02-11	Pending	Credit	89.99


```
.44 • select category, count(product_id) as product_count  
.45   from products  
.46   group by category;
```

	category	product_count
▶	Electronics	17
	Home Appliances	7
	Kitchen	6
	Music	1
	Furniture	2

```
.47 • select *
.48   from products
.49   where category='Electronics'
.50   and price between 50 and 500
.51   and name like '%a%';
```

	product_id	name	description	price	category
▶	1	Smartphone A	High-end smartphone	499.99	Electronics
	2	Smartphone B	Budget smartphone	199.99	Electronics
	4	Headphones Y	Noise-cancelling headphones	150.00	Electronics
	8	Smartwatch	Fitness tracking smartwatch	249.99	Electronics
	10	Tablet Model P	Android tablet	249.00	Electronics
	14	Bluetooth Speaker	Portable wireless speaker	100.00	Electronics
	19	Digital Watch	Digital sports watch	80.00	Electronics
	21	Smartphone C	Mid-range smartphone	349.99	Electronics
	26	Smartphone D	Affordable smartphone	399.99	Electronics
	27	Wireless Earbuds	Bluetooth earbuds	89.99	Electronics
*	NULL	NULL	NULL	NULL	NULL

```
.52 • select *
.53   from products
.54   where category = 'Electronics'
.55   order by price desc
.56   limit 5 offset 2;
```

	product_id	name	description	price	category
▶	29	4K TV	Ultra HD TV with HDR	1200.00	Electronics
	22	Laptop Y	Ultrabook for professionals	999.99	Electronics
	9	TV 55" UHD	55 inch Ultra HD TV	799.99	Electronics
	15	Camera SLR	Digital camera SLR	599.99	Electronics
*	1	Smartphone A	High-end smartphone	499.99	Electronics
	NULL	NULL	NULL	NULL	NULL

```
.57 • select *
.58   from customers
.59 where customer_id not in (select distinct order_id from orders);
```

	customer_id	name	email	mobile	age
▶	24	Emily White	emilywhite@example.com	9876543233	27
*	NUL	NUL	NUL	NUL	NUL

```
.60 • select customer_id, avg(total_amount)
.61   from orders
.62   group by customer_id;
```

	customer_id	avg(total_amount)
▶	1	649.985000
	2	799.985000
	3	724.995000
	4	300.000000
	5	299.990000
	6	699.990000
	7	360.000000
	8	249.990000
	9	799.990000
	10	498.000000
	11	89.990000
	12	49.990000
	13	350.000000
	14	100.000000
	15	599.990000
	16	200.000000
	17	25.990000
	18	150.000000
	19	150.000000
	20	49.990000

```
.63 • select *
.64   from products
.65 where price < (select avg(price) from products);
```

	product_id	name	description	price	category
▶	2	Smartphone B	Budget smartphone	199.99	Electronics
	4	Headphones Y	Noise-cancelling headphones	150.00	Electronics
	5	Washing Machine	Automatic washing machine	299.99	Home Appliances
	7	Microwave Oven	Convection microwave oven	120.00	Home Appliances
	8	Smartwatch	Fitness tracking smartwatch	249.99	Electronics
	10	Tablet Model P	Android tablet	249.00	Electronics
	11	Blender X100	High-speed blender	89.99	Kitchen
	12	Toaster Model T	4-slice toaster	49.99	Kitchen
	13	Air Conditioner	Portable air conditioner	350.00	Home Appliances
	14	Bluetooth Speaker	Portable wireless speaker	100.00	Electronics
	16	Refrigerator Mini	Mini fridge	120.00	Home Appliances
	17	Electric Kettle	Electric kettle 1.7L	25.99	Kitchen

ID	Name	Description	Price	Category
18	Guitar Acoustic	Acoustic guitar	150.00	Music
19	Digital Watch	Digital sports watch	80.00	Electronics
20	Gaming Mouse	RGB gaming mouse	49.99	Electronics
21	Smartphone C	Mid-range smartphone	349.99	Electronics
23	Blender X200	Professional-grade blender	149.99	Kitchen
24	Microwave Deluxe	High-performance microwave	199.99	Home Appliances
25	Gaming Chair	Ergonomic gaming chair	249.99	Furniture
27	Wireless Earbuds	Bluetooth earbuds	89.99	Electronics
30	Electric Fan	Portable electric fan	30.00	Home Appliances
31	Plastic Bottle	Reusable plastic bottle	10.00	Kitchen
32	Electric Grill	Non-stick electric grill	59.99	Kitchen
33	Reading Lamp	LED reading lamp	19.99	Furniture
*	NULL	NULL	NULL	NULL

```
.66 • select customer_id, sum(quantity) as total_products_ordered  
.67   from orders  
.68   group by customer_id;
```

	customer_id	total_products_ordered
▶	1	3
	2	3
	3	2
	4	2
	5	1
	6	1
	7	3
	8	1
	9	1
	10	2
	11	1
	12	1
	13	1
	14	1
	15	1
	16	2
	17	1
	18	1
	19	1
	20	1

```
.69 • select o.order_id, c.`name` customer_name, p.`name` product_name  
.70   from orders o  
.71   join customers c on o.customer_id=c.customer_id  
.72   join products p on o.product_id=p.product_id;
```

	order_id	customer_name	product_name
▶	1	John Doe	Smartphone A
	2	Jane Smith	Smartphone B
	3	Alice Johnson	Laptop X
	4	Bob Brown	Headphones Y
	5	Charlie Davis	Washing Machine
	6	Eve White	Fridge Model Z
	7	Frank Green	Microwave Oven
	8	Grace Lee	Smartwatch
	9	Henry King	TV 55" UHD
	10	Isabel Scott	Tablet Model P
	11	Jack Harris	Blender X100

	12	Kimberly Young	Toaster Model T
	13	Liam Turner	Air Conditioner
	14	Megan Wilson	Bluetooth Speaker
	15	Nathan Moore	Camera SLR
	16	Olivia Taylor	Refrigerator Mini
	17	Paul Adams	Electric Kettle
	18	Quinn Roberts	Guitar Acoustic
	19	Rita Clark	Digital Watch
	20	Sam Anderson	Gaming Mouse
	21	John Doe	Washing Machine
	22	Jane Smith	Fridge Model Z
	23	Alice Johnson	Microwave Oven

```
.73 • select *
.74   from products
.75 where product_id not in (select distinct product_id from orders);
```

	product_id	name	description	price	category
▶	21	Smartphone C	Mid-range smartphone	349.99	Electronics
	22	Laptop Y	Ultrabook for professionals	999.99	Electronics
	23	Blender X200	Professional-grade blender	149.99	Kitchen
	24	Microwave Deluxe	High-performance microwave	199.99	Home Appliances
	25	Gaming Chair	Ergonomic gaming chair	249.99	Furniture
	26	Smartphone D	Affordable smartphone	399.99	Electronics
	27	Wireless Earbuds	Bluetooth earbuds	89.99	Electronics
	28	Laptop Z	Premium gaming laptop	2500.00	Electronics
	29	4K TV	Ultra HD TV with HDR	1200.00	Electronics
	30	Electric Fan	Portable electric fan	30.00	Home Appliances
	31	Plastic Bottle	Reusable plastic bottle	10.00	Kitchen
	32	Electric Grill	Non-stick electric grill	59.99	Kitchen
	33	Reading Lamp	LED reading lamp	19.99	Furniture
*	NULL	NULL	NULL	NULL	NULL