SQL Assignment -1

1. **Create Database e_commerce**

   create database e_commerce;

   use e_commerce;

✓	1 16:55:01 create database e_commerce	1 row(s) affected		0.000 sec
✓	2 16:55:06 use e_commerce	0 row(s) affected		0.000 sec

2. **Create following Tables:**

Cutomers Table:

   create table Customers(

   customer_id int auto_increment primary key,

   name varchar(50),

   email varchar(50),

   mobile varchar(15)

   );

Products Table:

   create table Products(

   id int,

   name varchar(50) not null,

   description varchar(200),

   price decimal(10, 2) not null,

   category varchar(50)

   );

✓	3 17:02:04 create table Customers(customer_id int auto_increment primary key, name varchar(50), email varchar(50), mobile varchar(15))	0 row(s) affected	0.109 sec
✓	4 17:03:32 create table Products(id int, name varchar(50) not null, description varchar(200), price decimal(10, 2) not null, category varchar(50))	0 row(s) affected	0.031 sec

3. **Modify Tables(using Alter keyword):**

a. **Add not null on name and email in the Customers table**

   Alter table Customers

   modify name varchar(50) not null,

   modify email varchar(50) not null;

b. **Add unique key on email in the Customers table**

Alter table Customers

add constraint unique(email);

c. **Add column age in the Customers table**

Alter table Customers

add column age int;

d. **Change column name from id to product_id in the Products table**

Alter table products

change id product_id int;

e. **Add primary key and auto increment on product_id in the Products table**

Alter table Products

modify product_id int auto_increment primary key;

f. **Change datatype of description from varchar to text in the Products table**

Alter table Products

modify description text;

✓	5 17:10:43 Alter table Customers modify name varchar(50) not null, modify email varchar(50) not null	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.094 sec
✓	6 17:17:17 Alter table Customers add constraint unique(email)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec
✓	7 17:18:28 Alter table Customers add column age int	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec
✓	8 17:21:28 Alter table products change id product_id int	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec
✓	9 17:21:48 Alter table Products modify product_id int auto_increment primary key	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.093 sec
✓	10 17:21:56 Alter table Products modify description text	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec

4. **Create table Order:**

create table oders (

    order_id int auto_increment primary key,

    customer_id int,

    product_id int,

    quantity int not null,

    order_date date not null,

    status enum('pending', 'success', 'cancel'),

    payment_method enum('credit', 'debit', 'upi'),

total_amount decimal(10,2) not null,

foreign key (customer_id) references customers(customer_id)

);

5.   Modify Orders Table(using Alter keyword):

a.   Change table name Order -> Orders

Alter table oders

rename to orders;

b.   Set default value pending in status.

Alter table orders

modify status enum('pending', 'success', 'cancel') default 'pending';

c.   Modify payment_method ENUM to add one more value: 'COD'
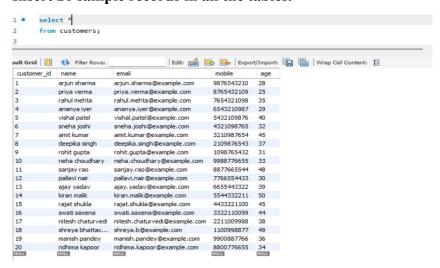
Alter table orders

modify payment_method enum('credit', 'debit', 'upi', 'cod');

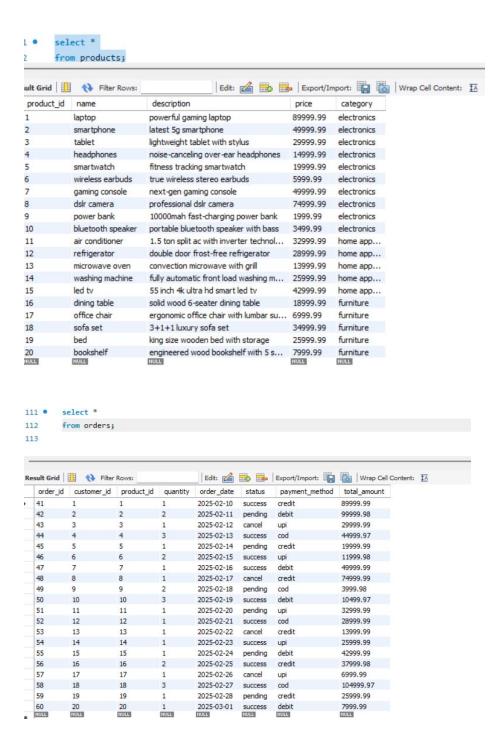**d.   Make product id as foreign key**

Alter table orders

add constraint fk_orders_product foreign key (product_id) references products(product_id);

✓	13	17:46:56	create table oders (order_id int auto_increment primary key, customer_id int, product_id int, quantity int not null, order_...	0 row(s) affected	0.046 sec
✓	14	17:47:23	Alter table oders rename to orders	0 row(s) affected	0.031 sec
✓	15	17:47:29	Alter table orders modify status enum('pending', 'success', 'cancel') default 'pending'	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec
✓	16	17:47:36	Alter table orders modify payment_method enum('credit', 'debit', 'upi', 'cod')	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.015 sec
✓	17	17:47:57	Alter table orders add constraint fk_orders_product foreign key (product_id) references products(product_id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.109 sec

6.   Insert 20 sample records in all the tables.

```
1 •   select *
2     from customers;
3
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

customer_id	name	email	mobile	age
1	arjun sharma	arjun.sharma@example.com	9876543210	28
2	priya verma	priya.verma@example.com	8765432109	25
3	rahul mehta	rahul.mehta@example.com	7654321098	35
4	ananya iyer	ananya.iyer@example.com	6543210987	29
5	vishal patel	vishal.patel@example.com	5432109876	40
6	sneha joshi	sneha.joshi@example.com	4321098765	32
7	amit kumar	amit.kumar@example.com	3210987654	45
8	deepika singh	deepika.singh@example.com	2109876543	37
9	rohit gupta	rohit.gupta@example.com	1098765432	31
10	neha choudhary	neha.choudhary@example.com	9988776655	33
11	sanjay rao	sanjay.rao@example.com	8877665544	48
12	pallavi nair	pallavi.nair@example.com	7766554433	30
13	ajay yadav	ajay.yadav@example.com	6655443322	39
14	kiran malik	kiran.malik@example.com	5544332211	50
15	rajat shukla	rajat.shukla@example.com	4433221100	45
16	swati saxena	swati.saxena@example.com	3322110099	44
17	nitesh chaturvedi	nitesh.chaturvedi@example.com	2211009988	38
18	shreya bhattac...	shreya.b@example.com	1100998877	49
19	manish pandey	manish.pandey@example.com	9900887766	36
20	ridhima kapoor	ridhima.kapoor@example.com	8800776655	34
NULL	NULL	NULL	NULL	NULL

```
1 •    select *
2      from products;
```


product_id	name	description	price	category
1	laptop	powerful gaming laptop	89999.99	electronics
2	smartphone	latest 5g smartphone	49999.99	electronics
3	tablet	lightweight tablet with stylus	29999.99	electronics
4	headphones	noise-canceling over-ear headphones	14999.99	electronics
5	smartwatch	fitness tracking smartwatch	19999.99	electronics
6	wireless earbuds	true wireless stereo earbuds	5999.99	electronics
7	gaming console	next-gen gaming console	49999.99	electronics
8	dslr camera	professional dslr camera	74999.99	electronics
9	power bank	10000mah fast-charging power bank	1999.99	electronics
10	bluetooth speaker	portable bluetooth speaker with bass	3499.99	electronics
11	air conditioner	1.5 ton split ac with inverter technol...	32999.99	home app...
12	refrigerator	double door frost-free refrigerator	28999.99	home app...
13	microwave oven	convection microwave with grill	13999.99	home app...
14	washing machine	fully automatic front load washing m...	25999.99	home app...
15	led tv	55 inch 4k ultra hd smart led tv	42999.99	home app...
16	dining table	solid wood 6-seater dining table	18999.99	furniture
17	office chair	ergonomic office chair with lumbar su...	6999.99	furniture
18	sofa set	3+1+1 luxury sofa set	34999.99	furniture
19	bed	king size wooden bed with storage	25999.99	furniture
20	bookshelf	engineered wood bookshelf with 5 s...	7999.99	furniture
NULL	NULL	NULL	NULL	NULL

```
111 •    select *
112      from orders;
113
```

order_id	customer_id	product_id	quantity	order_date	status	payment_method	total_amount
41	1	1	1	2025-02-10	success	credit	89999.99
42	2	2	2	2025-02-11	pending	debit	99999.98
43	3	3	1	2025-02-12	cancel	upi	29999.99
44	4	4	3	2025-02-13	success	cod	44999.97
45	5	5	1	2025-02-14	pending	credit	19999.99
46	6	6	2	2025-02-15	success	upi	11999.98
47	7	7	1	2025-02-16	success	debit	49999.99
48	8	8	1	2025-02-17	cancel	credit	74999.99
49	9	9	2	2025-02-18	pending	cod	3999.98
50	10	10	3	2025-02-19	success	debit	10499.97
51	11	11	1	2025-02-20	pending	upi	32999.99
52	12	12	1	2025-02-21	success	cod	28999.99
53	13	13	1	2025-02-22	cancel	credit	13999.99
54	14	14	1	2025-02-23	success	upi	25999.99
55	15	15	1	2025-02-24	pending	debit	42999.99
56	16	16	2	2025-02-25	success	credit	37999.98
57	17	17	1	2025-02-26	cancel	upi	6999.99
58	18	18	3	2025-02-27	success	cod	104999.97
59	19	19	1	2025-02-28	pending	credit	25999.99
60	20	20	1	2025-03-01	success	debit	7999.99
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

7. Perform following queries:

a. Count the number of products as product_count in each category.

select category, count(*) as product_count

from products

group by category;

category	product_count
electronics	10
home appliances	5
furniture	5

b.   **Retrieve all products that belong to the 'Electronics' category, have a price between $50 and $500, and whose name contains the letter 'a'.**

select * from products

where category = 'electronics'

and price between 50 and 500

and name like '%a%';

product_id	name	description	price	category
NULL	NULL	NULL	NULL	NULL

c.   **Get the top 5 most expensive products in the 'Electronics' category, skipping the first 2.**

select * from products

where category = 'electronics'

order by price desc

limit 5 offset 2;

product_id	name	description	price	category
2	smartphone	latest 5g smartphone	49999.99	electronics
7	gaming console	next-gen gaming console	49999.99	electronics
3	tablet	lightweight tablet with stylus	29999.99	electronics
5	smartwatch	fitness tracking smartwatch	19999.99	electronics
4	headphones	noise-canceling over-ear headphones	14999.99	electronics

d.   **Retrieve customers who have not placed any orders.**

select * from customers

where customer_id not in (select distinct customer_id from orders);

customer_id	name	email	mobile	age
NULL	NULL	NULL	NULL	NULL

e.   **Find the average total amount spent by each customer.**

select c.customer_id, c.name, avg(o.total_amount) as avg_spent

from customers c

left join orders o on c.customer_id = o.customer_id

group by c.customer_id, c.name;

customer_id	name	avg_spent
1	arjun sharma	89999.990000
2	priya verma	99999.980000
3	rahul mehta	29999.990000
4	ananya iyer	44999.970000
5	vishal patel	19999.990000
6	sneha joshi	11999.980000
7	amit kumar	49999.990000
8	deepika singh	74999.990000
9	rohit gupta	3999.980000
10	neha choudhary	10499.970000
11	sanjay rao	32999.990000
12	pallavi nair	28999.990000
13	ajay yadav	13999.990000
14	kiran malik	25999.990000
15	rajat shukla	42999.990000
16	swati saxena	37999.980000
17	nitesh chaturvedi	6999.990000
18	shreya bhattac...	104999.970000
19	manish pandey	25999.990000
20	ridhima kapoor	7999.990000

f. **Get the products that have a price less than the average price of all products.**

select * from products

where price < (select avg(price) from products);

product_id	name	description	price	category
4	headphones	noise-canceling over-ear headphones	14999.99	electronics
5	smartwatch	fitness tracking smartwatch	19999.99	electronics
6	wireless earbuds	true wireless stereo earbuds	5999.99	electronics
9	power bank	10000mah fast-charging power bank	1999.99	electronics
10	bluetooth speaker	portable bluetooth speaker with bass	3499.99	electronics
12	refrigerator	double door frost-free refrigerator	28999.99	home appliances
13	microwave oven	convection microwave with grill	13999.99	home appliances
14	washing machine	fully automatic front load washing machine	25999.99	home appliances
16	dining table	solid wood 6-seater dining table	18999.99	furniture
17	office chair	ergonomic office chair with lumbar support	6999.99	furniture
19	bed	king size wooden bed with storage	25999.99	furniture
20	bookshelf	engineered wood bookshelf with 5 shelves	7999.99	furniture

g. **Calculate the total quantity of products ordered by each customer:**

select c.customer_id, c.name, sum(o.quantity) as total_quantity

from customers c

join orders o on c.customer_id = o.customer_id

group by c.customer_id, c.name;

customer_id	name	total_quantity
1	arjun sharma	1
2	priya verma	2
3	rahul mehta	1
4	ananya iyer	3
5	vishal patel	1
6	sneha joshi	2
7	amit kumar	1
8	deepika singh	1
9	rohit gupta	2
10	neha choudhary	3
11	sanjay rao	1
12	pallavi nair	1
13	ajay yadav	1
14	kiran malik	1
15	rajat shukla	1
16	swati saxena	2
17	nitesh chaturvedi	1
18	shreya bhattac...	3
19	manish pandey	1
20	ridhima kapoor	1

h.   List all orders along with customer name and product name.

select o.order_id, c.name as customer_name, p.name as product_name, o.quantity, o.order_date, o.status

from orders o

join customers c on o.customer_id = c.customer_id

join products p on o.product_id = p.product_id;

order_id	customer_name	product_name	quantity	order_date	status
41	arjun sharma	laptop	1	2025-02-10	success
42	priya verma	smartphone	2	2025-02-11	pending
43	rahul mehta	tablet	1	2025-02-12	cancel
44	ananya iyer	headphones	3	2025-02-13	success
45	vishal patel	smartwatch	1	2025-02-14	pending
46	sneha joshi	wireless earbuds	2	2025-02-15	success
47	amit kumar	gaming console	1	2025-02-16	success
48	deepika singh	dslr camera	1	2025-02-17	cancel
49	rohit gupta	power bank	2	2025-02-18	pending
50	neha choudhary	bluetooth speaker	3	2025-02-19	success
51	sanjay rao	air conditioner	1	2025-02-20	pending
52	pallavi nair	refrigerator	1	2025-02-21	success
53	ajay yadav	microwave oven	1	2025-02-22	cancel
54	kiran malik	washing machine	1	2025-02-23	success
55	rajat shukla	led tv	1	2025-02-24	pending
56	swati saxena	dining table	2	2025-02-25	success
57	nitesh chaturvedi	office chair	1	2025-02-26	cancel
58	shreya bhattac...	sofa set	3	2025-02-27	success
59	manish pandey	bed	1	2025-02-28	pending
60	ridhima kapoor	bookshelf	1	2025-03-01	success

i.   Find products that have never been ordered.

select * from products

where product_id not in (select distinct product_id from orders);

product_id	name	description	price	category
NULL	NULL	NULL	NULL	NULL