1. Basic SELECT

SELECT * FROM customers;

customer_id	customer_name	city	country
1	Alice Smith	New York	USA
2	Bob Johnson	Los Angeles	USA
3	Priya Mehra	Delhi	India
4	John Doe	London	UK
5	Mei Wong	Beijing	China

2. WHERE clause

SELECT * FROM orders WHERE total_amount > 250;

order_id	customer_id	order_date	total_amount
102	2	2023-02-10	480.00
104	1	2023-04-01	300.00
106	5	2023-05-20	500.00

3. ORDER BY clause

SELECT * FROM orders ORDER BY order_id DESC;

order_id	customer_id	order_date	total_amount
107	3	2023-06-18	200.00
106	5	2023-05-20	500.00
105	4	2023-04-12	150.00
104	1	2023-04-01	300.00
103	3	2023-03-05	120.00
102	2	2023-02-10	480.00
101	1	2023-01-15	250.00

4. GROUP BY with Aggregation

SELECT customer_id, COUNT(*) AS order_count, SUM(total_amount) AS total_spent

FROM orders

GROUP BY customer_id;

customer_id	order_count	total_spent
1	2	550.00
2	1	480.00
3	2	320.00
4	1	150.00
5	1	500.00

5. INNER JOIN

```
SELECT c.customer_name, o.order_id, o.total_amount
FROM customers c
INNER JOIN orders o
ON c.customer_id = o.customer_id;
```

customer_name	order_id	total_amount
Alice Smith	101	250.00
Alice Smith	104	300.00
Bob Johnson	102	480.00
Priya Mehra	103	120.00
Priya Mehra	107	200.00
John Doe	105	150.00
Mei Wong	106	500.00

2. LEFT JOIN

```
SELECT c.customer_name, o.order_id, o.total_amount
FROM customers c
LEFT JOIN orders o
ON c.customer_id = o.customer_id;
```

customer_name	order_id	total_amount
Alice Smith	101	250.00
Alice Smith	104	300.00
Bob Johnson	102	480.00
Priya Mehra	103	120.00
Priya Mehra	107	200.00
John Doe	105	150.00
Mei Wong	106	500.00
Ravi Sharma	NULL	NULL

6. RIGHT JOIN

```
SELECT c.customer_name,o.order_id,o.total_amount
FROM customers c
RIGHT JOIN orders o ON c.customer_id = o.customer_id;
```

customer_name	order_id	total_amount
Alice Smith	101	250.00
Bob Johnson	102	480.00
Priya Mehra	103	120.00
Alice Smith	104	300.00
John Doe	105	150.00
Mei Wong	106	500.00
Priya Mehra	107	200.00
NULL	108	600.00

7. SUBQUERY 1

```
SELECT * FROM orders
WHERE total_amount > ( SELECT AVG(total_amount) from orders);
```

order_id	customer_id	order_date	total_amount
102	2	2023-02-10	480.00
106	5	2023-05-20	500.00
108	999	2023-07-01	600.00

8. SUBQUERY 2

```
SELECT customer_name,
(SELECT SUM(total_amount)
    FROM orders
    WHERE orders.customer_id = customers.customer_id) AS total_spent
from customers;
```

customer_name	total_spent
Alice Smith	550.00
Bob Johnson	480.00
John Doe	150.00
Mei Wong	500.00
Priya Mehra	320.00
Ravi Sharma	NULL

9. SUBQUERY 3

```
SELECT customer_id,avg_spent
FROM (SELECT customer_id , AVG(total_amount) AS avg_spent, COUNT(*) AS order_count
FROM orders
GROUP BY customer_id) AS sub
WHERE order_count >=2;
```

customer_id	avg_spent
1	275.000000
3	160.000000

10. VIEW

```
CREATE VIEW customer_spendig AS
SELECT c.customer_name, SUM(o.total_amount) AS total_spent
FROM customers c
JOIN orders o ON c.customer_id = o.customer_id
GROUP BY c.customer_name;
```

```
SELECT * FROM customer_spendig;
```

customer_name	total_spent
Alice Smith	550.00
Bob Johnson	480.00
Priya Mehra	320.00
John Doe	150.00
Mei Wong	500.00

11. INDEX

```
CREATE INDEX indx_orders_customer_id
ON orders (customer_id);
SELECT * from orders WHERE customer_id = 1;
```

order_id	customer_id	order_date	total_amount
101	1	2023-01-15	250.00
104	1	2023-04-01	300.00
NULL	NULL	NULL	NULL