





## Factors Impacting Query Performance

- Hardware and System Configurations
- Database Design
  - Logical (Schema Design, Normalization, ...)
  - Physical (Indexing, Partitioning, ...)
- Query Structure



```
SELECT count(*)
FROM orders
WHERE extract(year from order_date) = 2022;
```

```
SELECT count(*)
FROM orders
WHERE order_date between '2022-01-01' and '2022-12-31';
```



```
SELECT count(*)
FROM customers
WHERE name like '%omer 1%';
```

```
SELECT count(*)
FROM customers
WHERE name like 'Customer 1%';
```



```
SELECT * FROM orders WHERE status = 'shipped'
UNION
SELECT * FROM orders WHERE status = 'delivered';
```

```
SELECT * FROM orders WHERE status = 'shipped'
UNION ALL
SELECT * FROM orders WHERE status = 'delivered';
```



```
SELECT DISTINCT c.name
FROM customers c JOIN orders o
ON c.id = o.customer_id
WHERE o.status='delivered';
```

```
SELECT name FROM customers c
WHERE id IN (
SELECT customer_id FROM orders o
WHERE o.status='delivered'
);
```

```
SELECT name FROM customers c
WHERE EXISTS (
    SELECT 1 FROM orders o
    WHERE o.customer_id = c.id
    AND o.status='delivered'
);
```



```
SELECT c.id, c.name, COUNT(o.id) AS order_count FROM customers ( LEFT JOIN) orders o ON c.id = o.customer_id GROUP BY c.id, c.name;
```

id	name	order_count
1	Alice	12
2	Bob	9
3	Charlie	O
4	Diana	21

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1	Alice	12
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