

# DATA QUERY LANGUAGE

## Structured Query Language (SQL)

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## 1 Data Query Language (DQL)



# Outline

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# Data Query Language (DQL)

*Key stor*

**DQL** (*Data Query Language*) is a **subset** of **SQL** that is used to **query** and **retrieve data** from a **database**.

## PostgreSQL Example

```
SELECT * FROM myTable ;
```

## MySQL Example

```
SELECT * FROM myTable ;
```

*σ (myTable)*



# Data Query Language (DQL)

$\sigma_{id\_table = ?} (my\_first\_table)$

**DQL** statements are used to **query** and **retrieve data** from a **database**.

## PostgreSQL Example

**SELECT** \* **FROM** myTable  
**WHERE** name = 'John';

$\sigma_{name = 'John'} (myTable)$

## MySQL Example

**SELECT** \* **FROM** myTable  
**WHERE** name = 'John';



# Data Query Language (DQL)

col LIKE "%a" → any + 'a'

**DQL** statements are used to **query** and **retrieve data** from a **database**.

## PostgreSQL Example

```
SELECT * FROM myTable
WHERE name LIKE 'J%';
```

J% → first char J  
 %J → last char J  
 %J% → not any

name LIKE 'J%' (myTable)

## MySQL Example

```
SELECT * FROM myTable
WHERE name LIKE 'J%';
```



# Data Query Language (DQL)

$\uparrow$   $\Pi_{full\_name}(name)(myTable)$

**DQL** statements are used to **query** and **retrieve data** from a **database**.

## PostgreSQL Example

```
SELECT name AS full_name
FROM myTable;
```

$\Pi_{alias, name}(my\_first\_table)$

## MySQL Example

```
SELECT name AS full_name
FROM myTable;
```



# Data Query Language (DQL)

**DQL** statements are used to **query** and **retrieve data** from a **database**.

## PostgreSQL Example

```
SELECT COUNT(*)  
FROM myTable;
```

→ # rows

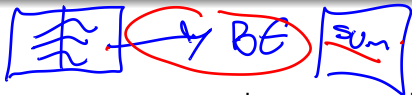
## MySQL Example

```
SELECT COUNT(*)  
FROM myTable;
```





# Data Query Language (DQL)



**DQL** statements are used to **query** and **retrieve data** from a **database**.

## PostgreSQL Example

```
SELECT SUM(salary)
FROM myTable;
```



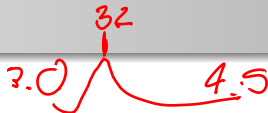
## MySQL Example

```
SELECT SUM(salary)
FROM myTable;
```



# Data Query Language (DQL)

30  45

3.0  4.5

**DQL** statements are used to **query** and **retrieve data** from a **database**.

## PostgreSQL Example

```
SELECT AVG(salary), MAX(salary), MIN(salary)
FROM myTable;
```

## MySQL Example

```
SELECT AVG(salary), MAX(salary), MIN(salary)
FROM myTable;
```



# Data Query Language (DQL)

**DQL** statements are used to **query** and **retrieve data** from a **database**.

## PostgreSQL Example

```
SELECT * FROM myTable  
LIMIT 10;
```

## MySQL Example

```
SELECT * FROM myTable  
LIMIT 10;
```

→ OFFSET → start row



# Data Query Language (DQL)

**DQL** statements are used to **query** and **retrieve data** from a **database**.

## PostgreSQL Example

```
SELECT * FROM myTable  
ORDER BY name ASC;
```

DESC z-a

a-z

## MySQL Example

```
SELECT * FROM myTable  
ORDER BY name ASC;
```



# Data Query Language (DQL)

name	age	country
1		a
2		a

**DQL** statements are used to **query** and **retrieve data** from a **database**.

## PostgreSQL Example

```
SELECT country, COUNT(*)
FROM myTable GROUP BY country;
```

## MySQL Example

```
SELECT country, COUNT(*)
FROM myTable GROUP BY country;
```



# Data Query Language (DQL)

## PostgreSQL Example

```
SELECT myTable.name, myOtherTable.email  
FROM myTable  
JOIN myOtherTable ON myTable.id = myOtherTable.id;
```

## MySQL Example

```
SELECT myTable.name, myOtherTable.email  
FROM myTable  
JOIN myOtherTable ON myTable.id = myOtherTable.id;
```



# Outline

## 1 Data Query Language (DQL)



# Thanks!

## Questions?



Repo: [github.com/engandres/ud-public/courses/databases-foundations](https://github.com/engandres/ud-public/courses/databases-foundations)

