

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 ;
```

Handwritten annotations: A blue circle highlights the asterisk (), and a blue arrow points from the word 'Key stor' to it.*

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%';
```



$$\prod_{p \text{ Full-name}(\text{name})} (\text{myTable})$$

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

PostgreSQL Example

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

T 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;
```

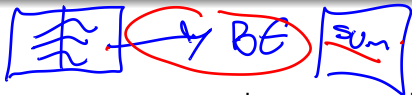
→ # rows

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;
```



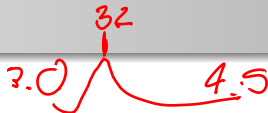
MySQL Example

```
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;
```

Handwritten notes: Red boxes around 'myTable.name', 'myOtherTable.email', 'myTable', 'JOIN', and 'myOtherTable'. A blue box around 'myTable.id'. A pink box around 'myOtherTable.id'. A pink line connects the two 'id' fields. A red asterisk is above the pink line. A pink bracket on the right side of the ON clause is labeled 'FK vs PK' and 'PK vs FK'.

MySQL Example

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



Outline

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Thanks!

Questions?



Repo: github.com/engandres/ud-public/courses/databases-foundations

