Data Query Language

Structured Query Language (SQL)

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Outline

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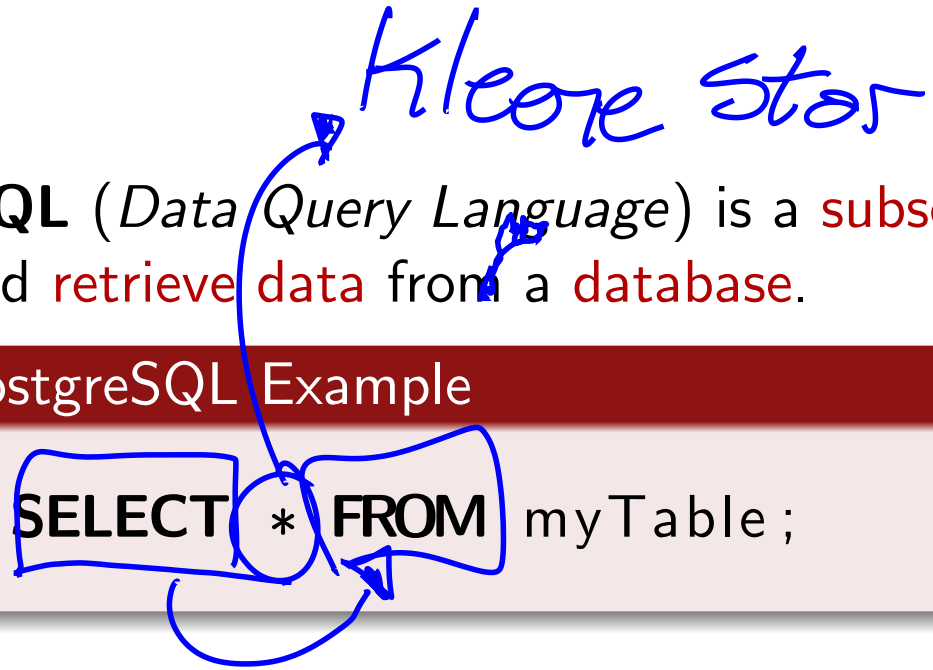
Data Query Language (DQL)



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;
```

$\sigma(myTable)$

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Data Query Language (DQL)

$\sigma_{id\_table=7}(my\_first\_table)$

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';
```

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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%' ⇒ J at any

name like 'J%' (myTable)

MySQL Example

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

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Data Query Language (DQL)

$\Pi_{\rho \text{Full\_name}(\text{name})}(\text{myTable})$

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

PostgreSQL Example

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

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

MySQL Example

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

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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;
```

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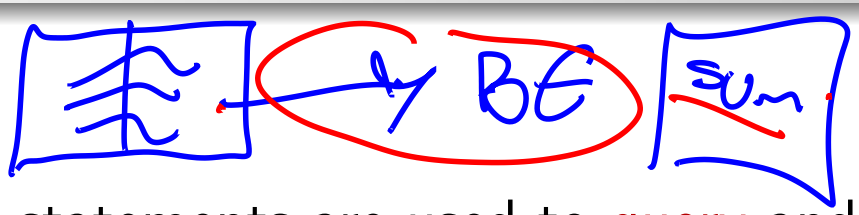
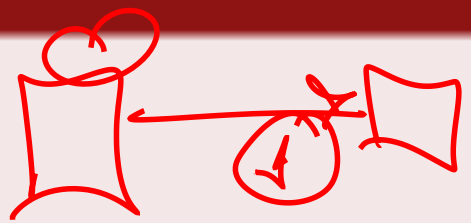
Data Query Language (DQL)



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;
```

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Data Query Language (DQL)

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;
```

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;
```

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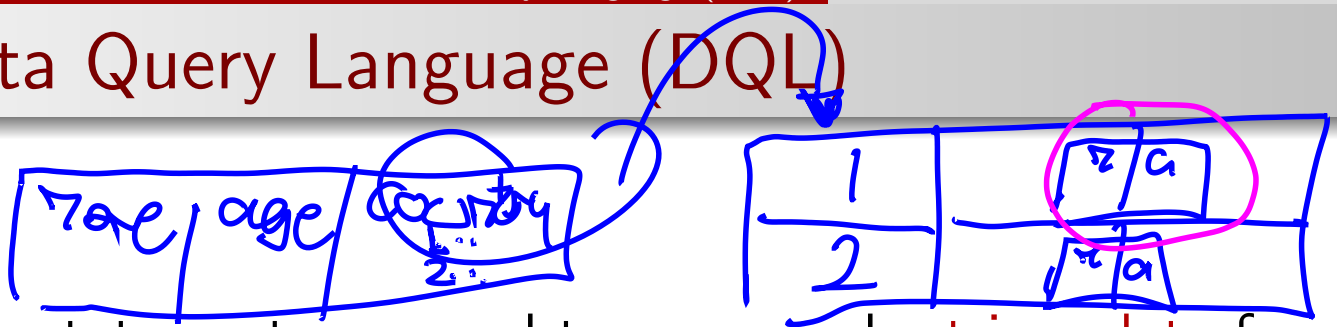
Data Query Language (DQL)



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;
```

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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;
```

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Thanks!

Questions?

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

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