INTRODUCING QUERIES

INTRODUCTION TO SQL

Jasmin Ludolf


SQL

checkouts

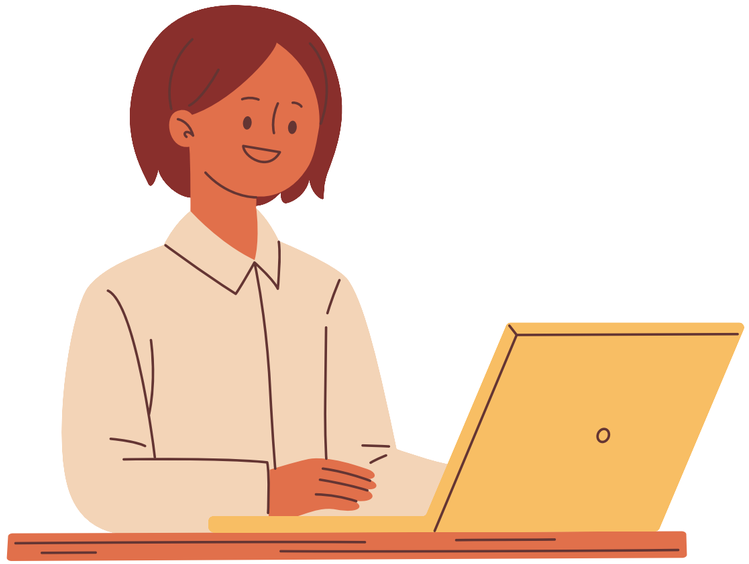
id	start_date	due_date	card_num	book_id
23359	2024-05-11	2024-05-25	54378	547
23360	2024-05-12	2024-05-26	94722	156
23361	2024-05-12	2024-05-26	45783	912
23362	2024-05-13	2024-05-27	90123	838

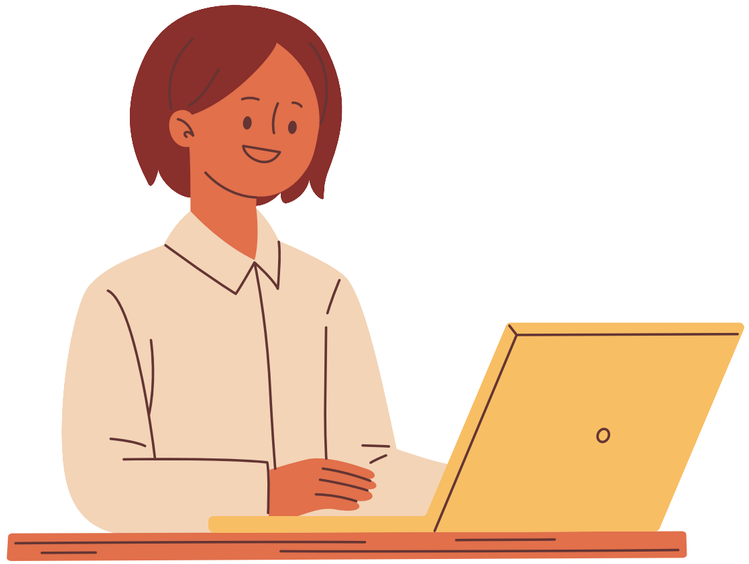
books

id	title	author	genre	pub_year
838	Being Mortal	Atul Gawande	Non-Fiction	2015
912	Educated	Tara Westover	Non-Fiction	2018
547	Segment of One	Michael Grigsby	Fiction	2022
156	Where the Wild Things Are	Maurice Sendak	Childrens	1963

patrons

card_num	name	member_year	total_fine
54378	Izzy	2012	9.86
94722	Maham	2020	0
45783	Jasmin	2022	2.05
90123	James	1989	0





How did website traffic change when a feature was introduced?

Which products had the highest sales last week?

Which products get the worst review scores from customers?

Keywords

```
SELECT name
```

```
FROM
```

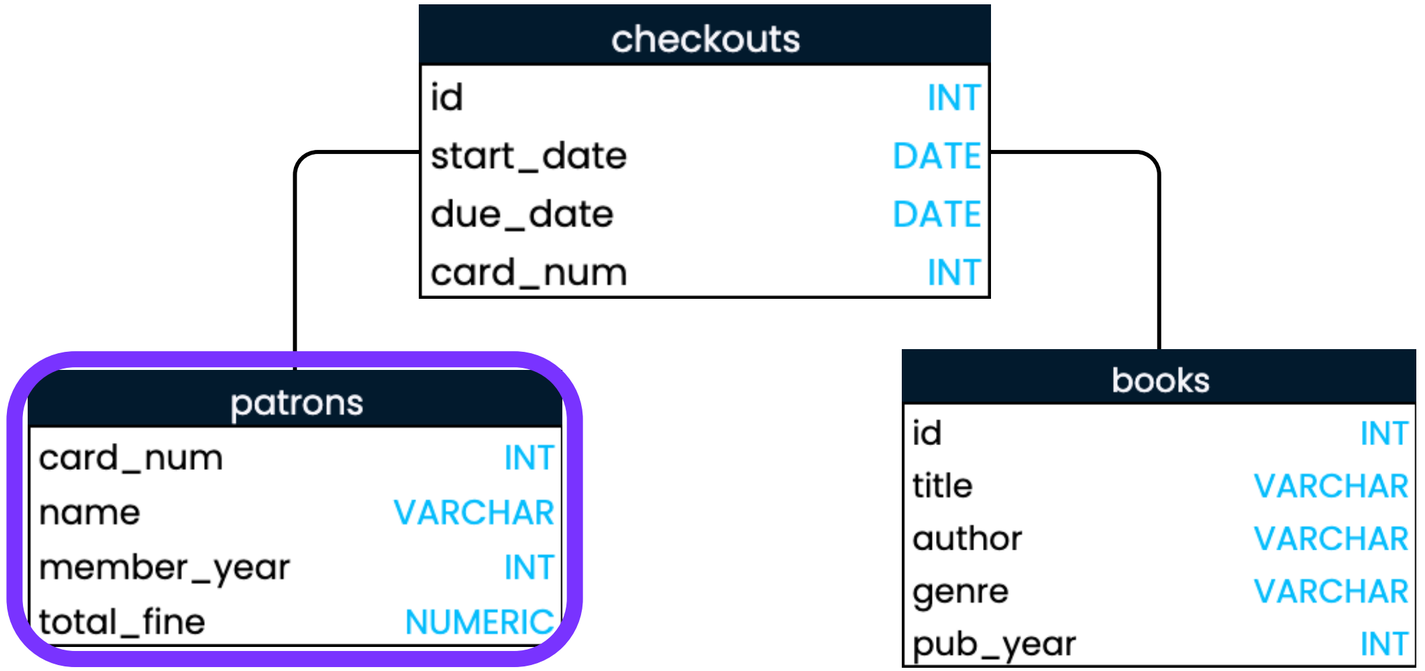
patrons

card_num	name	member_year	total_fine
54378	Izzy	2012	9.86
94722	Maham	2020	0
45783	Jasmin	2022	2.05
90123	James	1989	0

Keywords

```
SELECT name
```

```
FROM patrons
```



```sql
SELECT name
FROM patrons;
```

Query

name
Izzy
Maham
Jasmin
James

Result set

```
SELECT name
FROM patrons;
```

name
Izzy
Maham
Jasmin
James

patrons

card_num	name	member_year	total_fine
54378	Izzy	2012	9.86
94722	Maham	2020	0
45783	Jasmin	2022	2.05
90123	James	1989	0

```
SELECT card_num, name
FROM patrons;
```

card_num	name
54378	Izzy
94722	Maham
45783	Jasmin
90123	James

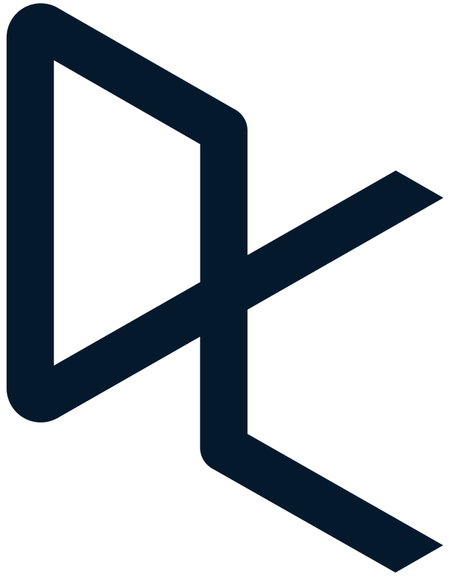
```sql
SELECT name, card_num, total_fine
FROM patrons;
```

name	card_num	total_fine
Izzy	54378	9.86
Maham	94722	0
Jasmin	45783	2.05
James	90123	0

```
SELECT *
FROM patrons;
```

card_num	name	member_year	total_fine
54378	Izzy	2012	9.86
94722	Maham	2020	0
45783	Jasmin	2022	2.05
90123	James	1989	0

LET’S PRACTICE!



WRITING QUERIES

INTRODUCTION TO SQL

Jasmin Ludolf

Aliasing

Rename columns for clarity or brevity

Aliasing

```
SELECT name, year_hired
FROM employees;
```

name	year_hired
Darius	2020
Raven	2017
Eduardo	2022
Maggie	2021
Amy	2020
Meehir	2021

Aliasing

```
SELECT name AS first_name
FROM employees;
```

first_name
Darius
Raven
Eduardo
Maggie
Amy
Meehir

Unique values

```
SELECT year_hired
FROM employees;
```

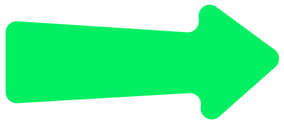
Unique values

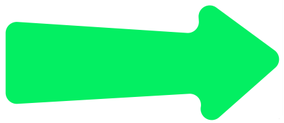
```
SELECT DISTINCT year_hired
FROM employees;
```

year_hired
2020
2017
2022
2021

Unique values

```
SELECT dept_id, year_hired
FROM employees;
```

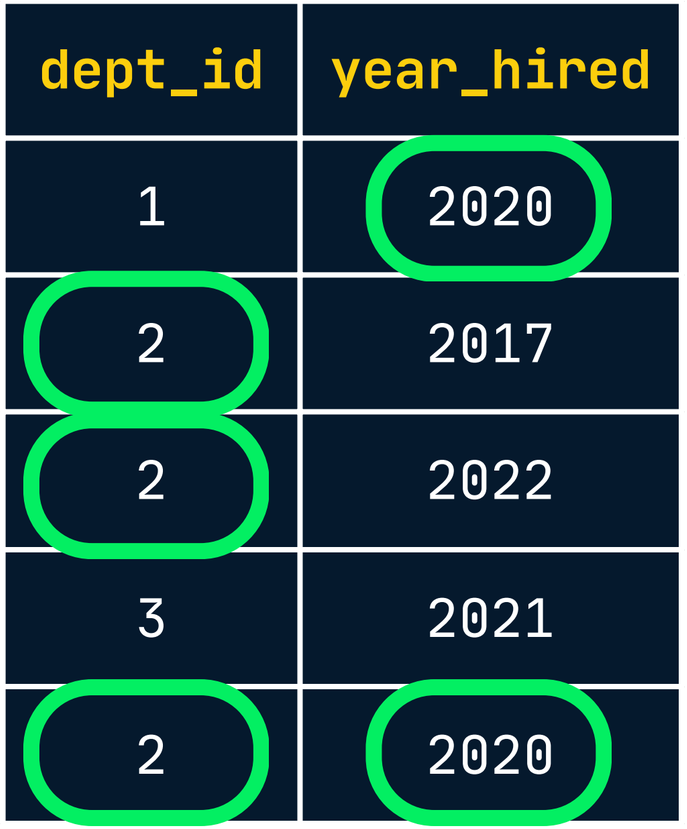




dept_id	year_hired
1	2020
2	2017
2	2022
3	2021
2	2020
3	2021

Unique values

```
SELECT DISTINCT dept_id, year_hired
FROM employees;
```



Views

A saved SQL query

Don’t store data

```
CREATE VIEW employee_hire_years AS
SELECT id, name, year_hired
FROM employees;
```

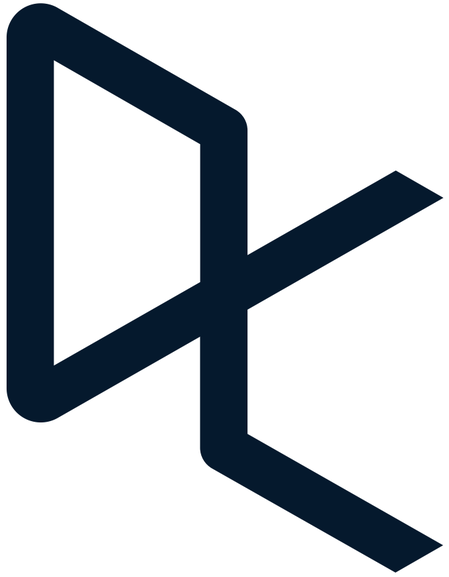
Views

```
CREATE VIEW employee_hire_years AS
SELECT id, name, year_hired
FROM employees;
```

```
SELECT id, name
FROM employee_hire_years;
```

id	name
54378	Darius
94722	Raven
45783	Eduardo
90123	Maggie
67284	Amy
26148	Meehir

TIME TO PRACTICE!



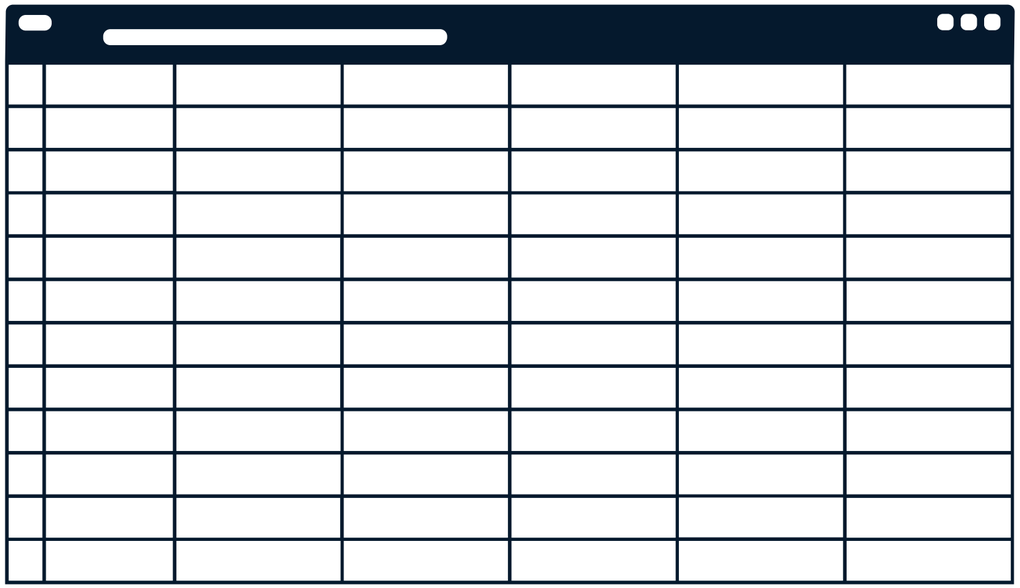
SQL FLAVORS

INTRODUCTION TO SQL

Jasmin Ludolf

FREE

Database




ISO

PostgreSQL

- Free
- Open-source
- Name of the database system and SQL flavor

SQL Server

- Free and paid
- Created by Microsoft
- Uses T-SQL flavor

PostgreSQL

```
SELECT id, name
FROM employees
LIMIT 2;
```

id	name
54378	Darius
94722	Raven

SQL Server

```
SELECT TOP(2) id, name
FROM employees;
```

id	name
54378	Darius
94722	Raven

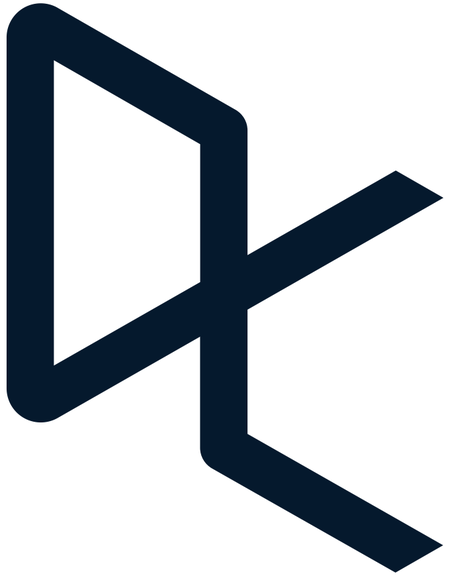
Limiting results

Useful when testing code

Look at a few results before removing the limit

Study any flavor, the
Use employers flavor
differences are minor

LET’S PRACTICE!



CONGRATULATIONS!

INTRODUCTION TO SQL

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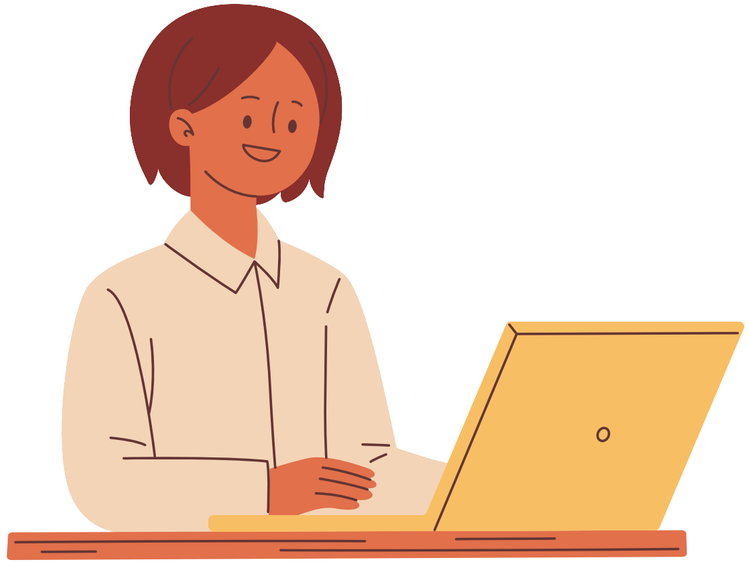

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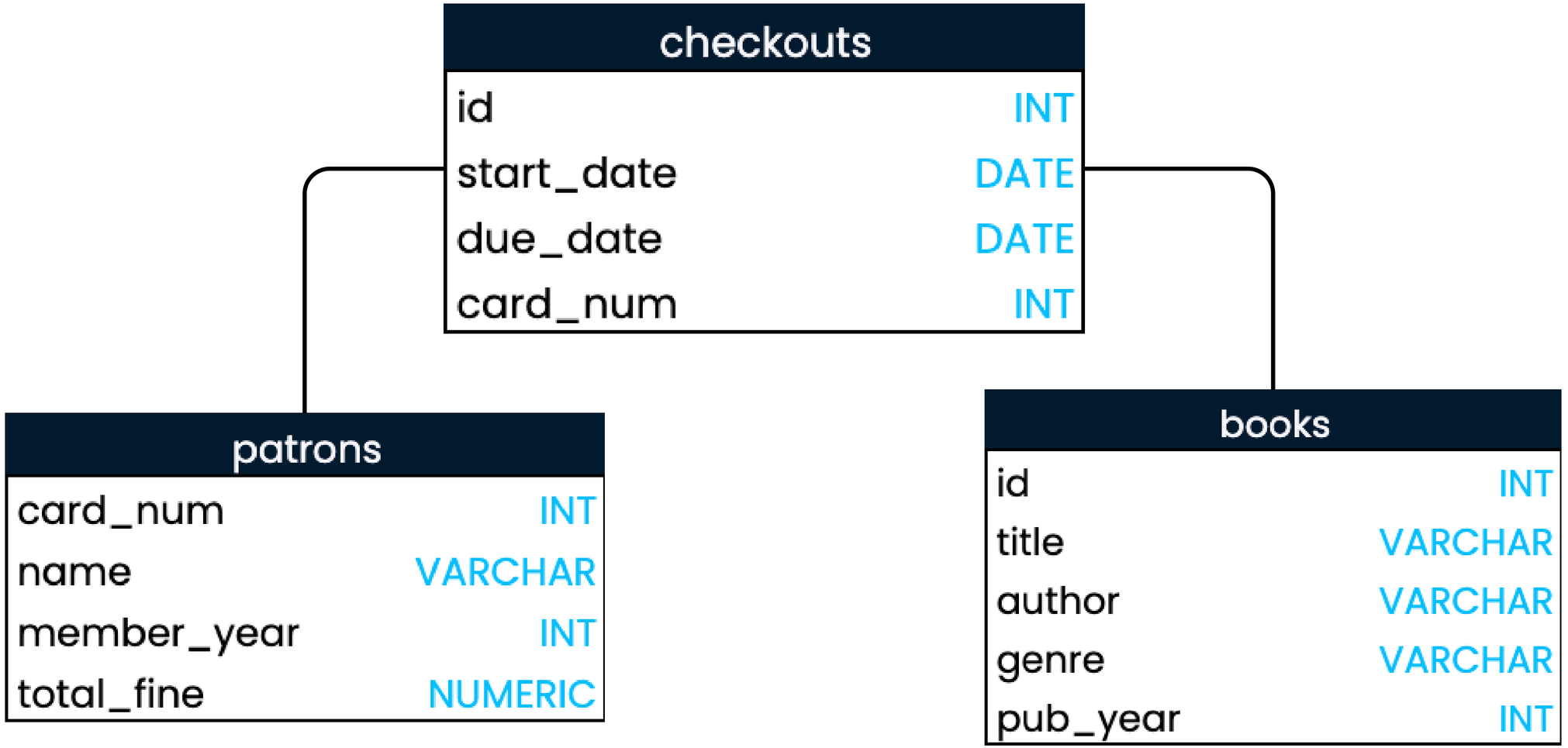
checkouts
id INT
start_date DATE
due_date DATE
card_num INT
patrons
card_num INT
name VARCHAR
member_year INT
total_fine NUMERIC
books
id INT
title VARCHAR
author VARCHAR
genre VARCHAR
pub_year INT

```
SELECT *
FROM patrons;
```

Where to go next

Learn PostgreSQL on DataCamp:

- Intermediate SQL

Learn SQL Server on DataCamp:

- Introduction to SQL Server

THANK YOU!