



# INTRODUCING QUERIES

**INTRODUCTION TO SQL**

Jasmin Ludolf



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

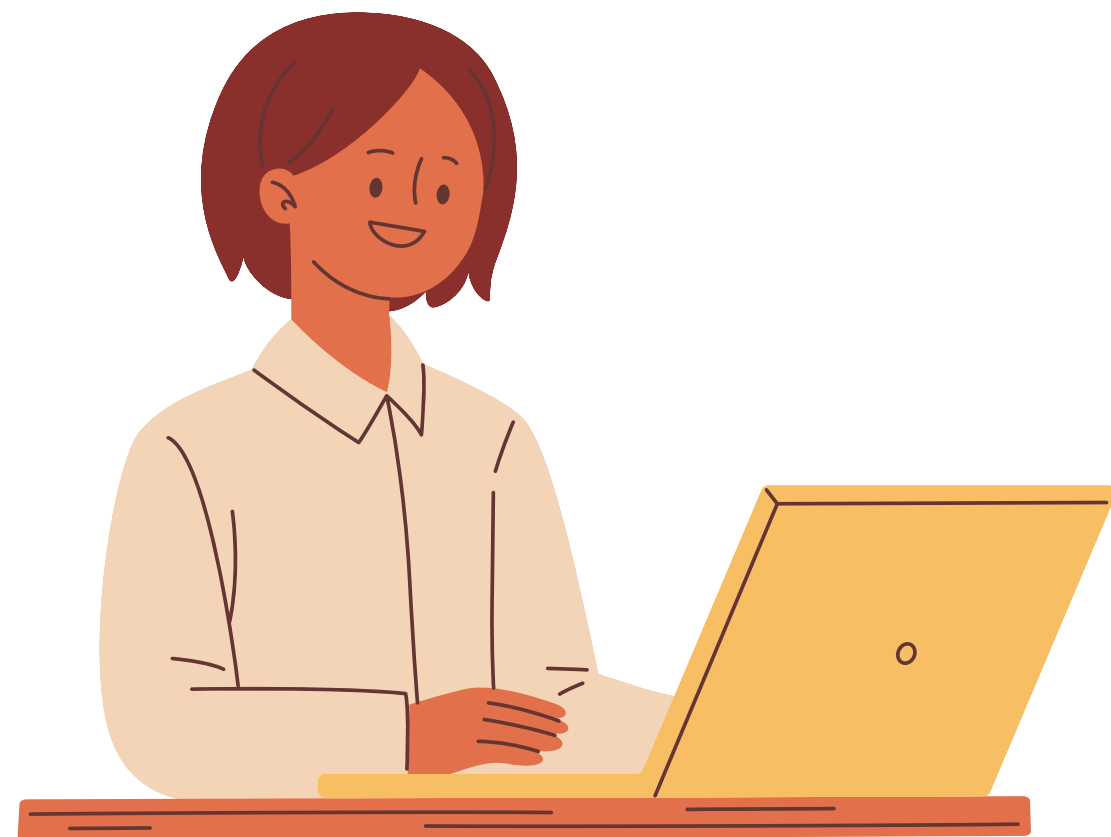
id	title	author	genre	pub_year
838	Being Mortal	Atul Gawande	Non-Fiction	2015
912	Educated	Tara Westover	Non-Fiction	2018
547	Segment of One	Michael Grigsby	Fiction	2022
156	Where the Wild Things Are	Maurice Sendak	Childrens	1963



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

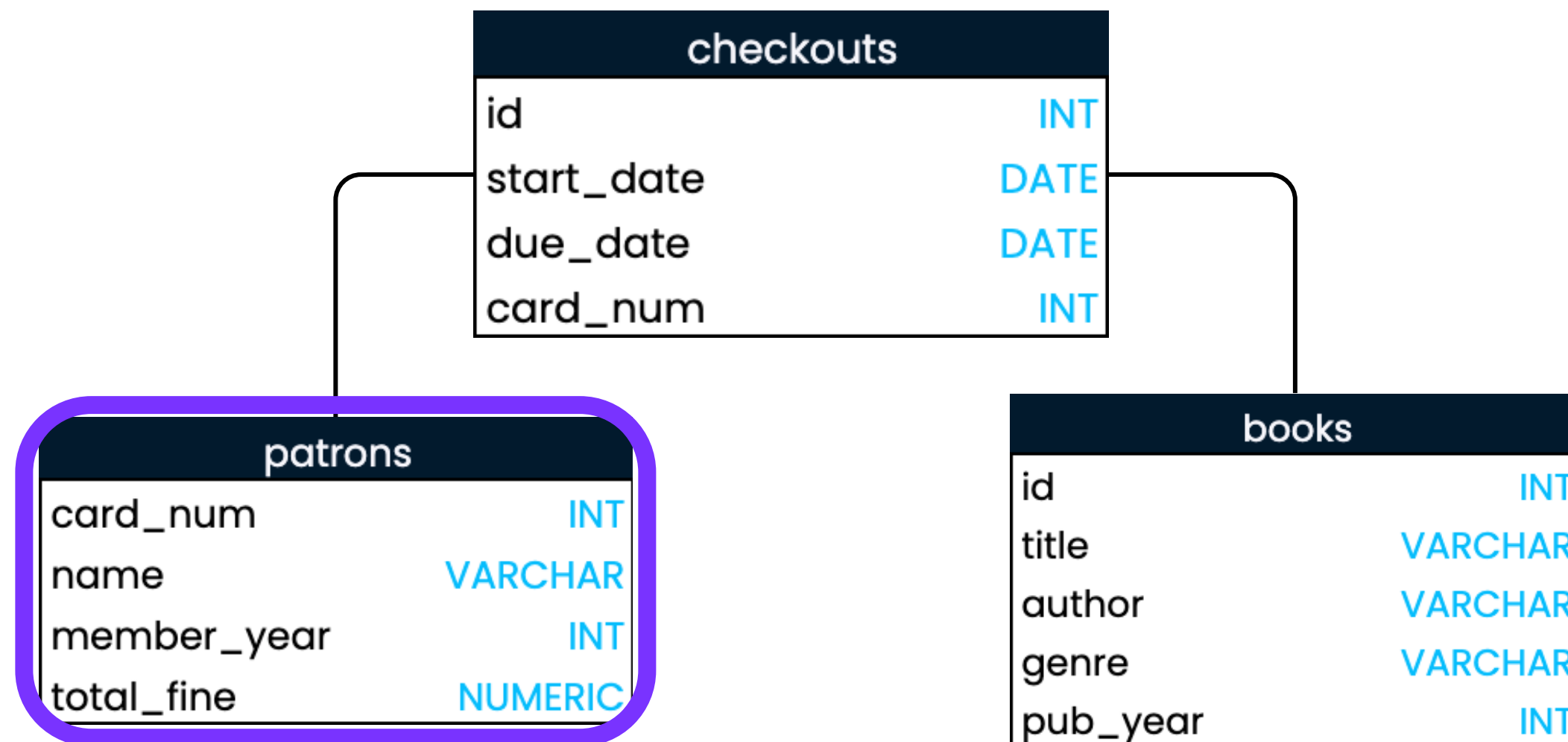
card_num	name	member_year	total_fine
54378	Izzy	2012	9.86
94722	Maham	2020	0
45783	Jasmin	2022	2.05
90123	James	1989	0



# Keywords

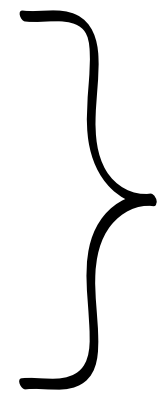
**SELECT** name

**FROM** patrons



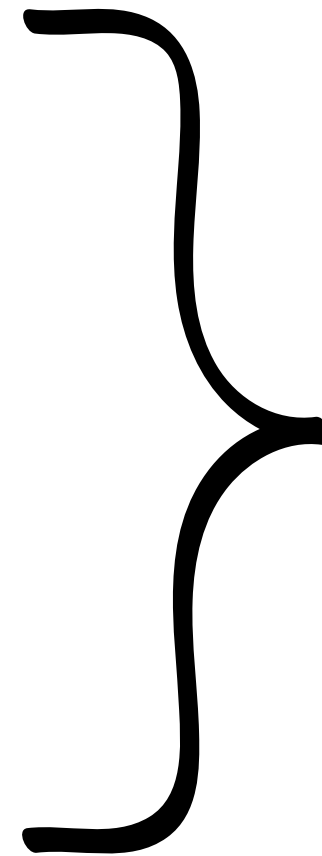


```
SELECT name  
FROM patrons;
```



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

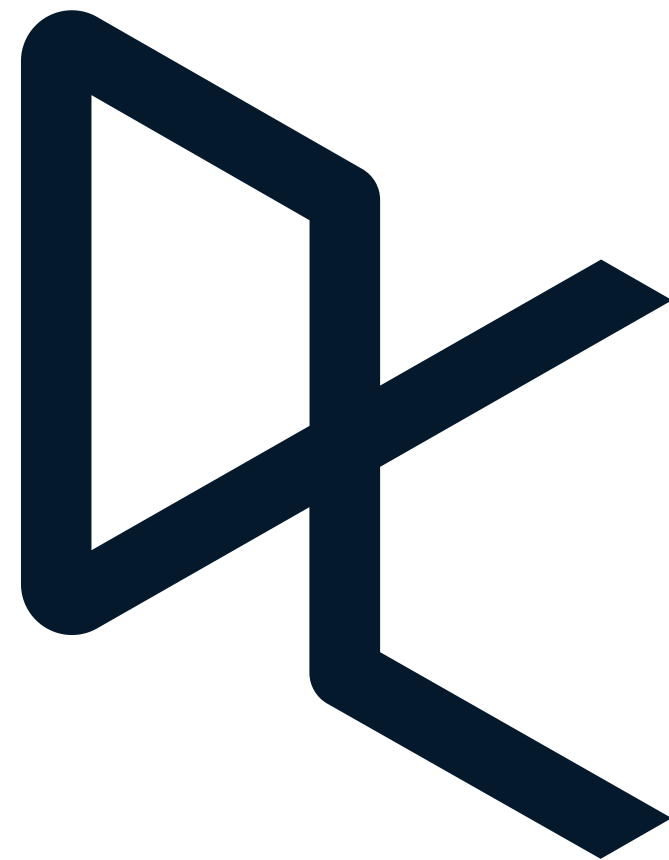
```
SELECT name, card_num, total_fine  
FROM patrons;
```

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

SELECT \* ← Wildcard  
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**

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# 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;
```



year_hired
2020
2017
2022
2021
2020
2021

The diagram illustrates the result of a SQL query. A table with the column 'year\_hired' is shown. The table contains six rows of data. Green arrows point to the first, fourth, fifth, and sixth rows, highlighting the values 2020, 2021, 2020, and 2021 respectively. This visualizes the concept of unique values, as the years 2020 and 2021 appear multiple times in the dataset.

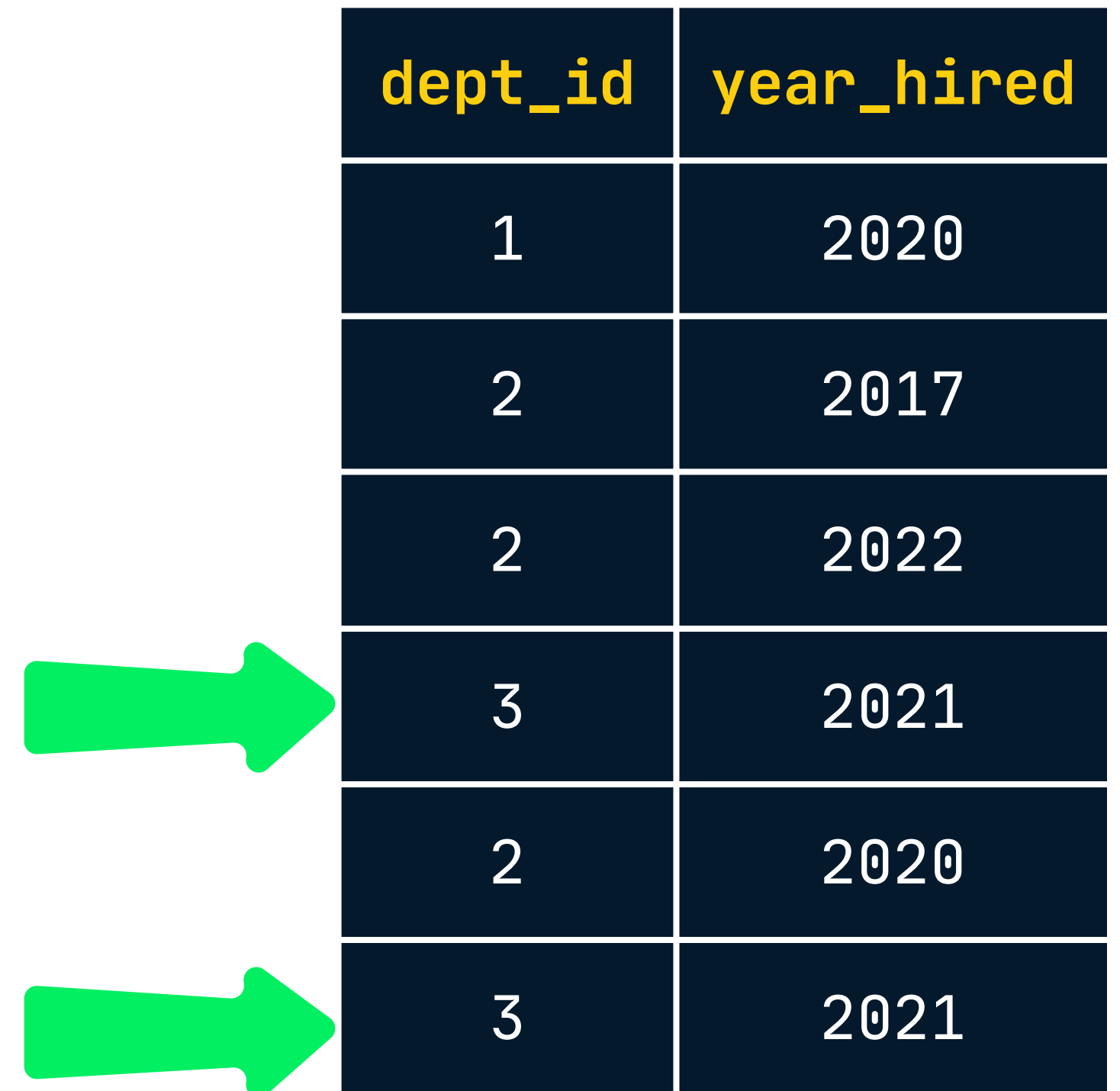
# Unique values

```
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;
```

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



# Views

A saved SQL query



Don't store data

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

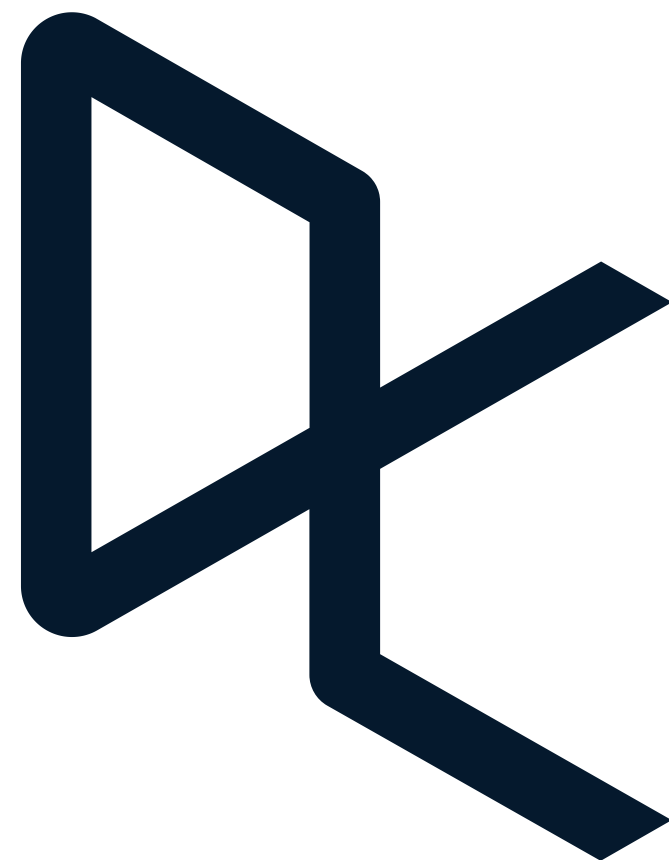
# Views

```
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**



[illegible]





# 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







Use employers flavor

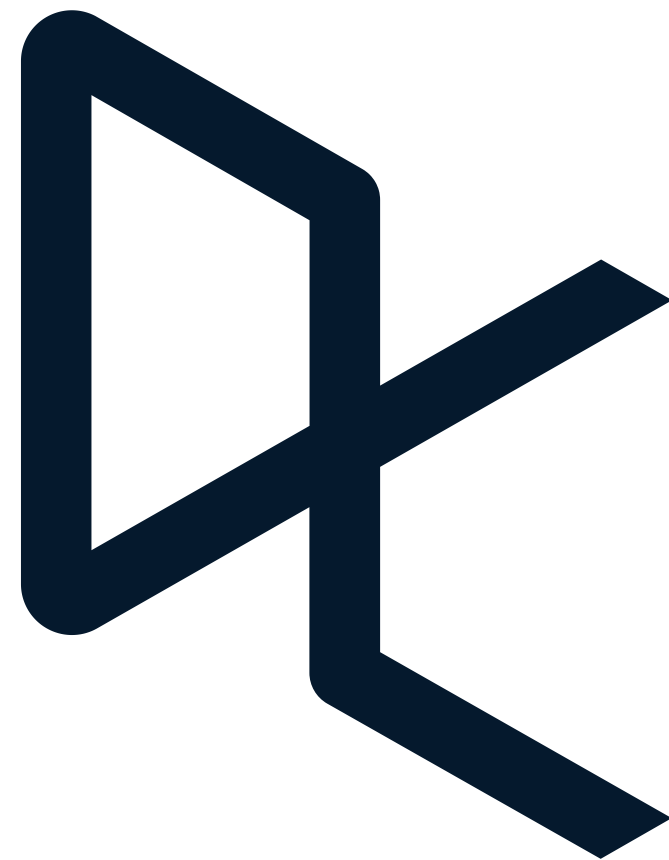


Study any flavor, the  
differences are minor





**LET'S PRACTICE!**



The background features a white central area surrounded by four colored squares: purple in the top-left, green in the top-right, green in the bottom-left, and blue in the bottom-right. Scattered throughout the white area are small, colorful confetti pieces in red, yellow, blue, and green, along with thin, curved lines in the same colors.

# CONGRATULATIONS!

## INTRODUCTION TO SQL

Jasmin Ludolf



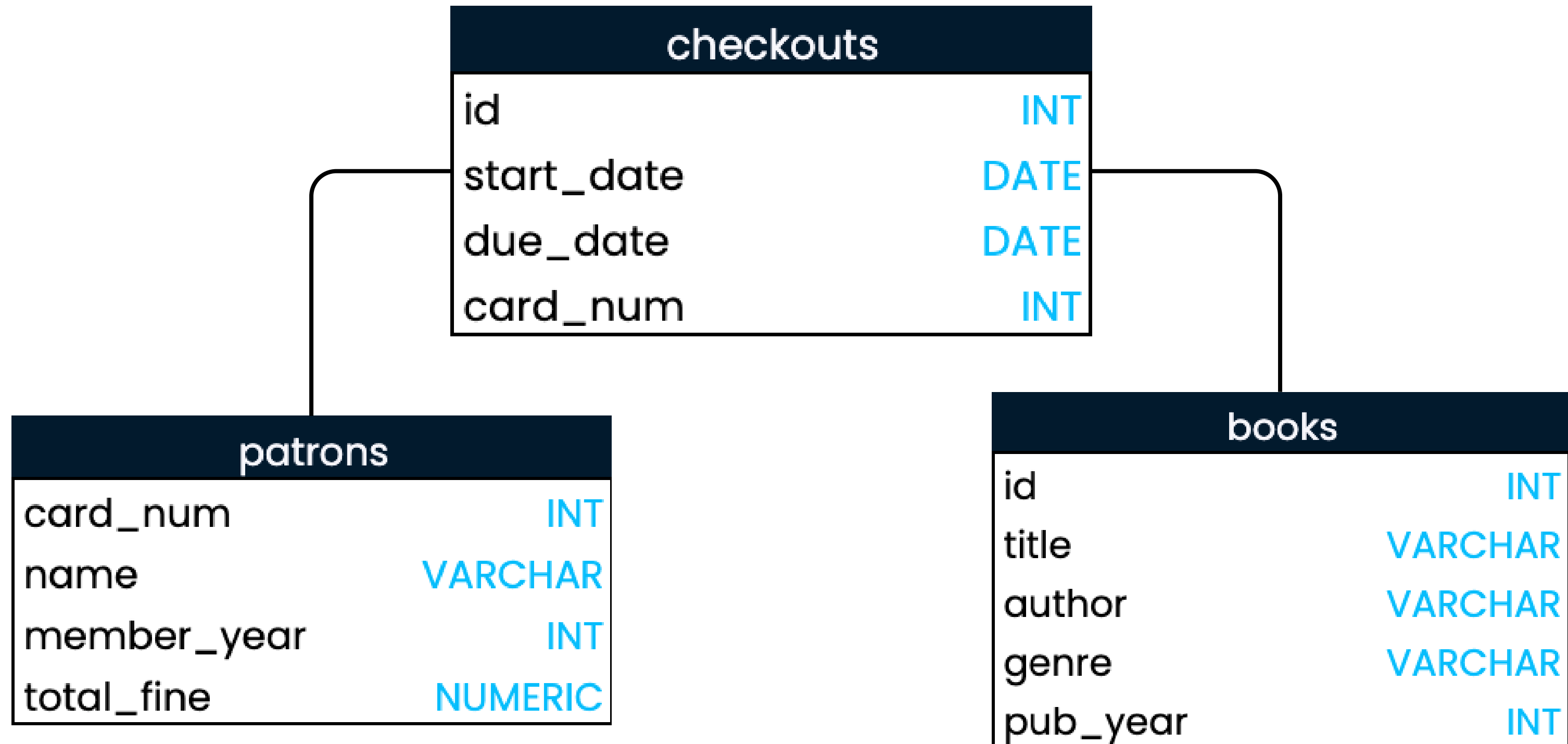
How did website traffic change when a feature was introduced?



Which products had the highest sales last week?



Which products get the worst review scores from customers?



```
SELECT *  
FROM patrons;
```



# Where to go next



Learn PostgreSQL on DataCamp:

- Intermediate SQL

Learn SQL Server on DataCamp:

- Introduction to SQL Server



**THANK YOU!**

