



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







Which products
had the highest
sales last week?





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

FROM

Keywords

SELECT name

FROM

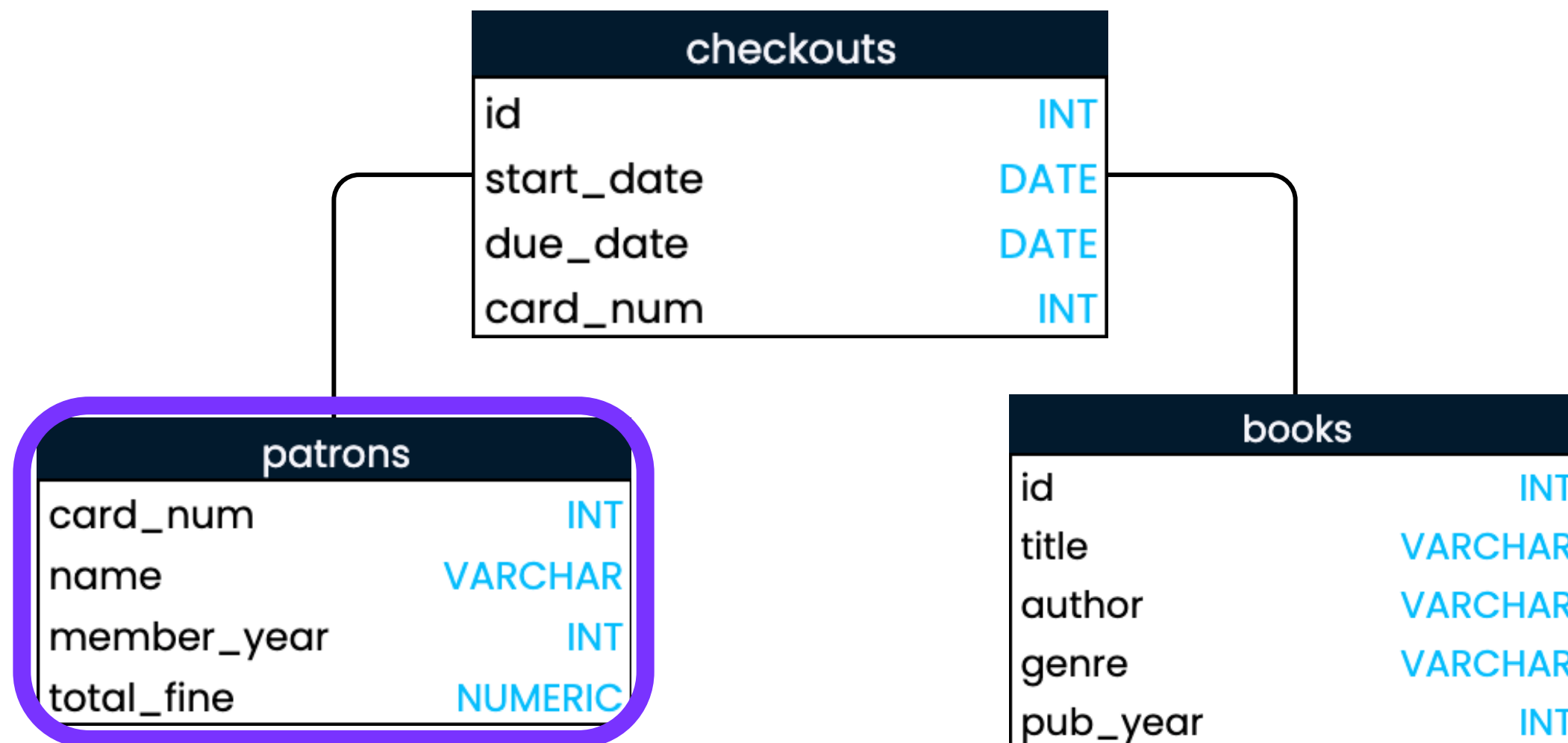
patrons

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

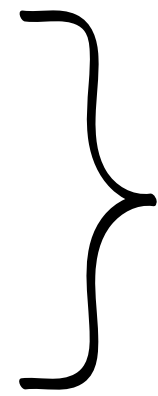
Keywords

SELECT name

FROM patrons

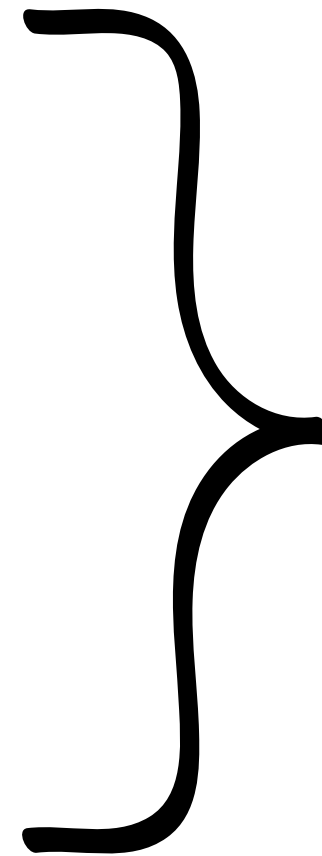


```
SELECT name  
FROM patrons;
```



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

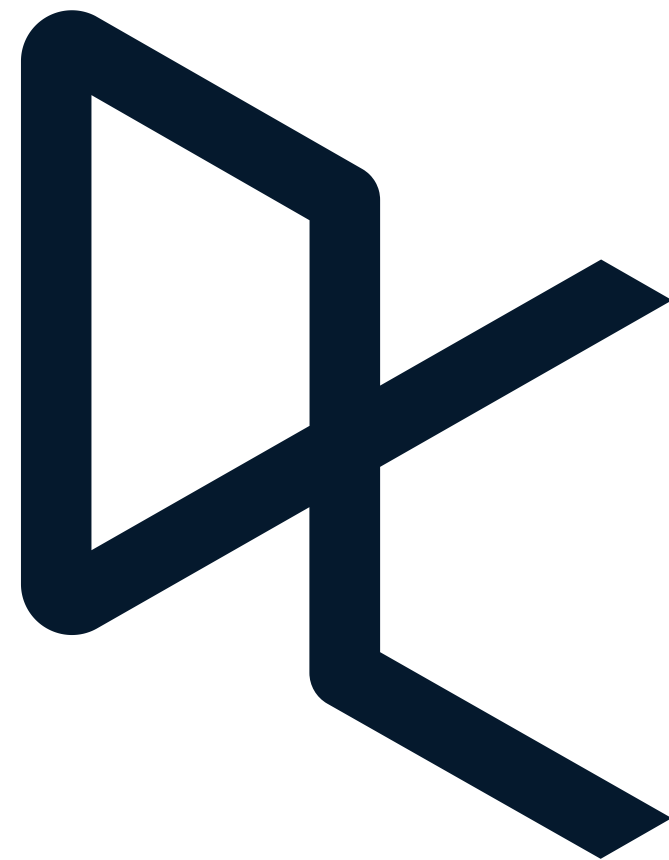
```
SELECT name, card_num, total_fine  
FROM patrons;
```

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**

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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;
```



The diagram illustrates the concept of unique values in a SQL query result. It shows a table with the column 'year_hired' and its values. Green arrows point to the unique values (2020, 2017, 2022, 2021) from the left, indicating that these are the distinct years hired.

year_hired
2020
2017
2022
2021
2020
2021

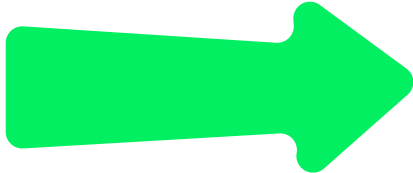
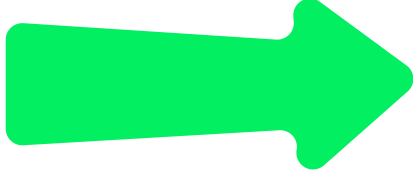
Unique values

```
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;
```

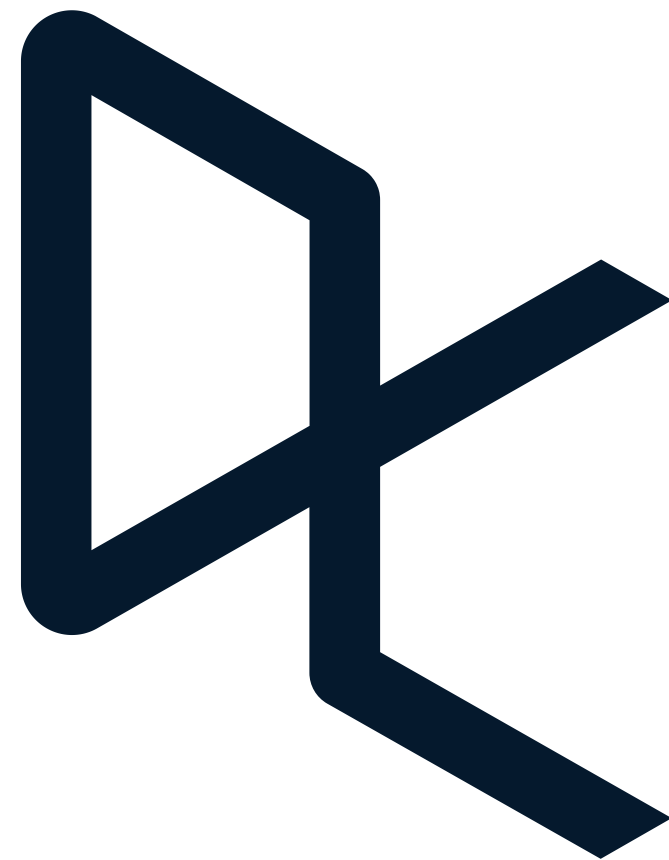
Views

```
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

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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







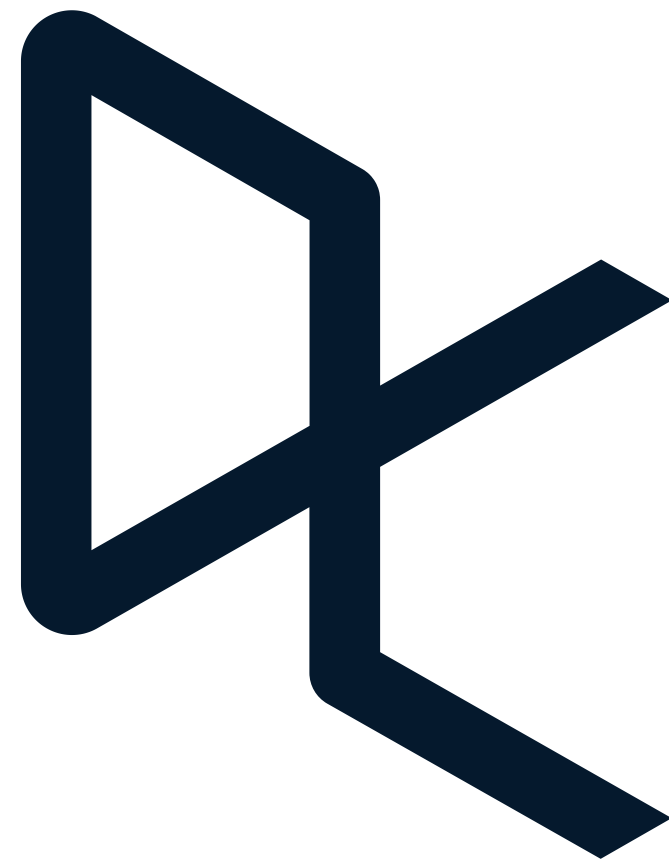
Use employers flavor




Study any flavor, the
differences are minor



LET'S PRACTICE!



The background features a white central area filled with colorful confetti, including small stars and dashes in red, yellow, green, and blue. Four solid-colored squares are positioned at the corners: purple at the top-left, green at the top-right, green at the bottom-left, and blue at the bottom-right.

CONGRATULATIONS!

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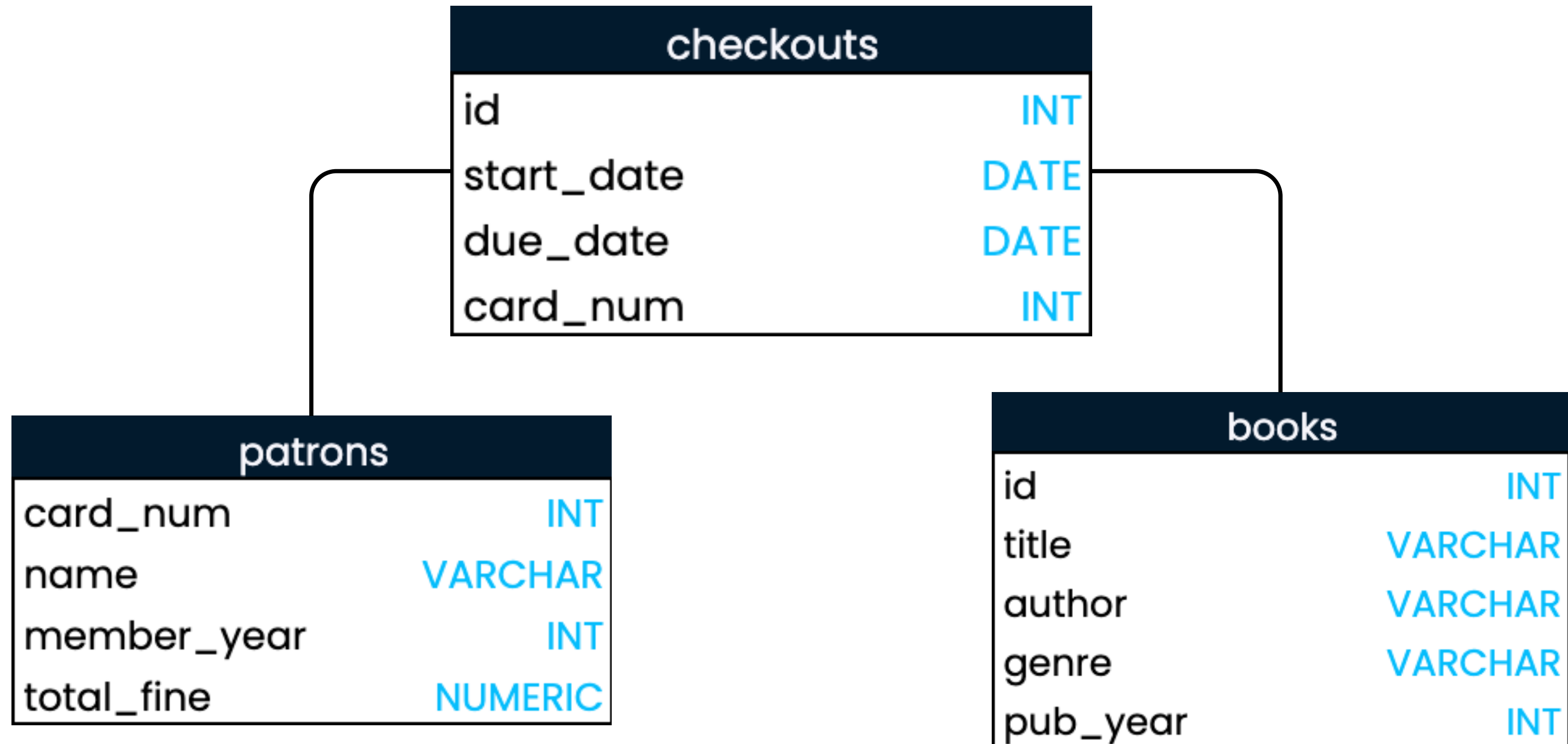
How did website traffic change when a feature was introduced?



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!

