Joins

Elements of Databases
September 13, 2017

Announcements:

- Reminder: Lab 1 starts on Monday
- Monday: Git and Github Demo
- Monday: Stache Demo

1) What is the most common type of join?

A)INSIDE JOIN
B)JOINED
C)JOINED TABLE
D)INNER JOIN

2) An INNER JOIN can be performed between any two arbitrary tables in the database.

A)True
B)False

3) Does the SQL query return the Result Table shown?

Employees

empid	emp_name	emp_dep
2	Mike	1
23	Dave	2
3	Sarah	
5	Jim	4
6	Sunil	1
37	Morgan	4

Departments

depid	dep_name
1	Sales
2	Product
3	Research
4	Engineering
5	HR

```
SELECT emp_name, dep_name
FROM Employees INNER JOIN Departments on emp_dep = depid;
```

Result Table

emp_name	dep_name
Mike	Sales
Dave	Product
Sarah	
Jim	Engineering
Sunil	Sales
Morgan	Engineering

A) Yes

B) No

4) Does the SQL query return the Result Table shown?

Employees

empid	emp_name	emp_dep
2	Mike	1
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Departments

depid	dep_name
1	Sales
2	Product
3	Research
4	Engineering
5	HR

```
SELECT emp_name, dep_name
FROM Employees JOIN Departments on emp_dep = depid
WHERE dep_name <> 'Sales'
ORDER BY dep_name;
```

Result Table

emp_name	dep_name
Dave	Product
Jim	Engineering
Morgan	Engineering

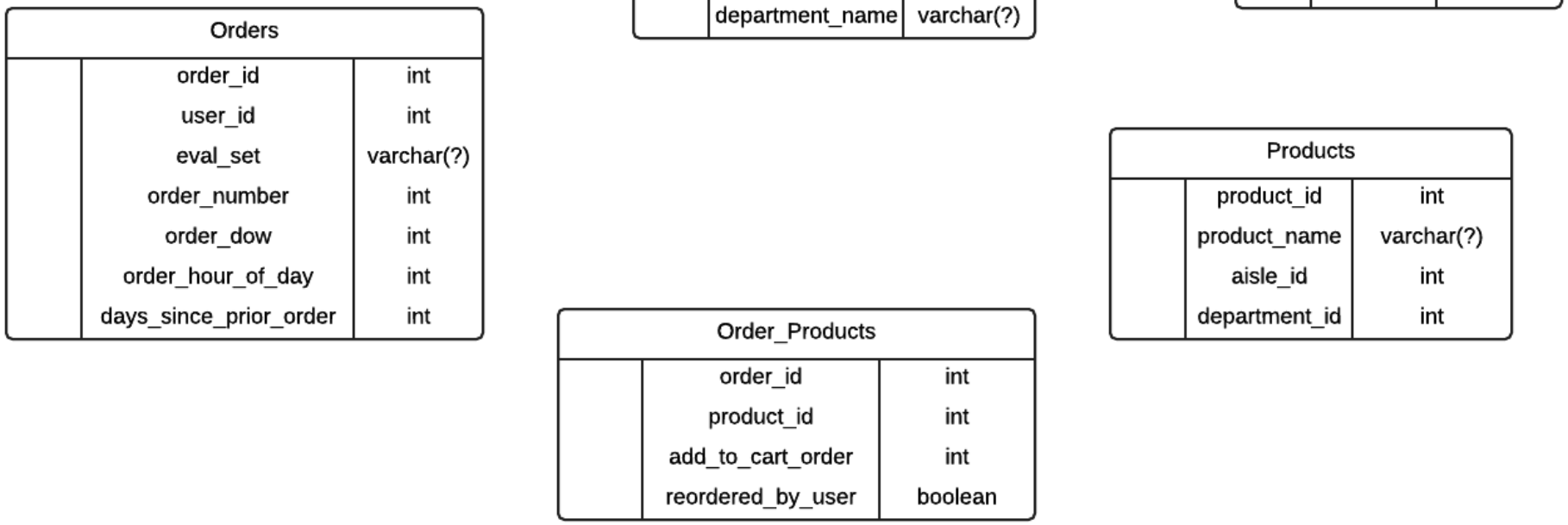
A) Yes

B) No

5) An INNER JOIN requires one of the joined columns to be a primary key.

A)True
B)False

Instacart Entities with Attributes



Instacart Entities with PKs

Orders		
PK	order_id	int
	user_id	int
	eval_set	varchar(?)
	order_number	int
	order_dow	int
	order_hour_of_day	int
	days_since_prior_order	int

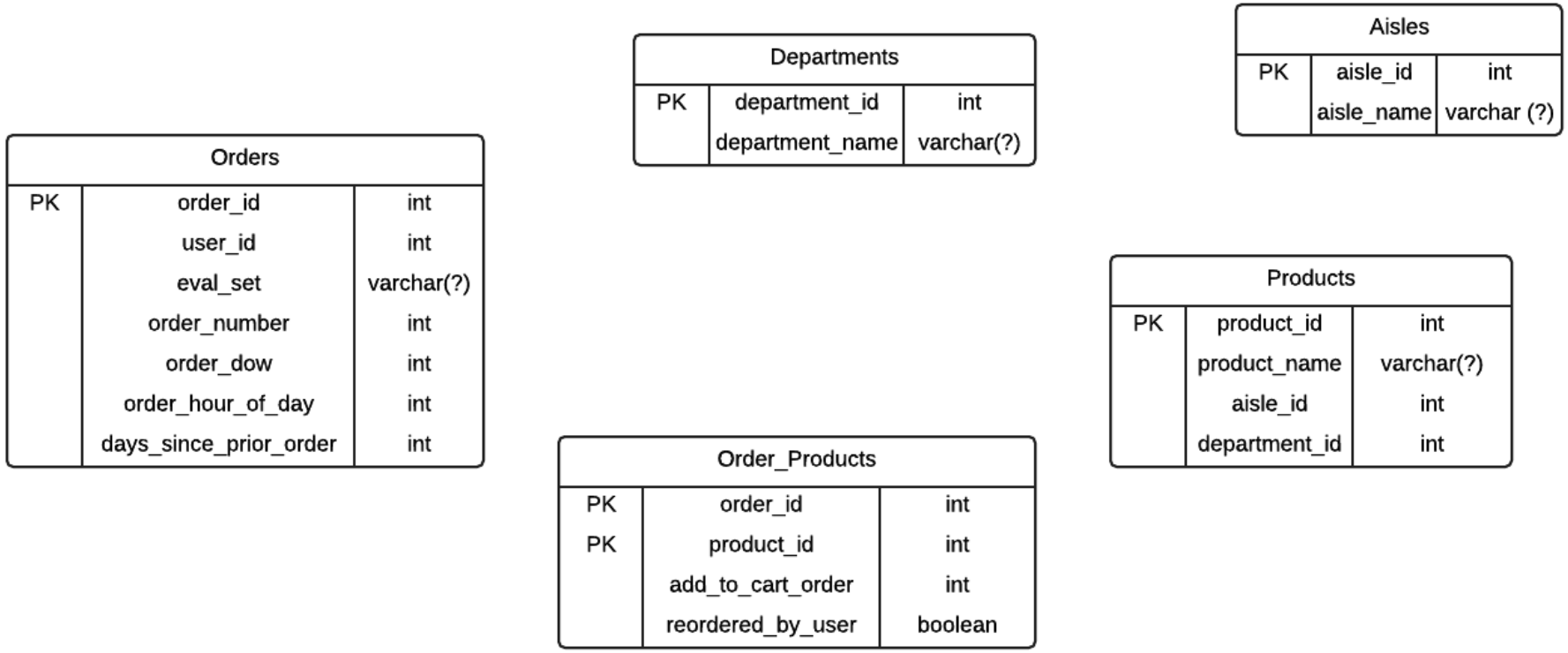
Departments		
PK	department_id	int
	department_name	varchar(?)

Aisles		
PK	aisle_id	int
	aisle_name	varchar (?)

Products		
PK	product_id	int
	product_name	varchar(?)
	aisle_id	int
	department_id	int

Order_Products		
PK	order_id	int
PK	product_id	int
	add_to_cart_order	int
	reordered_by_user	boolean

Practice Problem 1: Find the FKs in the schema



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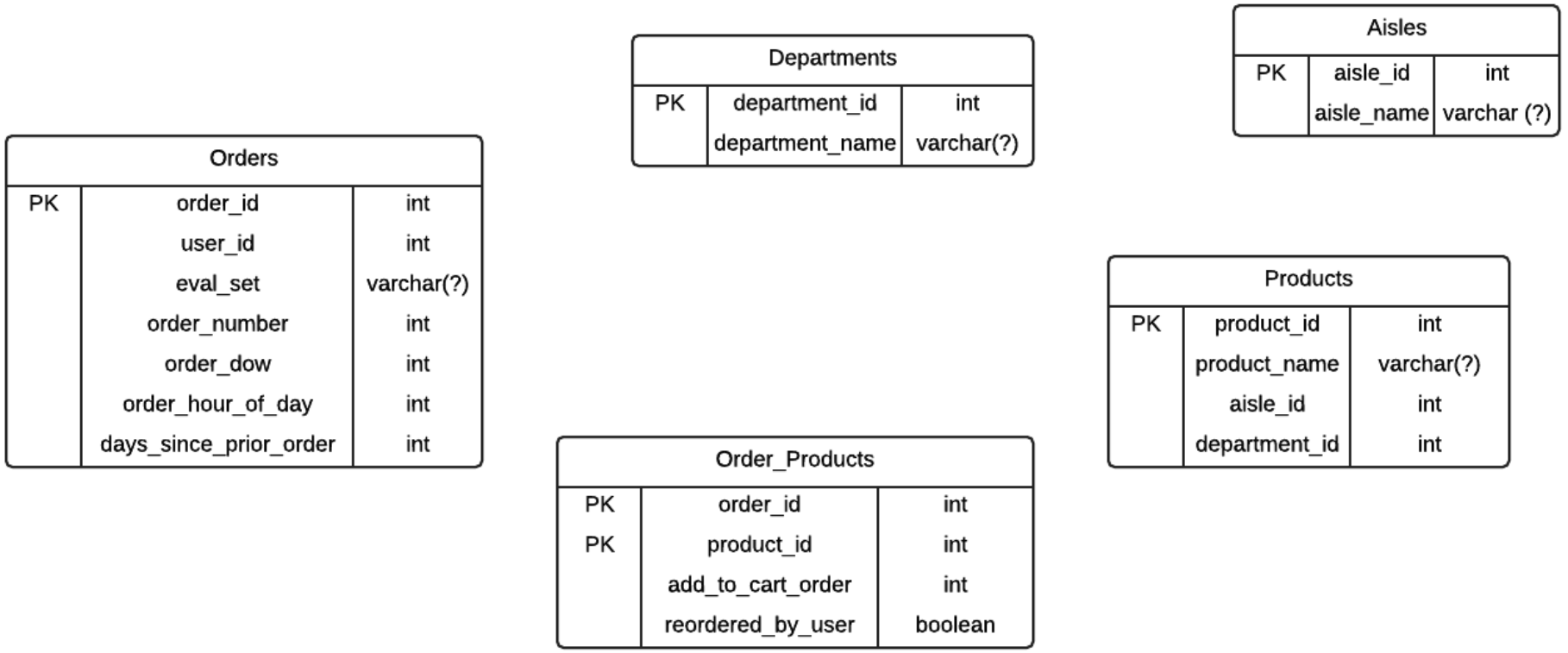
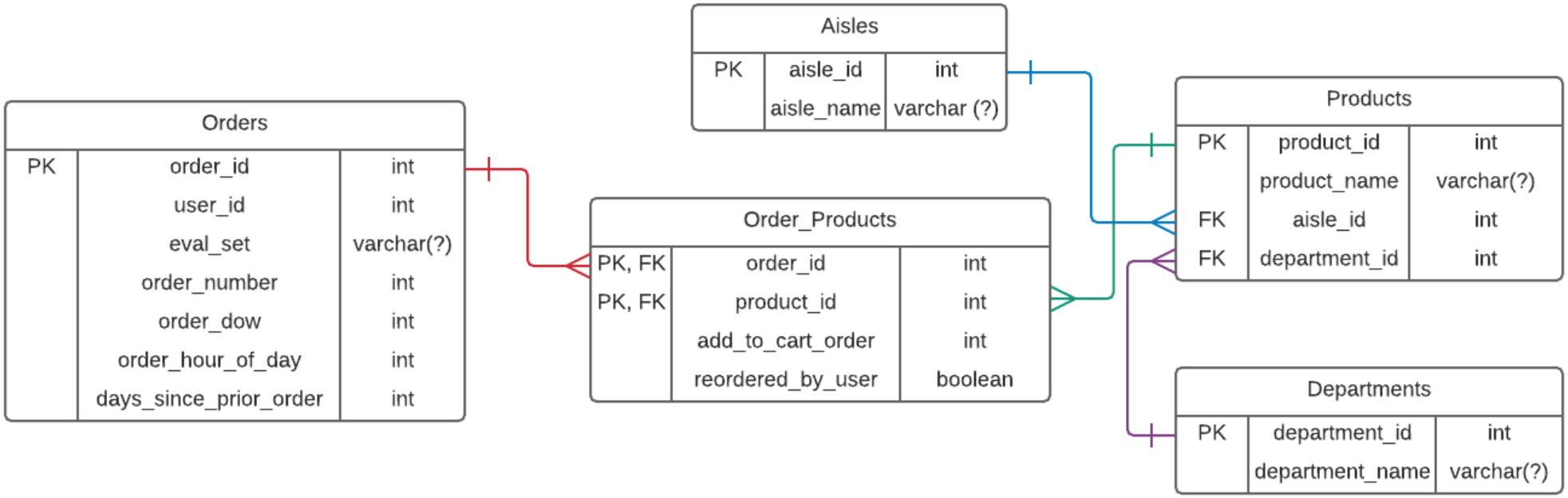


How many FKs does this schema have?

A. 1 B. 2 C. 3 D. 4 E. 5

Practice Problem 1: Solution



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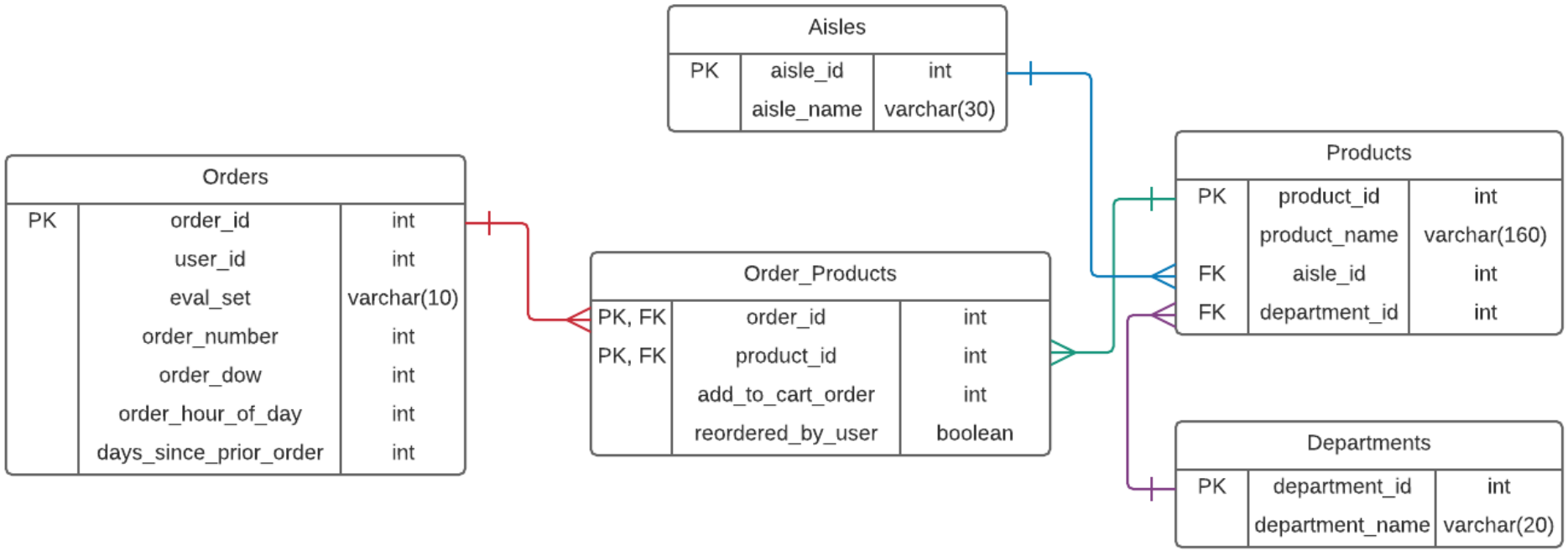
Practice Problem 2: Find all customers who have placed large orders with 100+ products. Hint: add_to_cart_order.



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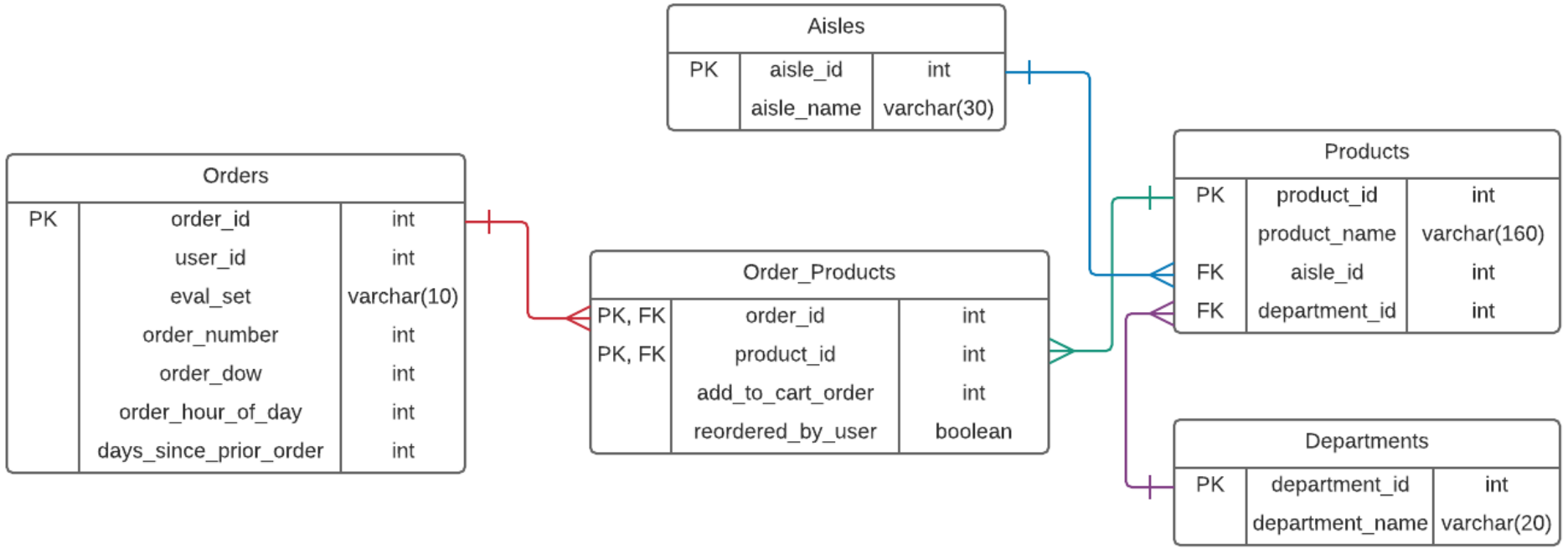

How many customers placed large orders?

A. <15 customers

B. 16-50 customers

C. 51-100 customers

D. >100 customers

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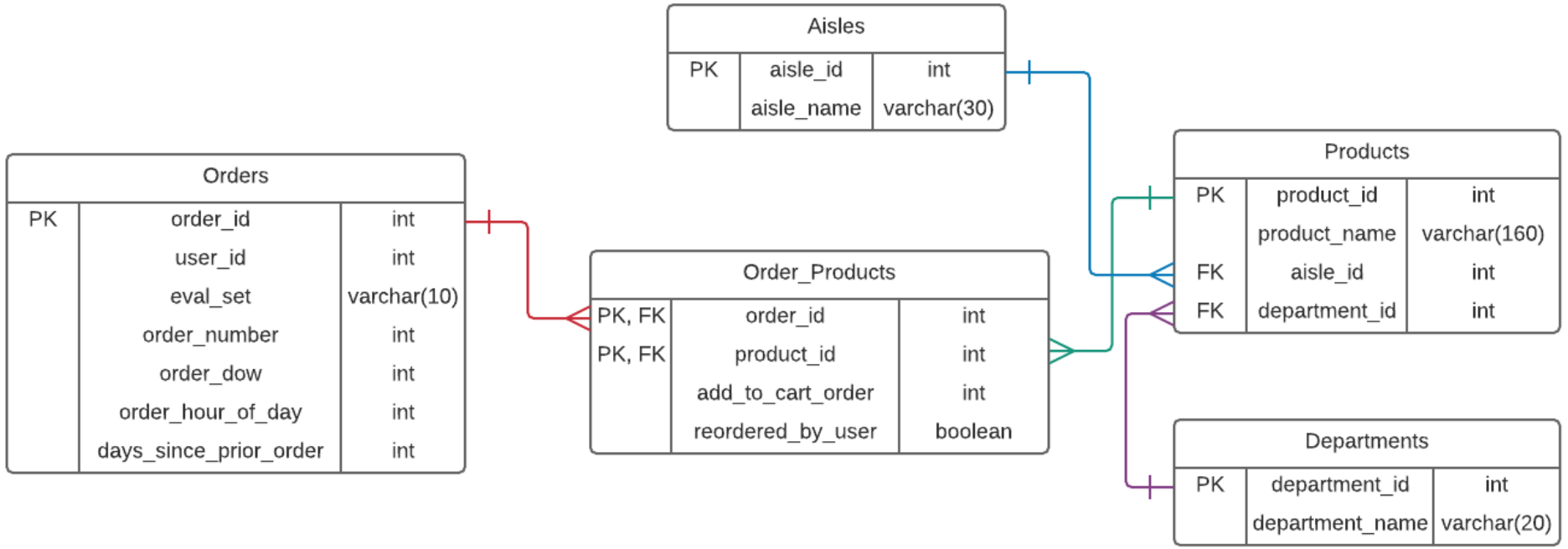

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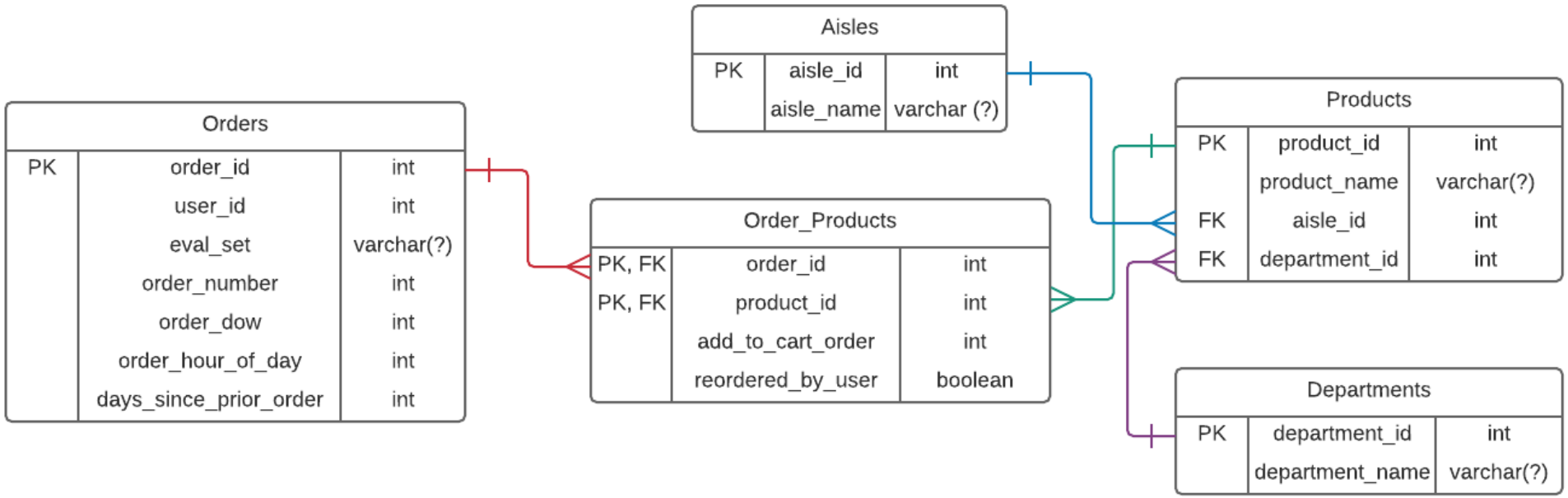
Practice Problem 3: Find all products that have the word ‘Cereal’ in their name.



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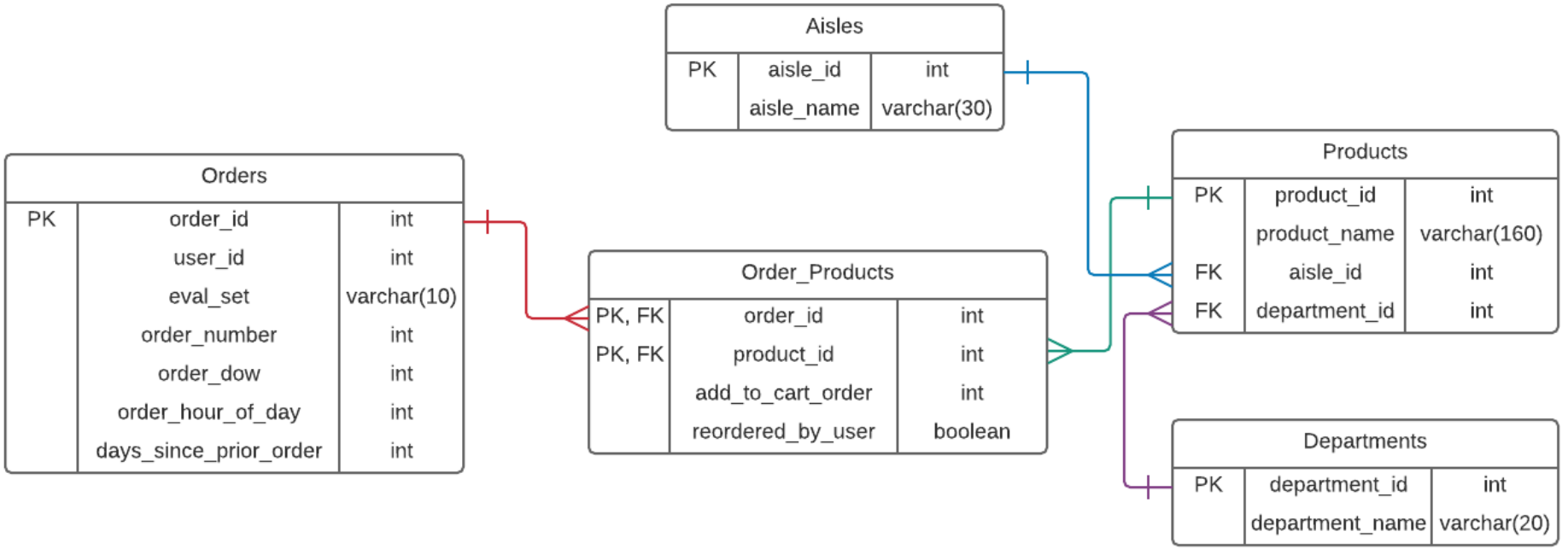

How many results were returned?

A. 1-100 cereals

B. 101-300 cereals

C. 301-500 cereals

D. 501+ cereals

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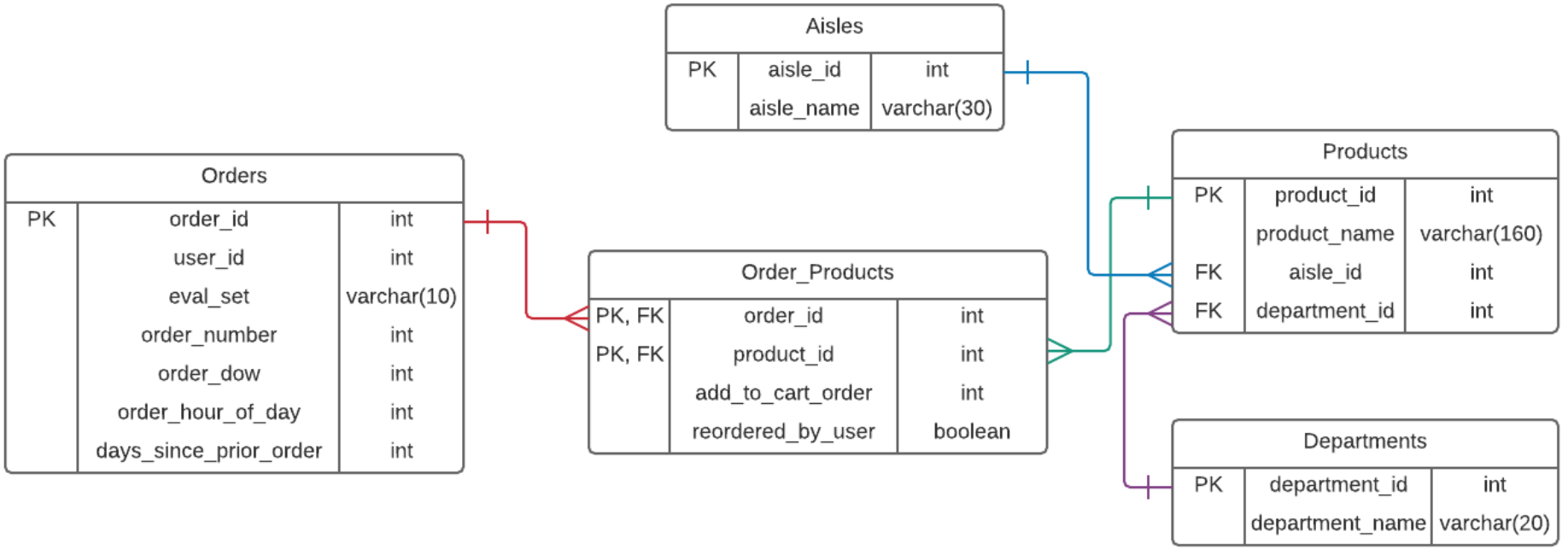

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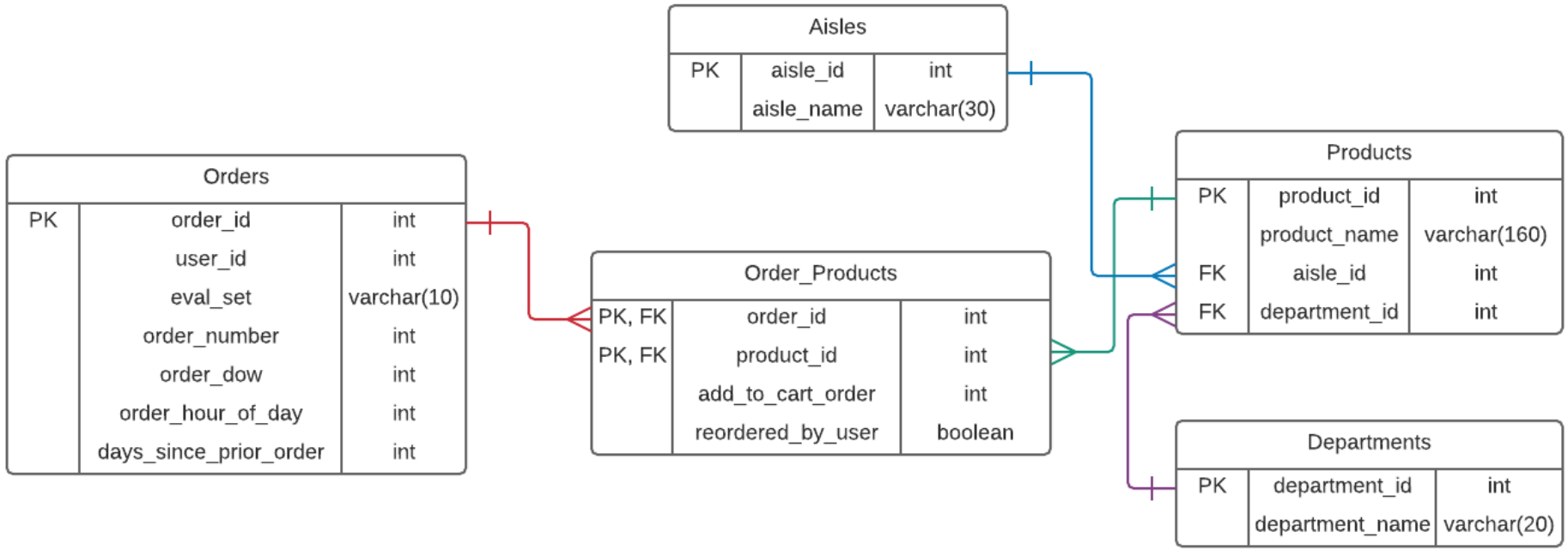

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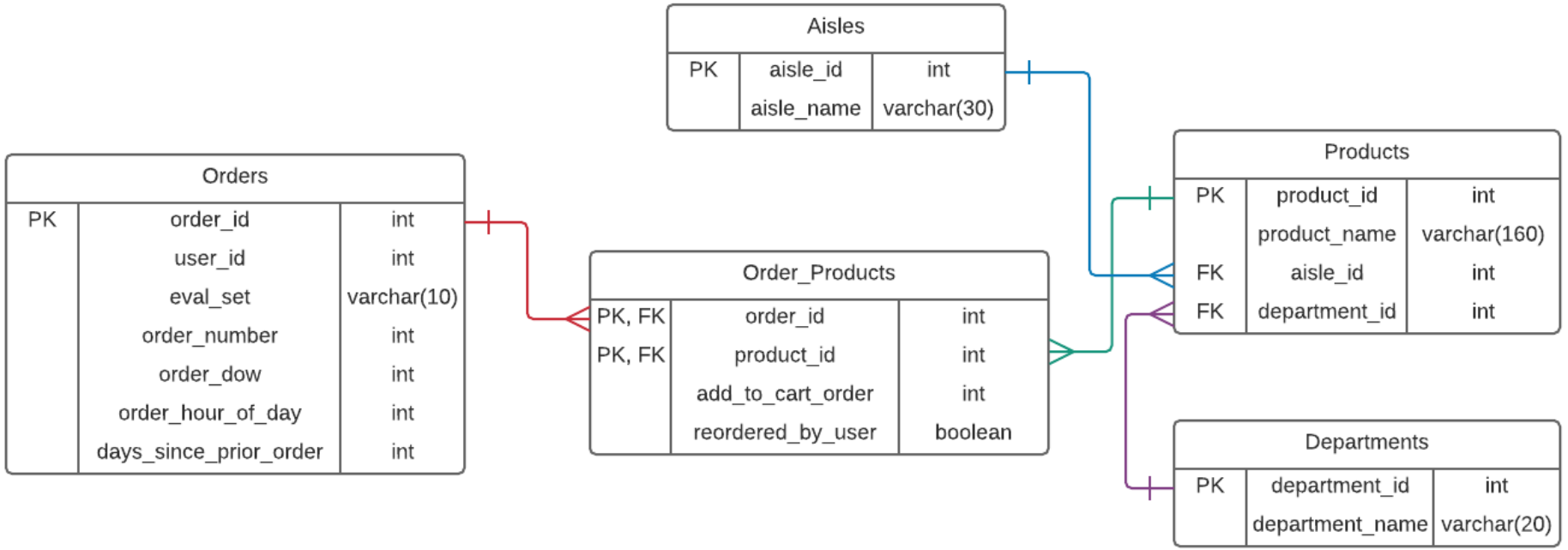

How many customers were returned?

A. ~1000 customers

B. ~2000 customers

C. ~3000 customers

D. 4000+ customers

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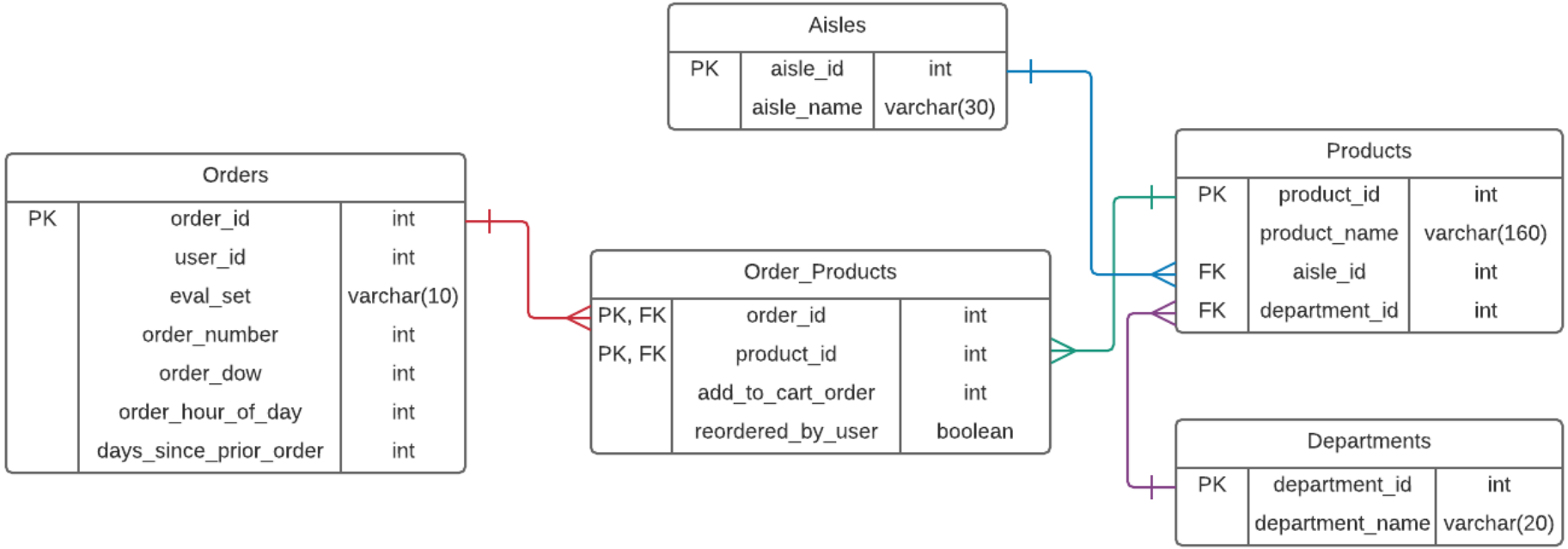

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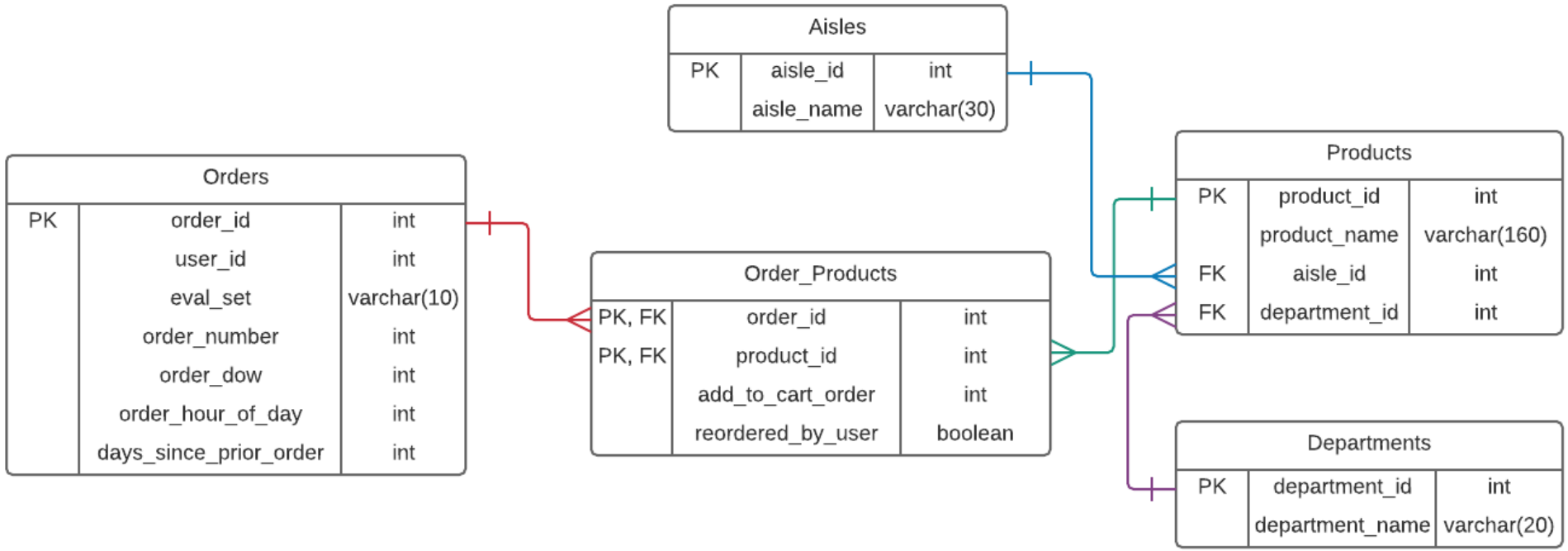

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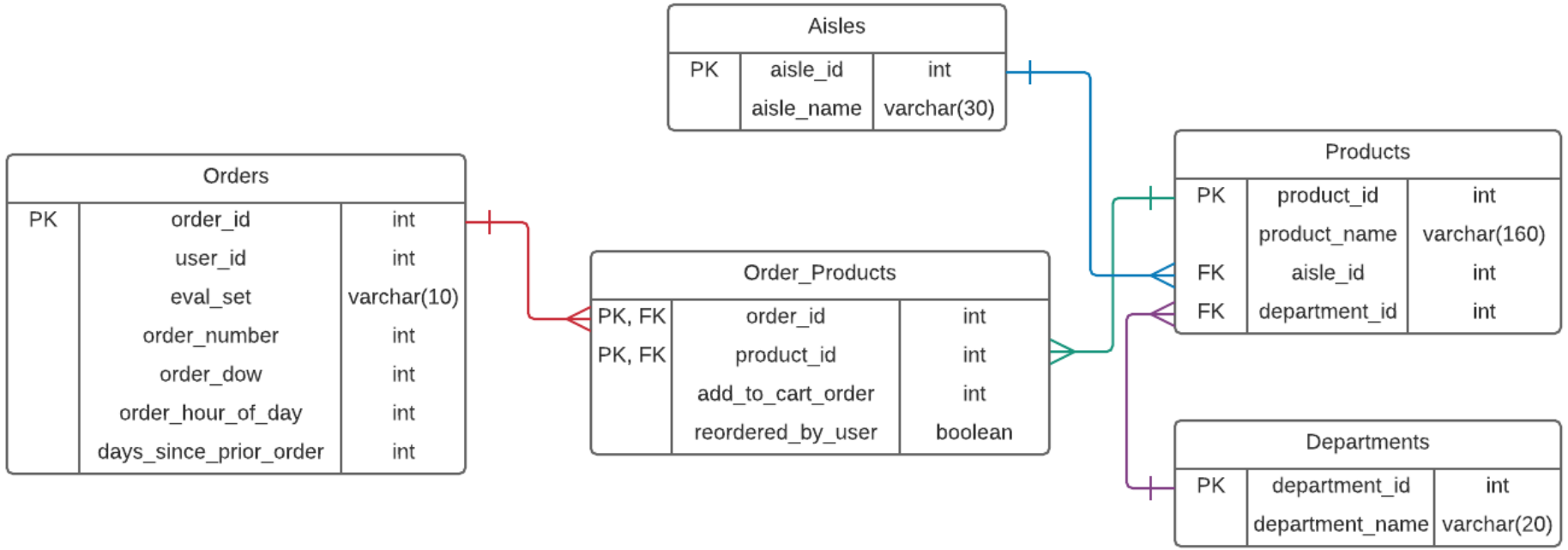

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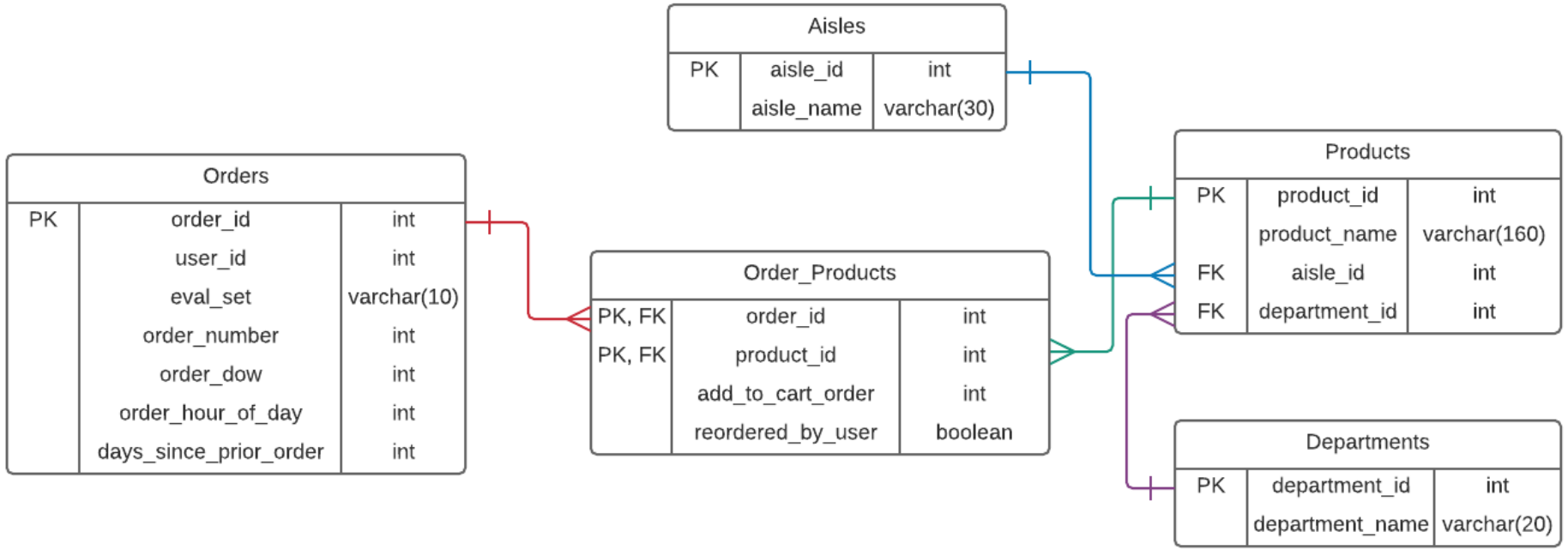

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