Querying Data with SQL Server

Selecting Data

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Data Analyst

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You'll learn how to retrieve data from relational databases.

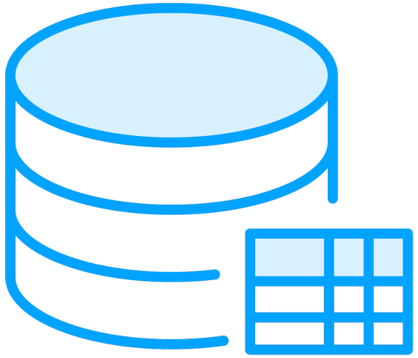
Audience

Data analyst

Business analyst

Product manager

Uncovered Topics



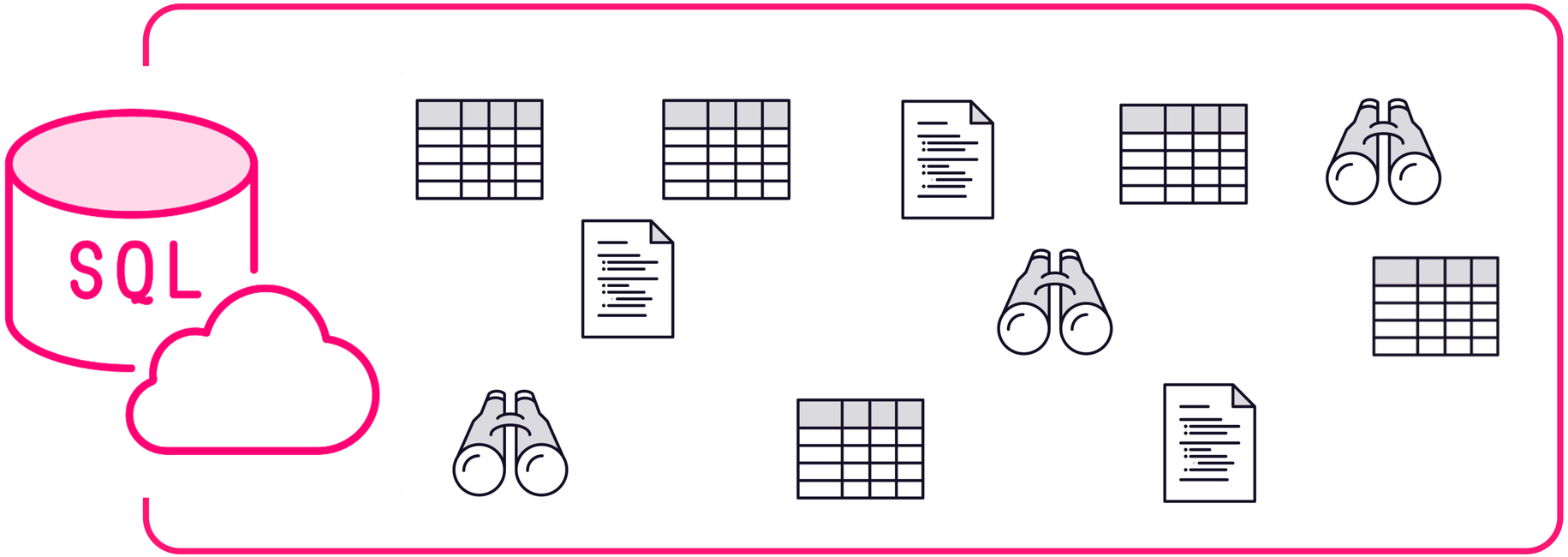
Creating databases

Adding/ Removing data

LOGS
[A,B,C]
[1,2,3]

SQL

SQL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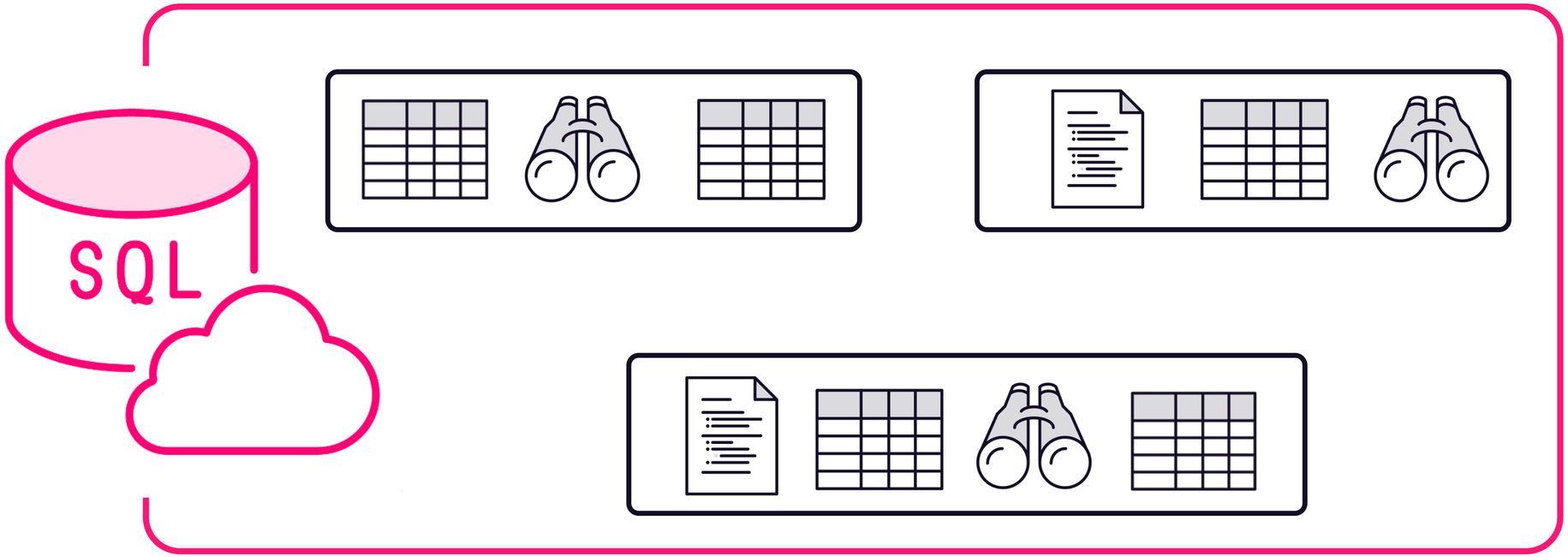
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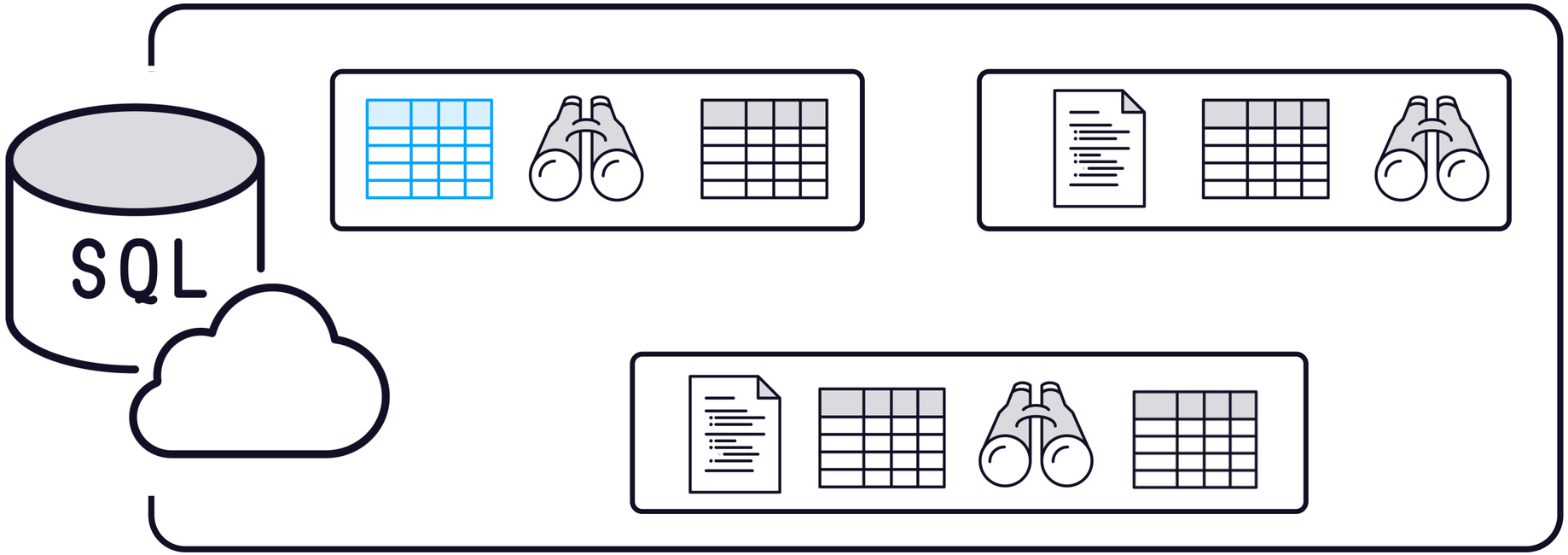
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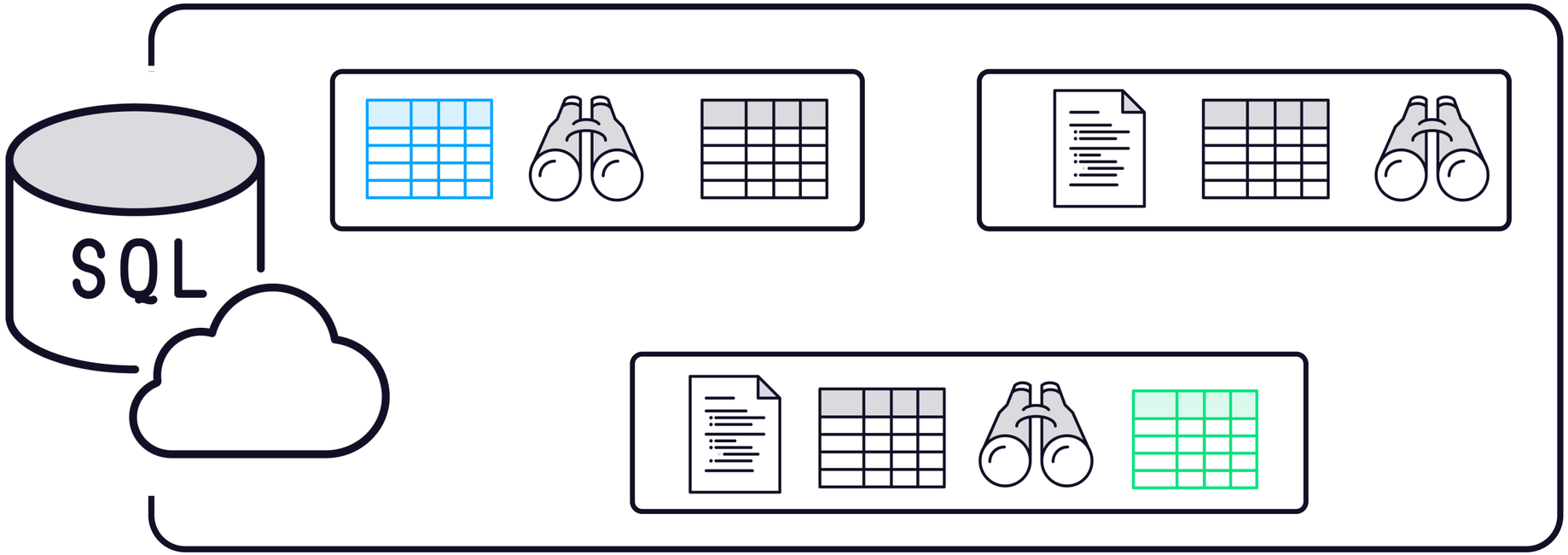
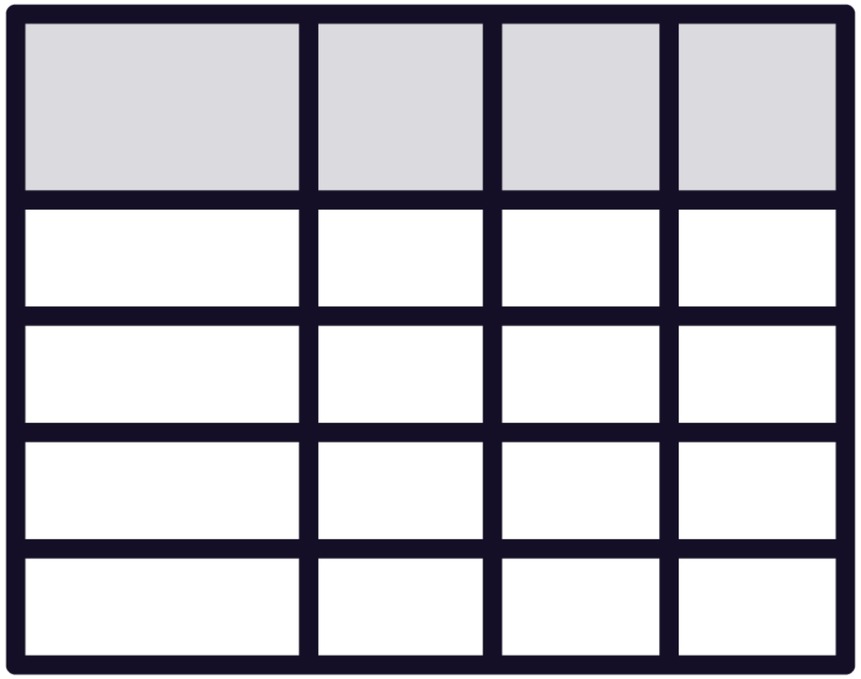

SQL

Relations



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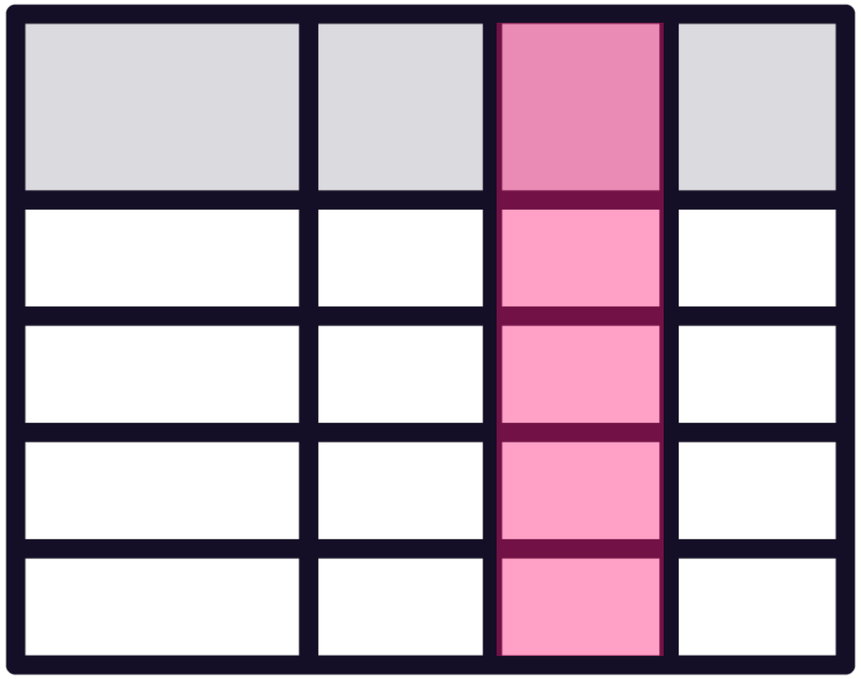

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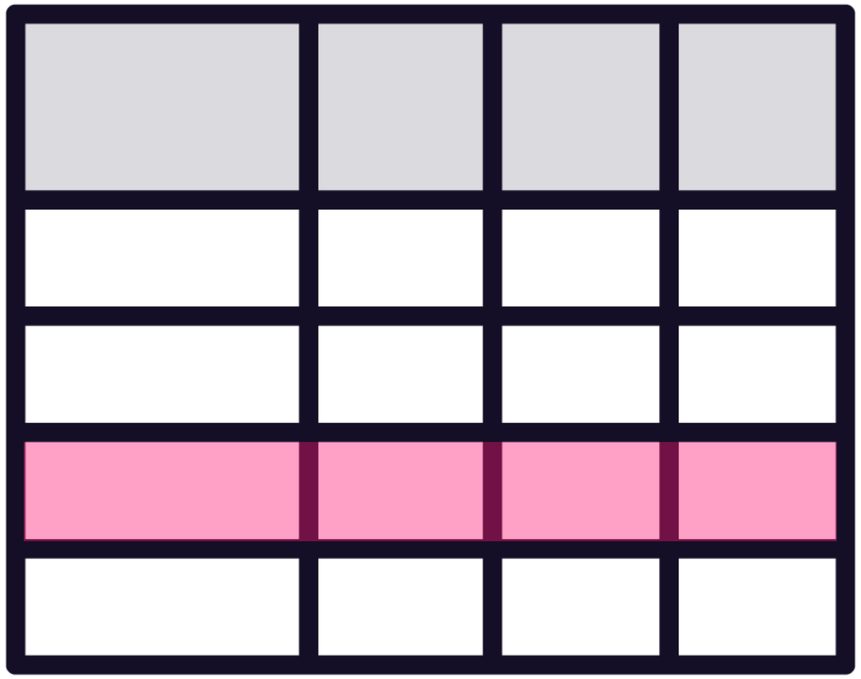
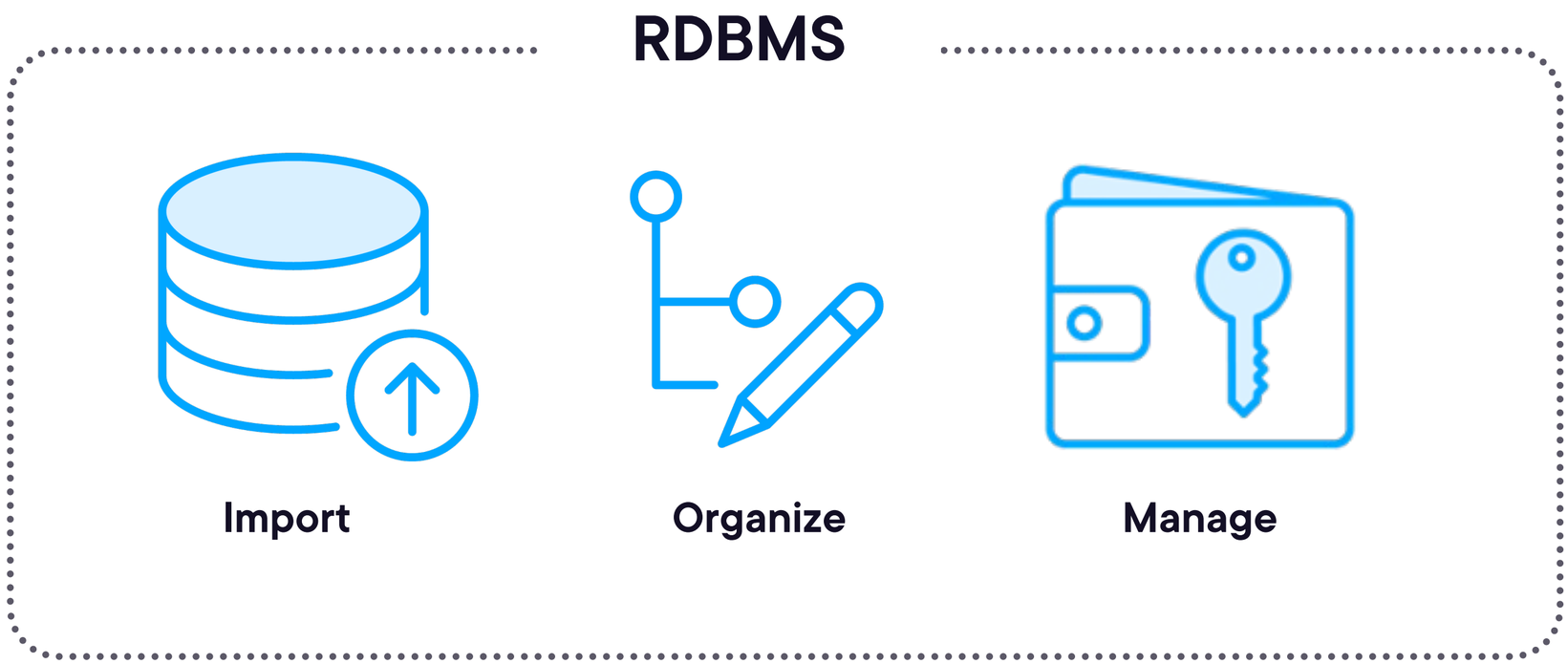
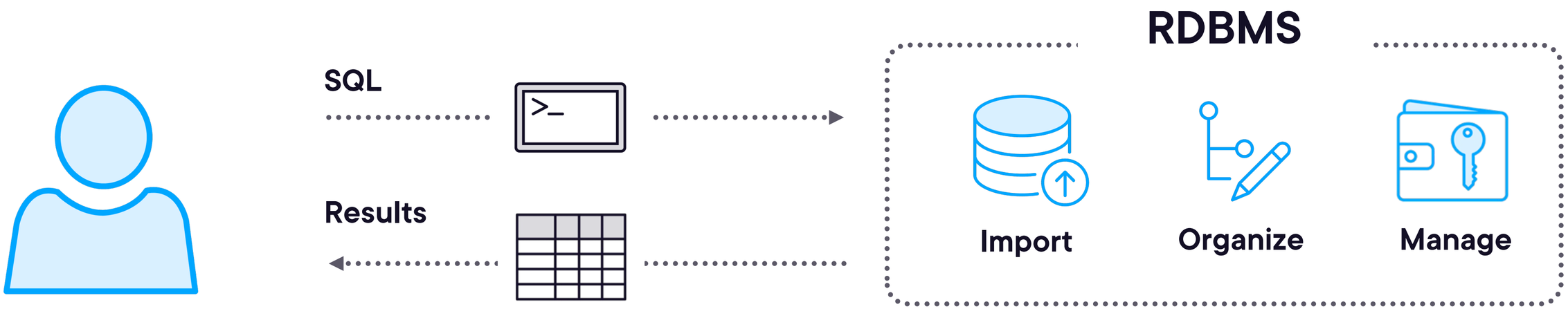


Relational Database Management System



Microsoft SQL Server
Oracle Database
MySQL

Querying Data



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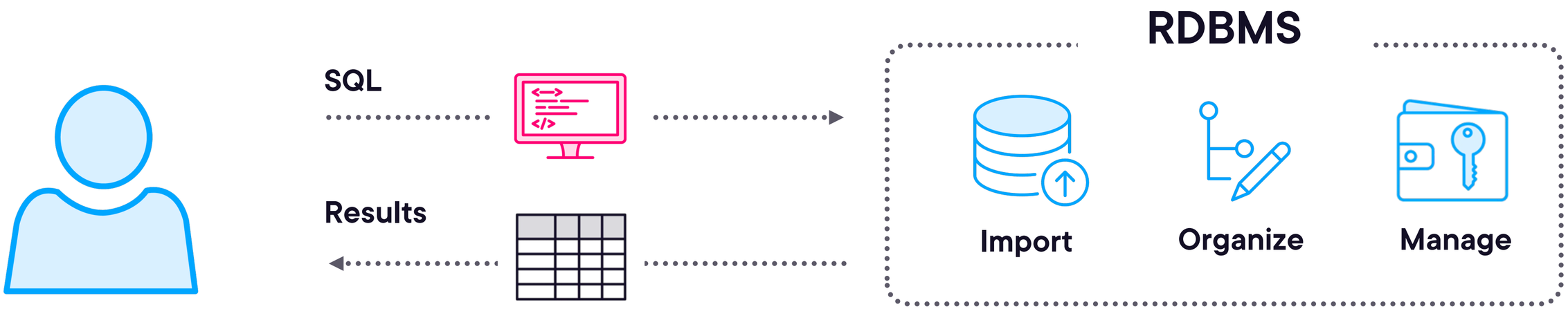
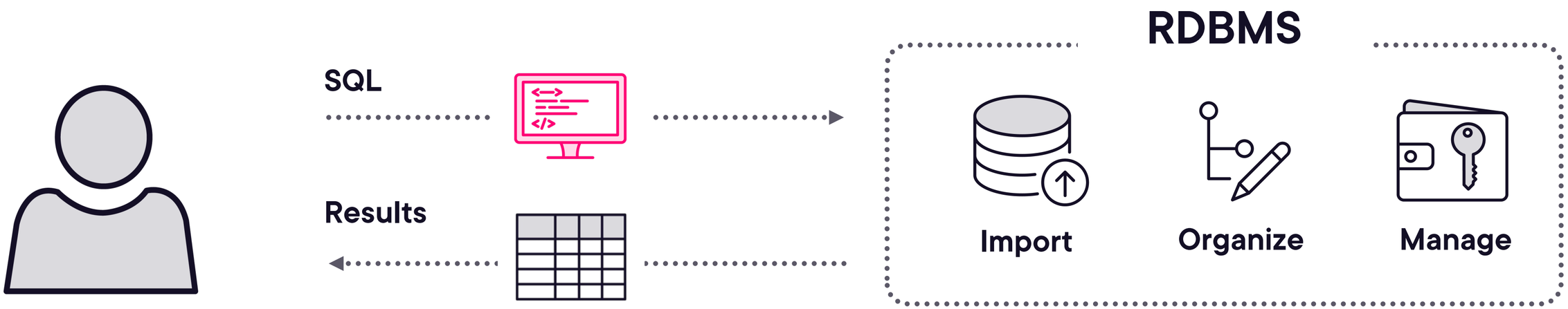


Querying Data



RDBMS and Database Tools

Microsoft SQL Server	Oracle Database	MySQL
SQL Server Management Studio	Oracle SQL Developer	MySQL Workbench

Standard SQL

It follows the American National Standards Institute (ANSI) standards, as well as the standards built by the International Organization for Standardization (ISO).

SQL Dialects

Microsoft	Oracle
T-SQL	PL/SQL

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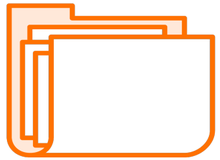
Tools

Microsoft SQL Server

SQL Server Management Studio



Exercise files

Overview

Connect to the database

Query structure

Retrieve data while applying filters

Sample Database

- Adventure Works
- They sell bikes, clothing and equipment

You are a new analyst in the company.

- You have access to the relational database
- You are interested in customer behavior and buying pattern

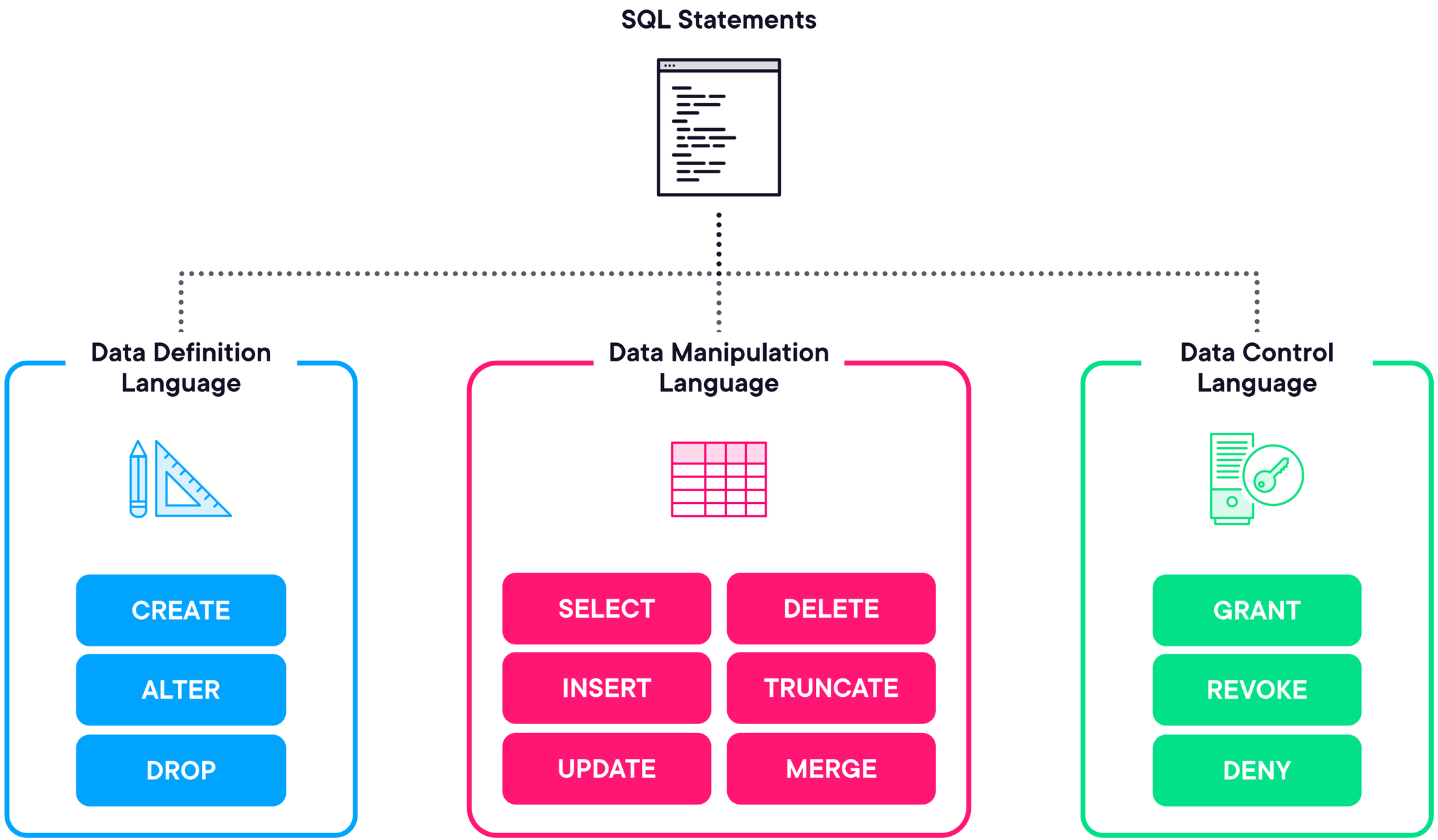
Demo

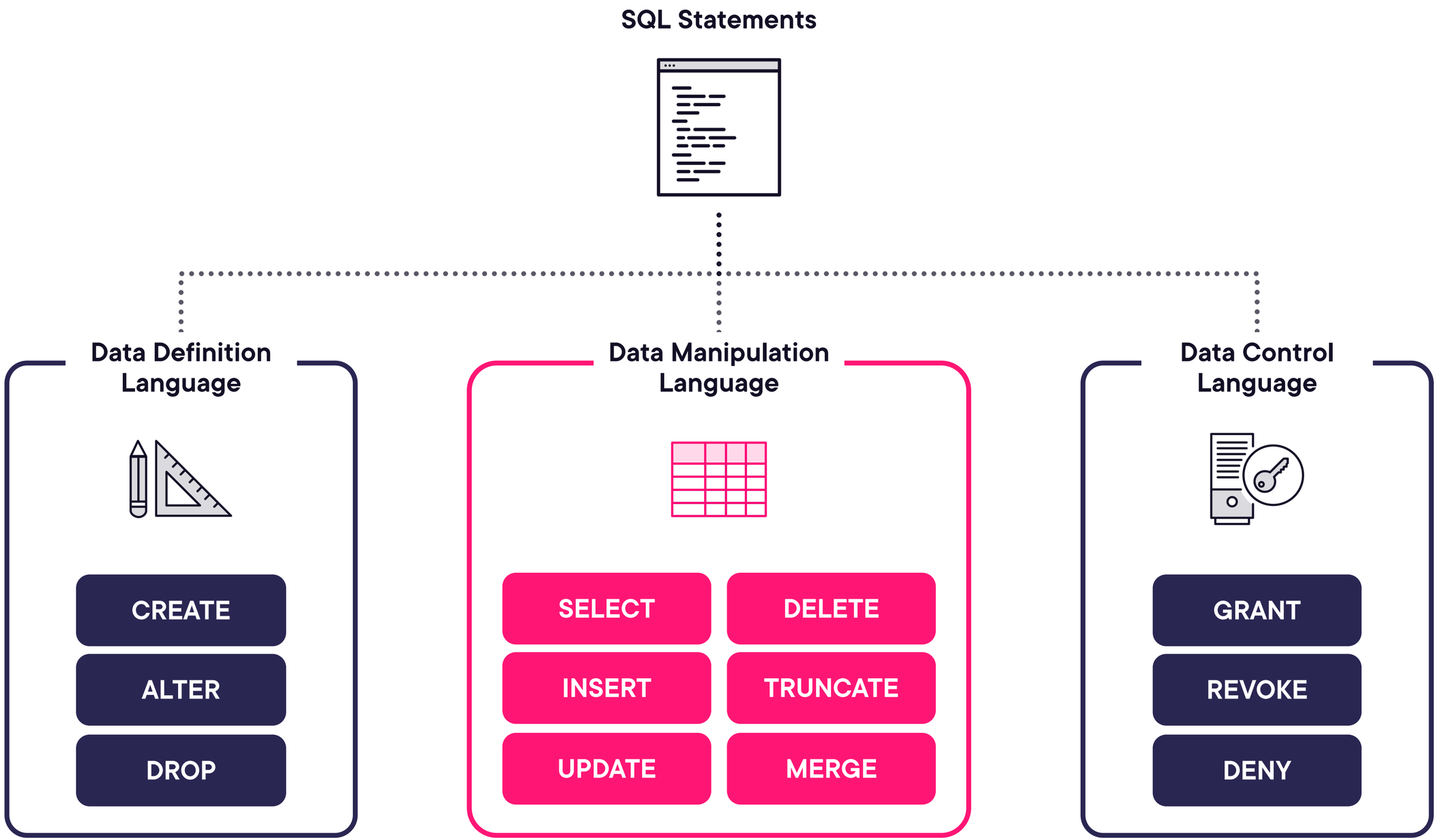
Explore AdventureWorks database

Download

- Microsoft SQL Server
- SQL Server Management Studio
- Exercise files

SQL Terminology


SQL Statements
Data Definition Language
CREATE
ALTER
DROP
Data Manipulation Language
SELECT
DELETE
INSERT
TRUNCATE
UPDATE
MERGE
Data Control Language
GRANT
REVOKE
DENY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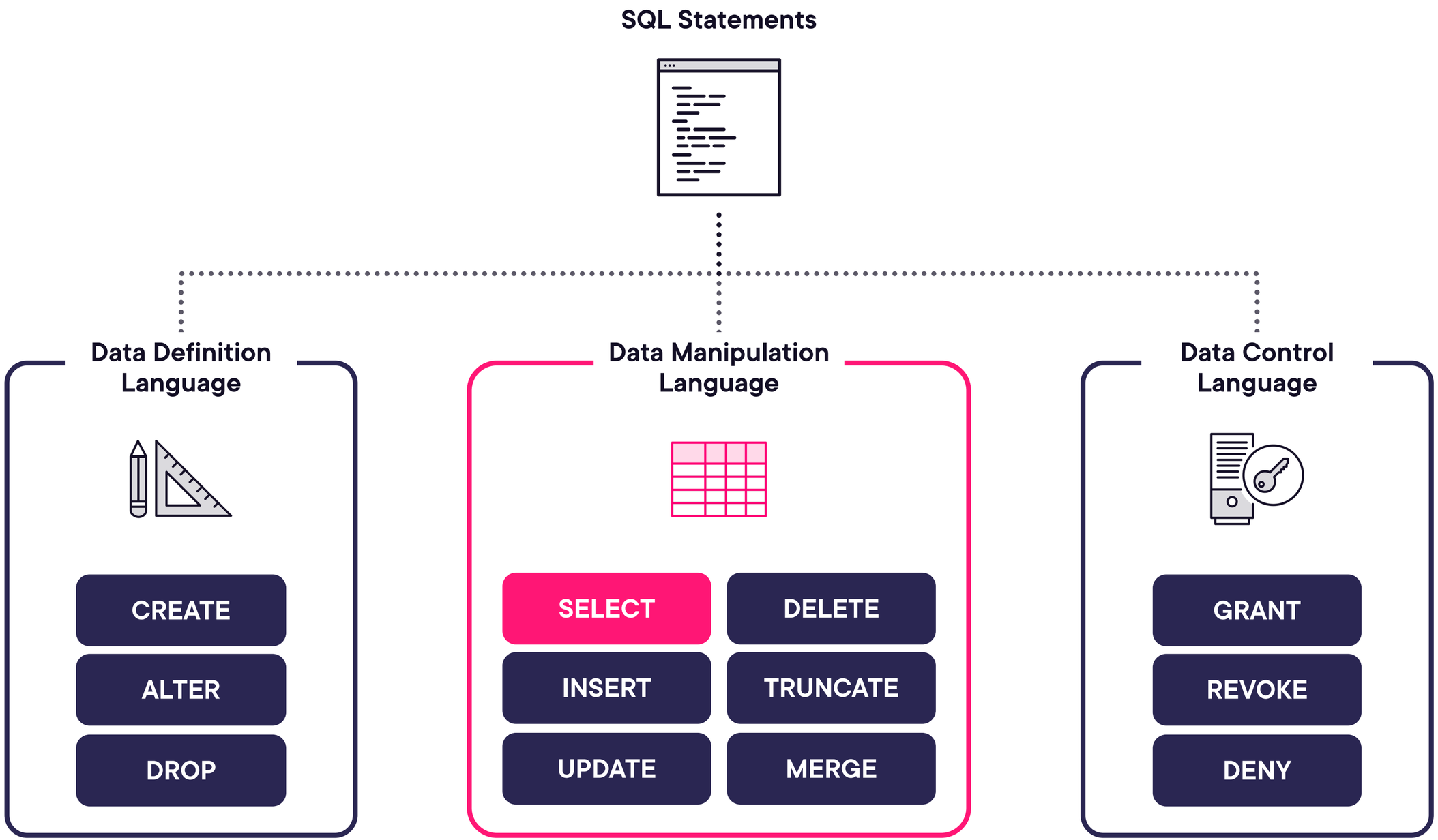
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SELECT Statement

Query

Manipulate

Return

SQL Query

```
SELECT OrderDate, COUNT(OrderNumber) AS Orders
FROM Orders
WHERE SalesTeritorry = ‘USA’
GROUP BY OrderDate
HAVING COUNT(OrderNumber) > 1
ORDER BY OrderDate DESC;
```

A query is a special type of statement used to retrieve data.

SQL Query

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FROM

WHERE

GROUP BY

HAVING

SELECT

ORDER BY

Orders

Id	SalesTeritorry	OrderNumber	OrderDate	Amount
1	USA	16262	01012023	550
2	Canada	14125	04062023	150
3	USA	41513	15052023	120
4	Germany	85678	20072023	900
5	USA	59127	01012023	330
6	USA	19527	15152023	480
7	USA	68310	06062023	500

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Fully Qualified Object Names

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server.database.schema.object
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5	USA	59127	01012023	330
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7	USA	68310	06062023	500

```
SELECT OrderDate, COUNT(OrderNumber) AS Orders
FROM Orders
WHERE SalesTeritorry = 'USA'
GROUP BY OrderDate
HAVING COUNT(OrderNumber) > 100
ORDER BY OrderDate DESC;
```

Orders

Id	SalesTeritorry	OrderNumber	OrderDate	Amount
1	USA	16262	01012023	550
3	USA	41513	15052023	120
5	USA	59127	01012023	330
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```
SELECT OrderDate, COUNT(OrderNumber) AS Orders
FROM Orders
WHERE SalesTeritorry = 'USA'
GROUP BY OrderDate
HAVING COUNT(OrderNumber) > 100
ORDER BY OrderDate DESC;
```

OrderDate	COUNT(OrderNumber)
01012023	2
15052023	2
06062023	1

```sql
SELECT OrderDate, COUNT(OrderNumber) AS Orders
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WHERE SalesTeritorry = 'USA'
GROUP BY OrderDate
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OrderDate	COUNT(OrderNumber)
01012023	2
15052023	2

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OrderDate	COUNT(OrderNumber)
15052023	2
01012023	2

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SELECT OrderDate, COUNT(OrderNumber) AS Orders
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```
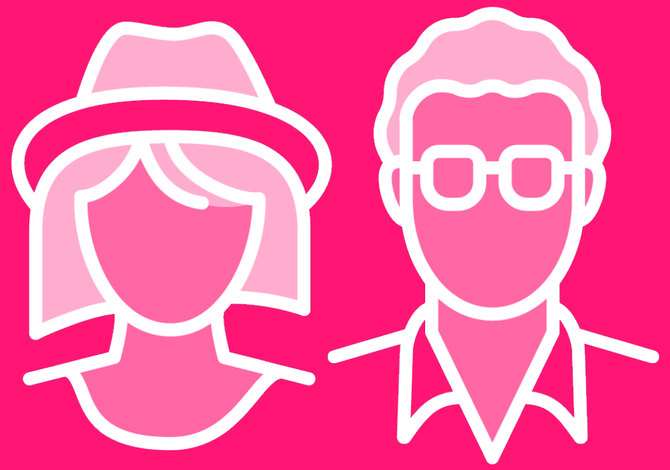
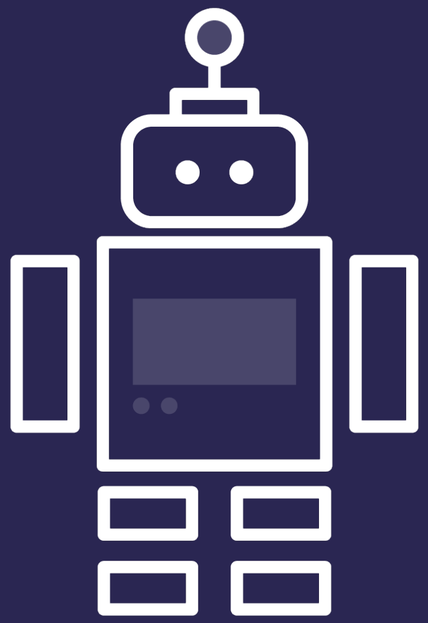

SQL is a declarative language.

Query Syntax Order



Logical Query Processing Order



Coding Style

Case-insensitive

;

Whitespaces

Demo

Query customer data

Demo

Filter data

- WHERE clause

Summary

SQL or Structured Query Language

- Declarative language

Execution order of clauses in a query

- FROM clause in evaluated first

Retrieve data from a single table

Filter data

- Comparison operators
- Logical operators
- Wildcards
- Keywords

Up Next:

Aggregating Data