

SQL

Fundamentals

Alish Bista - 08/18/2025

What is SQL?

What is SQL?

The Language of The Database World

- **SQL** stands for Structured Query Language
- Used to run a query (ask a question) against the data in a database
- Usually, you will write a query in a plain English-like format and get a result set in table-like format



Basic Keywords

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ABC of SQL

- **SELECT**
- **FROM**
- **WHERE**



First Query

First Query

First Steps

SELECT *

FROM orders

WHERE order_date > '08/01/2025'

SELECT customer_id

FROM orders

WHERE order_date > '08/01/2025'

SELECT customer_id, order_id, order_date

FROM orders

WHERE order_date > '08/01/2025'



Basic Keywords

ABCD of SQL

- **SELECT**
- **FROM**
- **WHERE**
- **JOIN**



Understanding Relationships

Understanding Relationships

Maintaining Relationships Between Tables

- Tables link with each other with common keys (stored in fields)
- Common Relationships:** One to Many, Many to One
- Rare Relationships:** One to One, Many to Many

Customer Key	WWI Customer ID	Customer	Bill To Customer	Category	Buying Group	Primary Contact	Postal Code
0	0	0 Unknown	N/A	N/A	N/A	N/A	N/A
1	1	1 Tailspin Toys	Tailspin Toys (Head	Novelty Sho	Tailspin Toys	Waldemar Fisar	90410
2	2	2 Tailspin Toys	Tailspin Toys (Head	Novelty Sho	Tailspin Toys	Lorena Cindric	90216
17	17	17 Tailspin Toys	Tailspin Toys (Head	Novelty Sho	Tailspin Toys	Adam Kubat	90416
18	18	18 Tailspin Toys	Tailspin Toys (Head	Novelty Sho	Tailspin Toys	Isabelle Vodlan	90321
19	19	19 Tailspin Toys	Tailspin Toys (Head	Novelty Sho	Tailspin Toys	Mithun Bhattachary	90303

Sale Key	City Key	Customer Key	Bill To Cus Stock Item	Invoice Date	K Delivery Date	Salespersc	WWI Invo	Descriptio	Package	Quantity	Unit Price	Tax Rate	Total Excl Tax	Amou	Profit	Total Incl	Total Dry	I Total	Chill	Lineage	Ke
49265	41568	0	0	204	10/22/2013	10/23/2013	83	15189	DBA joke r Each	6	13	15	78	11.7	51	89.7	6	0	11		
49372	48937	0	0	173	10/22/2013	10/23/2013	83	15218	Developer Each	6	13	15	78	11.7	51	89.7	6	0	11		
50379	91464	0	0	174	10/28/2013	10/29/2013	70	15525	Developer Each	6	13	15	78	11.7	51	89.7	6	0	11		
57026	72808	19	1	149	12/5/2013	12/6/2013	86	17555	Ride on to Each	3	230	15	690	103.5	255	793.5	3	0	11		
57027	72808	19	1	43	12/5/2013	12/6/2013	86	17555	Shipping ca Each	100	1.05	15	105	15.75	50	120.75	100	0	11		
56817	89450	20	1	82	12/4/2013	12/5/2013	19	17488	Furry anim Pair	24	5	15	120	18	84	138	24	0	11		

Second Query

Second Query

Something From Here, Something From There

```
SELECT customers.customer_name, orders.order_id  
FROM orders  
JOIN customers  
  ON orders.customer_id = customers.customer_id  
WHERE order_date > '08/01/2025'
```

