

The Origins of SQL

Where did SQL come from?

Why do we study SQL?

Old Technology?



But Still Widely In Use !



Old Technology ?

Relational Database Technology

- Invented in the 1970's – almost 50 years ago...
- Yet about 70% of databases in use in industry are relational
- Industry spent over \$30 Billion on relational database software* (2020)
- SQL is one of the most in-demand tech skills in the marketplace

* <https://www.t4.ai/industry/rdbms-market-share>

The Relational Model

Dr. Edgar F. Codd, mathematician, working for IBM published a paper* describing how relational mathematics could be used to store and process business data

- Data is stored in TABLES (“relations”)
- Tables are related to each other by keys
- Data in tables can be stored and retrieved using the structured query language
- SQL is based on the branch of mathematics called the relational algebra

* “A relational model for large shared data banks”, 1970, in the ACM journal.

The Relational Model

SQL was initially developed at IBM by Donald D. Chamberlin and Raymond F. Boyce based on Codd's ideas

IBM began developing commercial relational database software products based on Chamberlin and Boyce's work

- The System R prototype
- System/38 , SQL/DS, and DB2, commercially available in 1979, 1981, and 1983, respectively.

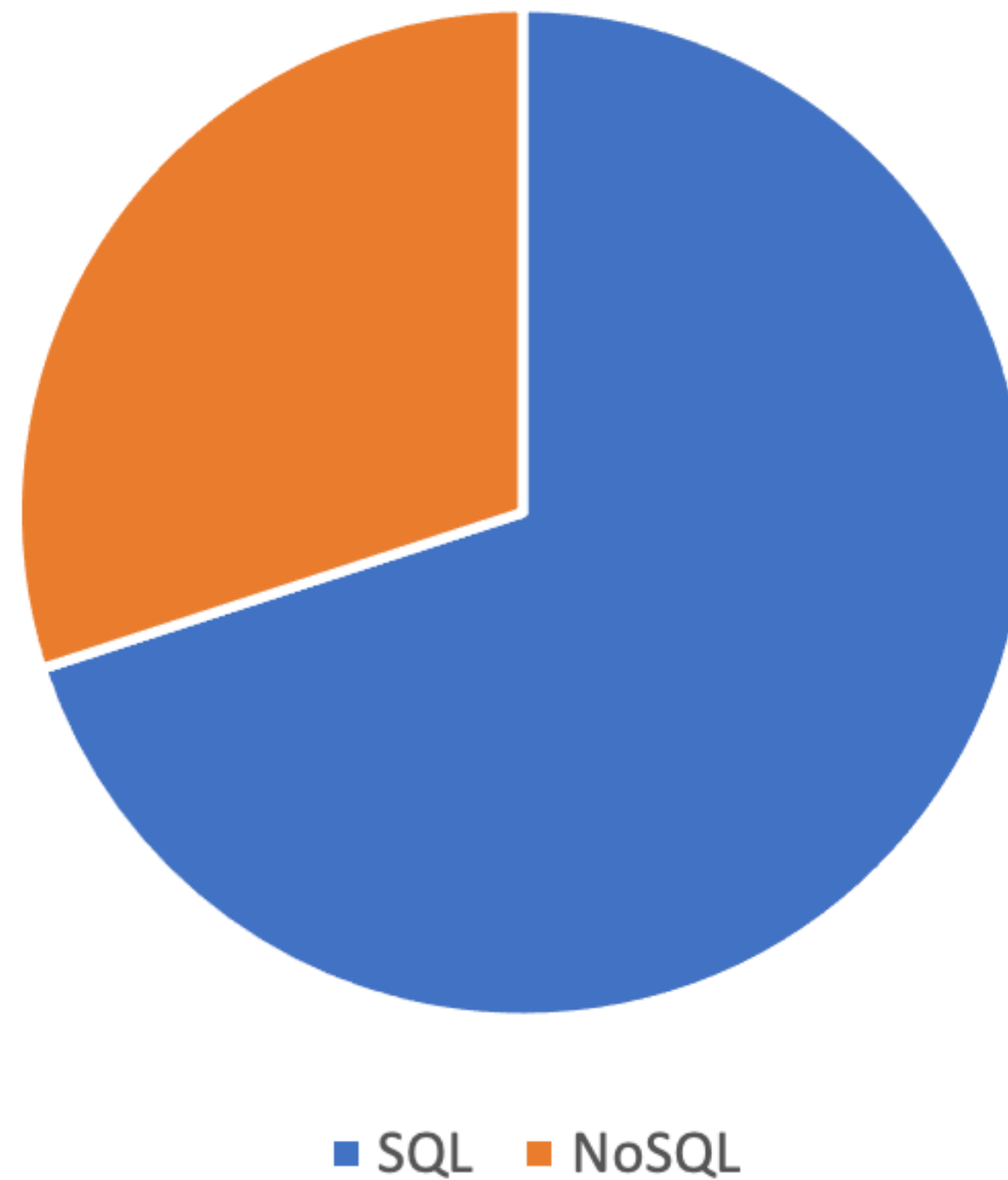
Relational Software, Inc. (now [Oracle Corporation](#)) leveraged the potential in the concepts described by Codd, Chamberlin, and Boyce

- Developed their own SQL-based [RDBMS](#)
- June 1979, Relational Software introduced one of the first commercially available implementations of SQL, [Oracle](#) V2 (Version2) for [VAX](#) computers.

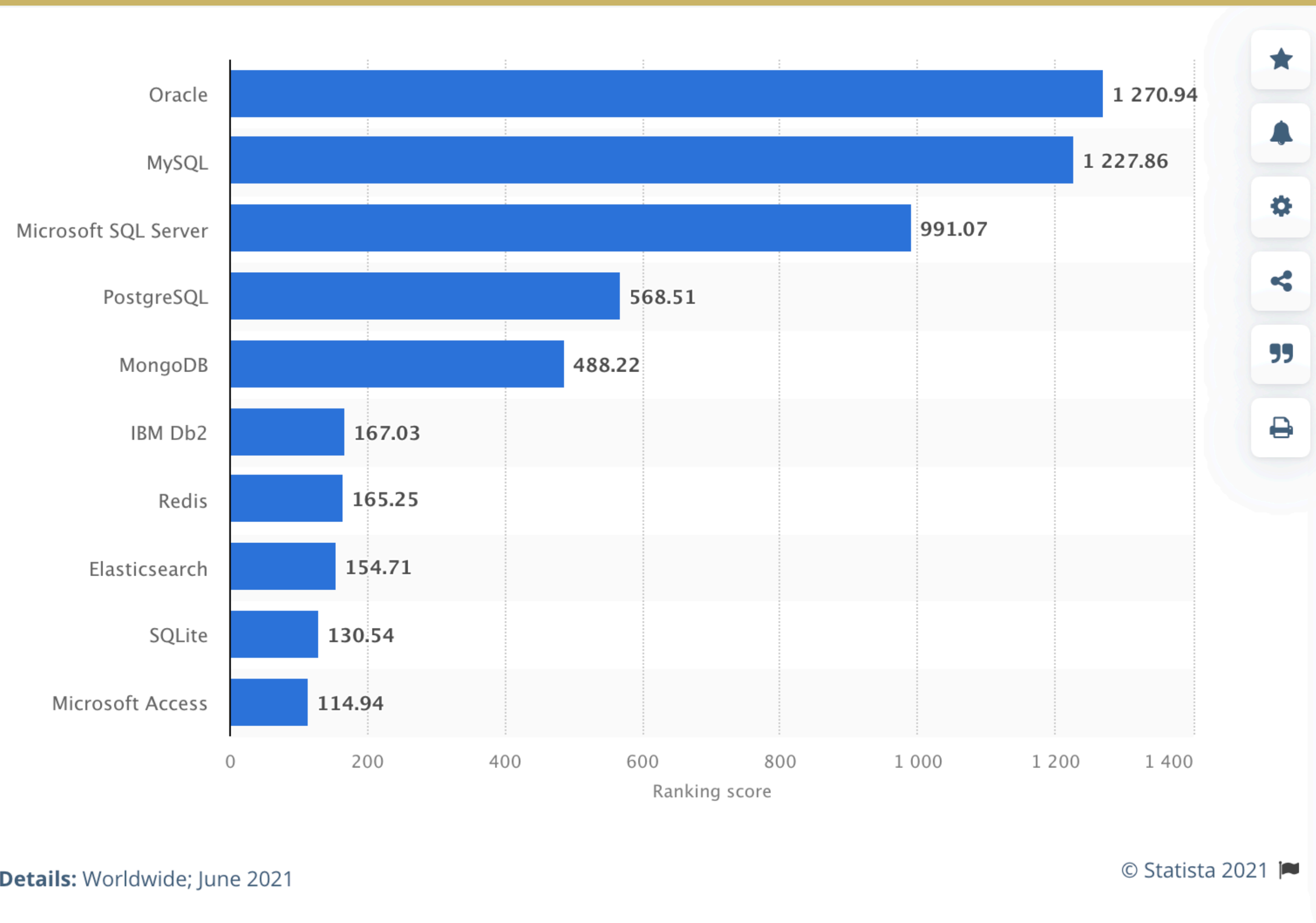
DBMS Software Use

Relational VS Non-Relational DBMS

As of 2020, relational DBMS products still hold about 70% marketshare with NoSQL (non-relational) DBMS products comprising about 30%



DBMS Software Use (statista.com)













In-Demand Job Skills (dice.com)

In-Demand Job Skills (July-Sept)

SKILL	POSTINGS
SQL	196,042
Java	167,356
JavaScript	117,722
Python	109,728
C#	70,932
C++	50,356
.NET	46,846



In-Demand Job Skills (TIOBE.com)

Dec 2021	Dec 2020	Change	Programming Language		Ratings	Change
1	3	⬆️		Python	12.90%	+0.69%
2	1	⬇️		C	11.80%	-4.69%
3	2	⬇️		Java	10.12%	-2.41%
4	4			C++	7.73%	+0.82%
5	5			C#	6.40%	+2.21%
6	6			Visual Basic	5.40%	+1.48%
7	7			JavaScript	2.30%	-0.06%
8	12	⬆️		Assembly language	2.25%	+0.91%
9	10	⬆️		SQL	1.79%	+0.26%
10	13	⬆️		Swift	1.76%	+0.54%

In Summary

- Relational Databases ("SQL") have been around since the 1970's
- Relational Databases still dominate the industry
- SQL language programming skills are still in high demand in the marketplace