# Donald D. Chamberlin

## Short Biography

### Image result for donald d chamberlinEducation and Overview

Donald D. Chamberlin was born on the 21st of December 1944 in San Jose, California. He is a retired electrical engineer, computer scientist and lecturer who is best known for his work on the initial development of structured query language (SQL). Despite being best known for his extensive work on SQL, Chamberlin has authored two books and his name is associated with the initial phases of XQuery and the System R project.

After attending high school, Chamberlin enrolled at Harvey Mudd College, studying engineering.  After graduating, he went to Stanford University on a NSF (National Science Foundation) grant. While here, Chamberlin studied electrical engineering and minored in computer science. Chamberlin holds an M.Sc and a PhD degree in electrical engineering from Stanford University. After graduating, Chamberlin went to work for IBM Research at the Yorktown Heights research facility in New York. Like many graduates do, Chamberlin managed to use his experience gained from a previous summer internship to land the job. While working here Chamberlin along with Raymond Boyce are credited with being co-inventors of structured query language (SQL).

### SQL

SQL is a language used in programming that was designed by Chamberlin and Boyce for managing data held in a relational database management system (RDBMS). The development of SQL by the two men while working at IBM in the mid 1970’s was a huge breakthrough in the software engineering world as it became the most widely used database language in the world and to this day, it remains the largest. SQL was the first commercially successful language for relational databases. Originally called SEQUEL (Structured English Query Language) the acronym had to be changed to SQL due to SEQUEL already being trademarked by a US aircraft company.

In the late 1970s, Relational Software, Inc. (now Oracle) saw the potential of the concepts Chamberlin and Boyce had created, and developed their own SQL-based Relational Database Management System with aspirations of selling it commercially in the US to government agencies and the likes. In June 1979, Relational Software, Inc. introduced the first commercially available implementation of SQL, Oracle V2.

After testing SQL at customer test sites to determine its usefulness and practicality, IBM began developing commercial products based on their System R prototype. IBM’s commercial products became available in the late 70’s-early 80’s when System/38 and SQL/DS were released.

### Other Projects and Later life

Chamberlin also was one of the managers of IBM's System R project in 1974, which produced the first SQL implementation and developed much of IBM's relational database technology. System R, received the ACM Software System Award in 1988. Many recognise the fact that the System R research team developed much of the relational database technology that is still in use today. It was also the first system to demonstrate that a relational database management system could provide good transaction processing performance. Design decisions in System R, as well as some algorithm choices continue to influence the relational systems being developed today.

More recently, Chamberlin was a member of the W3C Working Group on XML Query Languages and an editor of the XPath 2.0 and XQuery language specifications, which became W3C Recommendations in 2007. Alongside Jonathan Robie and Dana Florescu, Chamberlin worked to design the Quilt language. The Quilt language then became the basis for the design of XQuery. XQuery is a query and functional programming language that queries and transforms collections of structured and unstructured data, usually in the form of XML.

In 2003 Chamberlin was appointed as an IBM Fellow, reflecting the tremendous work and research he conducted while at the company. Until his retirement in 2009 he was based at the Almaden Research Center. In his later life Chamberlin began to lecture at University of California, Santa Cruz. Here he thought a Java programming class where he has commented on his passions of computer programming and of helping young people strive in this area. Chamberlin is now retired and at this stage of his life, he is dividing his time among continuing to learn, teaching, traveling, and volunteer work, in his own words “taking advantage of opportunities as he finds them”.

### Impact of his work

There is no doubting that the work Don Chamberlin has done throughout his career has stood the test of time. SQL is still widely used today over 40 years after Chamberlin and Boyce originally developed it in the 70’s. For data analysts who need to retrieve, update, and analyse records stored in a database, SQL is the most common tool. SQL is the most effective tool analysts use for many reasons. Most importantly for the large businesses in the world SQL allows for hundreds of thousands or millions of transactions or other data records, SQL is by far the most effective tool compared to its counterparts.

Finally, it’s quite clear from the above that Donald Chamberlin is a hugely influential software engineer, and has been recognised for his achievements by multiple organisations. Some of his awarded accolades include;

* ACM Fellow (1994)
* National Academy of Engineering Member (1997)
* IBM Fellow (2003)
* IEEE Fellow (2007)
* ACM SIGMOD Edgar F. Codd Innovations Award
* ACM Software System Award (1988)
* Computer History Museum Fellow (2009)