White Paper Final

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Sequel, SQL Server, and Oracle

History and Job Market

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**Abstract**

This white paper will take a peek into the history of Sequel, Oracle, and SQL Server, as well as look at the current job market for database. The history of the database dates back to the early 70’s. A lot of the people who were the first database administrators or developers are coming to the age of retirement. The need for skilled positions in the database industry is very large. However, most of these positions are lead positions with lots of experience required. Today salaries for these positions can climb to around $100,000.00 or more in some cases.

**Sequel**

Let’s start with a brief history of Sequel. SQL is often confused with SQL Server. People tend to think that they are the same thing, when in fact they are not. Sequel was shortened to SQL and it is a programming language. SQL Server is an application that *uses* the SQL programming language.

Interestingly enough, Ray Boyce and Donald D. Chamberlin stumbled upon something revolutionary when they started “to invent queries and challenge each other to express them in various query languages.” [2] They thought that it was “possible to design a relational language that would be more accessible to users without formal training… (and) also hoped to extend the language to encompass database updates and administrative tasks such as the creation of new tables and views, which had traditionally been outside the scope of a query language.” [2] In 1973 Sequel was born. The query language “is called a declarative (rather than a procedural) language.” [2] Obviously things really took off for these two men. “Commercial implementations of SQL, such as Oracle and DB2, began to appear in the late 1970s and early 1980s. By 1986, a standard language definition called ‘‘Database Language SQL’’ had been formally adopted by the ANSI and ISO standards groups.” [2] These standards are still used today by both Oracle and SQL. The idea was to make a language that ordinary users would have no problem using. That did not happen, but a wonderful new language was created.

**Oracle**

On Oracle’s website the history of [Oracle](http://oracle.com.edgesuite.net/timeline/oracle/) is easily found. It is a rather impressive interactive [timeline](http://oracle.com.edgesuite.net/timeline/oracle/) [1] with information about Oracle’s RDBMS (Relational Data Base Management System) among other Oracle achievements and troubles. Oracle released “its relational database product, "Oracle," for the first time commercially in July” [1] 1979. In 1999 Oracle made a major announcement, that they would be “expanding the company’s commitment to the Linux operating system.” [1] However, it wasn’t until 2003 that Oracle came out with their first “production-ready database for 64-bit Linux” [1] Then in 2005, Oracle released database 10g, “this starter edition (offered) developers the freedom to develop and deploy applications on their platform of choice—at no cost.” [1] Today Oracle is more than just a great database they have grown their company immensely. There is tons of very interesting information about the history of Oracle on their website.

**SQL Server**

SQL Server’s history is much harder to find than either Oracle or the Sequel language. SQL Server is a database product like Oracle, and it uses the Sequel programming language. SQL Server released its first edition in 1989, about ten years after Oracle. Below is a chart of “SQL Server Release History” [Figure 1]

|  |  |  |  |
| --- | --- | --- | --- |
| SQL Server Release History | | | |
| **Version** | **Year** | **Release Name** | **Codename** |
| 1.0 (OS/2) | 1989 | SQL Server 1.0 (16 bit) | - |
| 1.1 (OS/2) | 1991 | SQL Server 1.1 (16 bit) | - |
| 4.21 (WinNT) | 1993 | SQL Server 4.21 | SQLNT |
| 6.0 | 1995 | SQL Server 6.0 | SQL95 |
| 6.5 | 1996 | SQL Server 6.5 | Hydra |
| 7.0 | 1998 | SQL Server 7.0 | Sphinx |
| - | 1999 | SQL Server 7.0 OLAP Tools | Palato mania |
| 8.0 | 2000 | SQL Server 2000 | Shiloh |
| 8.0 | 2003 | SQL Server 2000 64-bit Edition | Liberty |
| 9.0 | 2005 | SQL Server 2005 | Yukon |
| 10.0 | 2008 | SQL Server 2008 | Katmai |
| 10.25 | 2010 | SQL Azure DB | CloudDatabase |
| 10.5 | 2010 | SQL Server 2008 R2 | Kilimanjaro (aka KJ) |
| 11.0 | 2012 | SQL Server 2012 | Denali |
| 12.0 | 2014 | SQL Server 2014 |  |

Figure 1 - Ask.com 12/8/13

**Interesting Facts Concerning the Job Market**

When looking for a career in the database field SQL Server and Oracle are the leading databases in the industry. According to Indeed.com most SQL and Oracle database administrators (DBA) or developers get paid about the same rate, ranging from 80,000 to over 100,000 a year. However, upon looking for jobs today in the United States, on [Careerbuilder.com](http://www.careerbuilder.com/Jobseeker/Jobs/JobResults.aspx?qb=1&SB%3Asbkw=database+developer&SB%3As_freeloc=&SB%3Asbfr=30&sbsbmt=Find+Jobs&IPath=QHKV&excrit=st%3Da%3Buse%3DALL%3BrawWords%3Ddatabase+administrator%3BCID%3DUS%3BSID%3D%3F%3BTID%3D0%3BLOCCID%3DUS%3BENR%3DNO%3BDTP%3DDRNS%3BYDI%3DYES%3BIND%3DALL%3BPDQ%3DAll%3BPDQ%3DAll%3BPAYL%3D0%3BPAYH%3Dgt120%3BPOY%3DNO%3BETD%3DALL%3BRE%3DALL%3BMGT%3DDC%3BSUP%3DDC%3BFRE%3D30%3BCHL%3DAL%3BQS%3Dsid_unknown%3BSS%3DNO%3BTITL%3D0%3BOB%3D-relv%3BJQT%3DRAD%3BJDV%3DFalse%3BMaxLowExp%3D-1%3BRecsPerPage%3D25&cid=US), I noticed another large difference. There are about two to three times the numbers of developer positions available when compared to DBA positions. There were also more [SQL](http://www.careerbuilder.com/Jobseeker/Jobs/JobResults.aspx?qb=1&SB%3Asbkw=SQL+Server+database&SB%3As_freeloc=&SB%3Asbfr=30&sbsbmt=Find+Jobs&IPath=ILKV&excrit=st%3DA%3Buse%3DALL%3BrawWords%3Ddatabase+developer%3BCID%3DUS%3BSID%3D%3F%3BTID%3D0%3BLOCCID%3DUS%3BENR%3DNO%3BDTP%3DDRNS%3BYDI%3DYES%3BIND%3DALL%3BPDQ%3DAll%3BPDQ%3DAll%3BPAYL%3D0%3BPAYH%3DGT120%3BPOY%3DNO%3BETD%3DALL%3BRE%3DALL%3BMGT%3DDC%3BSUP%3DDC%3BFRE%3D30%3BCHL%3DAL%3BQS%3DSID_UNKNOWN%3BSS%3DNO%3BTITL%3D0%3BOB%3D-relv%3BJQT%3DRAD%3BJDV%3DFalse%3BMaxLowExp%3D-1%3BRecsPerPage%3D25&cid=US) Server database positions available on average when compared to [Oracle](http://www.careerbuilder.com/Jobseeker/Jobs/JobResults.aspx?qb=1&SB%3Asbkw=Oracle+database&SB%3As_freeloc=&SB%3Asbfr=30&sbsbmt=Find+Jobs&IPath=ILKV&excrit=st%3DA%3Buse%3DALL%3BrawWords%3DSQL+Server+database%3BCID%3DUS%3BSID%3D%3F%3BTID%3D0%3BLOCCID%3DUS%3BENR%3DNO%3BDTP%3DDRNS%3BYDI%3DYES%3BIND%3DALL%3BPDQ%3DAll%3BPDQ%3DAll%3BPAYL%3D0%3BPAYH%3DGT120%3BPOY%3DNO%3BETD%3DALL%3BRE%3DALL%3BMGT%3DDC%3BSUP%3DDC%3BFRE%3D30%3BCHL%3DAL%3BQS%3DSID_UNKNOWN%3BSS%3DNO%3BTITL%3D0%3BOB%3D-relv%3BJQT%3DRAD%3BJDV%3DFalse%3BMaxLowExp%3D-1%3BRecsPerPage%3D25&cid=US) database positions. It is possible obtain certifications (which employers like to see,) and/or a lucrative career with either Oracle or SQL Server. SQL Server certifications come from Microsoft, and Oracle certifications are issued by Oracle. Today there are many different versions being utilized for either database software in the job market. However the versions tend to build on each other making learning additional functionality rather easy. Updates on certifications should be taken to ensure understanding of the new functions with each new version release.

**Conclusion**

In conclusion, Sequel is a programming language developed in the early 1970’s. Then Oracle released database software that included the SQL language in their product in 1979. Finally, Microsoft released the first version SQL Server in 1989 which also incorporated the SQL programming language within the software. These databases are very comparable and leaders in the database industry.

When looking for employment in the database field SQL development seems to be the way to go with odds of landing a job because of the number of positions available. If concerned with the small margin of pay Oracle development comes out on top with some lead positions over $100,000.00. No matter which way is decided, this is a wonderful career path to choose. It does not look like databases will be going anywhere soon.

**References**

[1] Oracle. (N.D.). *Oracle Timeline.* Retrieved December 7, 2013, from <http://oracle.com.edgesuite.net/timeline/oracle/>

[2] Chamberlin, D. D. (2012). Early History of SQL*. IEEE Annals of the History of Computing*, 34(4), 78-82.

Figure 1 Ask. (n.d.). *SQL Server Release History.* Retrieved from <http://www.ask.com/wiki/Microsoft_SQL_Server#History>

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CareerBuilder. (n.d.) *Career Builder*. Retrieved December 7, 2013 from <http://www.careerbuilder.com/Jobseeker/Jobs/JobResults.aspx?qb=1&SB%3Asbkw=SQL+server+database&SB%3As_freeloc=&SB%3Asbfr=30&sbsbmt=Find+Jobs&IPath=ILKV&excrit=st%3DA%3Buse%3DALL%3BrawWords%3DOracle+database%3BCID%3DUS%3BSID%3D%3F%3BTID%3D0%3BLOCCID%3DUS%3BENR%3DNO%3BDTP%3DDRNS%3BYDI%3DYES%3BIND%3DALL%3BPDQ%3DAll%3BPDQ%3DAll%3BPAYL%3D0%3BPAYH%3DGT120%3BPOY%3DNO%3BETD%3DALL%3BRE%3DALL%3BMGT%3DDC%3BSUP%3DDC%3BFRE%3D30%3BCHL%3DAL%3BQS%3DSID_UNKNOWN%3BSS%3DNO%3BTITL%3D0%3BOB%3D-relv%3BJQT%3DRAD%3BJDV%3DFalse%3BMaxLowExp%3D-1%3BRecsPerPage%3D25&cid=US>