SQL stands for Structured Query Language and it is a standard language that is used to access and manipulate databases. It has been around for over a few decades and became the standard of the American National Standards Institute in 1986 and the standard for the International Organization for Standardization in 1987. (w3schools.com) Originally the concept was born from IBM researcher Edgar Codd who defined the relational database model.

There are different versions of the SQL language but in order to keep the standards of the ANSI, all of the versions must support the major commands of SELECT, UPDATE, DELETE, INSERT, WHERE in a similar manner. The power of SQL comes with its ability to structure data and to be able to access and manipulate that data in an efficient and organized way. It can also create relationships between tables that allow for powerful queries which enhances its usability.

There are also a variety of Database Management Systems and four of the most common are PostgreSQL, MySQL, SQLite and SQL Server all of which utilize the structure of SQL but have differences in some features such as being open source, better at scaling or better for read heavy operations. Which one you chose will be heavily dependent on the environment and needs of the project.

The most common way to access data within a SQL database is with a query. A query in this case refers to a command that will retrieve data based off of given criteria. A common query in SQL would look like: SELECT \* FROM student WHERE last\_name = ‘Smith’;

This would return all students with the last name of Smith from our student table.

There are many valuable features of the SQL language as it is both a useful and powerful tool when it comes to data management.