Research Title:"**Structured query language(sql)**"

**الطالب/سلطان غازي العضياني العتيبي**

معلم المقرر/د.امير محمد المنصف الحمامي

**Structure Query Language(SQL)** is a database query language used for storing and managing data in Relational DBMS. SQL was the first commercial language introduced for E.F Codd's Relational model of database. Today almost all RDBMS(MySql, Oracle, Infomix, Sybase, MS Access) use SQL as the standard database query language. SQL is used to perform all types of data operations in RDBMS.

**SQL code is often divided into four main categories**

‘Queries are performed using the ubiquitous yet familiar SELECT statement, which is further divided into clauses, including SELECT, FROM, WHERE and ORDER BY.’

‘Data Manipulation Language (DML) is used to add, update or delete data and is actually a SELECT statement subset and is comprised of the INSERT, DELETE and UPDATE statements, as well as control statements, e.g., BEGIN TRANSACTION, SAVEPOINT, COMMIT and ROLLBACK.’

‘Data Definition Language (DDL) is used for managing tables and index structures. Examples of DDL statements include CREATE, ALTER, TRUNCATE and DROP.’

‘Data Control Language (DCL) is used to assign and revoke database rights and permissions. Its main statements are GRANT and REVOKE.’

‘The main benefit of SQL database language is that is allows you to immediately insert, update, delete, or retrieve data with simple commands. It also allows users to take on administrative functions, and manage the database. Data can be accessed remotely with SQL. Those who appreciate this type of programming language say it is due to the fact that it is easy to learn, with most of the commands being almost common sense.’

‘It is also widely accepted across a variety of platforms, making it close to a universal language in database systems at this time.’

-Logical Tech Group

To many coders who have just begun to express their curiosity of the world of technology, introducing yourself to the specific tasks of so many programming languages can be a challenging task. However, the word task is itself a very valuable clue. These technologies are just like specific professions tasked with certain duties and expectations. They’re designated a specific purpose. There is an underlying functionality that makes these programming languages and software useful for modern coders, otherwise, like the technologies of yesterday, they slip away unnoticed.

Consider the fact that typewriters, for the most part, are either being used by unemployed writers, or by governments to counter the threat of international spying, due to how obsolete they have become in a digital world. Or that the Wall Street Journal discussed the severe fall in landline phone use over the last 15 years between 1996 and 2011, from 96% to 71%. When was the last time you used a public pay phone, looked up a phone number in a phone book, or searched for a definition in an encyclopaedia? The world has never changed so much, or so quickly.

SQL, despite being one of the older languages having been designed at IBM in the early 1970s, is as strong as ever, due to its adaptability to evolve over time, it’s ease of use, and the fact that it doesn’t overcomplicate things. It understands the simple but vital function it provides, and it goes about doing that. Where so many programming languages have failed to adapt over time, SQL has consistently provided exactly as it advertised, and has cemented its place as the backbone of data architecture.

**Advantages of Learning SQL Structured Query Language**

The advantages of learning SQL are expanding and significant. SQL had a colossal increment in utilization during the most recent couple of years. Now, this tendency proceeds because companies gather more and more information that has to be stored and comprehended afterward.

. **Universal Language-1**

SQL is one of the techniques that seeps over into other numerous disciplines. When you work with SQL, you’re using the computer’s language. This stimulates you to progress into coding with other different languages, for example, C++, Javascript, Python, and others. All these languages are invaluable and still in demand.

Everything you need for prevailing with a programming language is a dream about a field you want to work in. During the time of learning SQL, you can enhance your abilities to specialize as a programmer, developer, manager, and more. It sounds cheesy; however, there are truly no boundaries of what you can do with SQL.

**2-Open-Source – Easy to learn and use**

SQL is an open-source programming language, so it has a large community of developers. Many topics that relate to SQL and MySQL are posted on StackOverflow consistently. SQL is comparatively easier to learn than other programming languages, for example, C++. Also, a considerable number of the prevalent databases that use SQL (MySQL, MariaDB, and Postgres) are open-source.

**3-Manage Million Rows of Data**

Traditional spreadsheets can be used to manage small-to-medium-sized sets of information, so we will require an alternate solution when managing such huge records. Gratefully, this is a field, in which SQL sparkles: regardless of whether it’s 1,000 records or 100 million, SQL is completely equipped to handle data pools of virtually all sizes.

Did your spreadsheet crash since you had thousands of columns of information? Relational databases are intended to store millions of rows of data. SQL permits you performing activities on this large measure of data without worrying about crashing. Microsoft Excel is an incredible tool, but it was not developed to perform tasks on millions of rows at once. Relational databases are intended for such huge tasks, and SQL is the language that enables you to finish them.

**4-Technology Evolution**

Database technologies like MySQL, Microsoft SQL, and PostgreSQL Server reinforce huge associations, small companies, banks, hospitals, colleges. In fact, every PC or individual with access to some kind of mechanical device eventually touches SQL. It is even on your smartphone since Android and iOS both use SQL.

. **High in Demand 5-**

There aren’t many individuals in the present workforce who have a working experience in SQL. Many businesses perceive the value of such a skill in the current market. However, it’s a simple sell to make

**References:**

1-https://codeinstitute.net/blog/sql-introduction-structured-query-language/

2-https://www.studytonight.com/dbms/introduction-to-sql.php

3-https://codingsight.com/structured-query-language-importance-of-learning-sql/