

- ***Important idea in interaction with DB(s)***

Imperative in database means I tell DBMS how interacts with database, more clearly the user or developer tells DBMS how to do the operation in database.

Declarative in database means I tell DBMS what I want to do and let DBMS interact with database with itself.

- Which Approach is the best? And why?
 - ***Declarative***; because DBMS is highly effective and has a query optimizer that can rewrite the query that I'm writing and has an optimal execution strategy.

SQL is standard for ***Structured Query Language*** and has three main forms:

- **Data Manipulation Language (DML)**
- **Data Definition Language (DDL)**
- **Data Control Language (DCL)**

Basic syntax for query:

SELECT column,

column FROM table name

WHERE predicates;

- *Some Basics in SQL*

- **Aggregates**: It's a Function that returns a single value from a bag of tuples.

- **String operation**: String concatenation operators can combine two or more of the following data types into one expression: *character or binary strings; columns; a combination of strings and column names; Wildcard string operators can match one or more characters in a string comparison operation.*
 - ❖ LIKE and PATINDEX are examples of two of these operations. Section Heading + (String Concatenation) += (String Concatenation Assignment)

- **Output Redirection**: It stores query results in another table.

- **Output Control**: It's a technique for controlling output where actual output is compared to planned output to identify problems.

- **Nested Query**: In nested queries, a query is written inside a query, the result of inner query is used in execution of outer query.
- **Window functions**: Window functions operate on a set of rows and return a single aggregated value for each row, the term Window describes the set of rows in the database on which the function will operate.
- **Common Table Expression**: A Common Table Expression, also called "CTE" in short form, is a temporary named result set that you can reference within a SELECT, INSERT, UPDATE, or DELETE statement. The CTE can also be used in a View.