LET'S TALK ABOUT

ISO/IEC 9075

WHAT IS ISO/IEC 9075?

- THE INTERNATIONAL STANDARD FOR STRUCTURED QUERY LANGUAGE (SQL), DEFINING HOW RELATIONAL DATABASES ARE MANAGED, QUERIED, AND UPDATED.
- DEVELOPED JOINTLY BY ISO AND IEC (INTERNATIONAL ELECTROTECHNICAL COMMISSION).

KEY COMPONENTS OF THE STANDARD

- SQL FRAMEWORK: DEFINES SYNTAX, SEMANTICS, AND DATA STRUCTURES.
- PARTS OF THE STANDARD:
- PART 1 (SQL/FRAMEWORK): OVERVIEW AND CONFORMANCE RULES.
- PART 2 (SQL/FOUNDATION): CORE FEATURES (DATA TYPES, QUERIES, DML, DDL).
- PART 3 (SQL/CLI): CALL-LEVEL INTERFACE (ODBC, JDBC).
- PART 4 (SQL/PSM): PERSISTENT STORED MODULES (PROCEDURES/FUNCTIONS).
- PART 11 (SQL/SCHEMATA): METADATA DEFINITIONS.
- (MENTION OTHER PARTS BRIEFLY, E.G., PART 14 FOR XML INTEGRATION.)

INTEROPERABILITY

ENSURES SQL WORKS CONSISTENTLY ACROSS SYSTEMS (ORACLE, MYSQL, POSTGRESQL, ETC.).

PORTABILITY

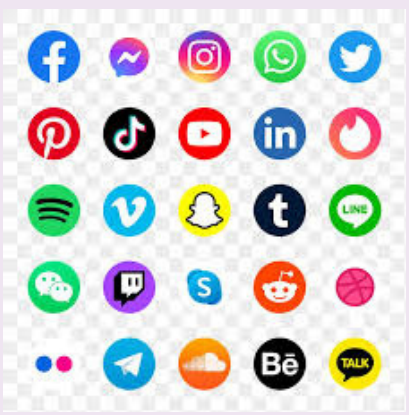
APPLICATIONS CAN SWITCH DATABASES WITH MINIMAL CODE CHANGES.

SECURITY

STANDARDIZED ACCESS CONTROL AND DATA INTEGRITY (E.G., GRANT, ROLLBACK).

ICONS

DATABASE SYMBOLS, SQL CODE SNIPPETS, ISO/IEC LOGOS.

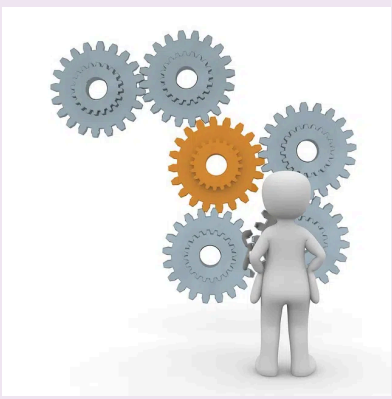


DATABASE SYMBOLS, SQL CODE SNIPPETS, ISO/IEC LOGOS.

HOW SQL QUERIES ARE PROCESSED (PARSER > OPTIMIZER > EXECUTION).

COMPARISON TABLE

SQL-92 VS. SQL:2023 FEATURES.

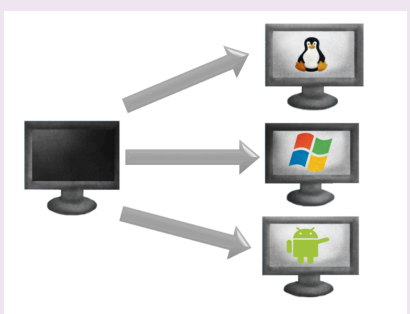


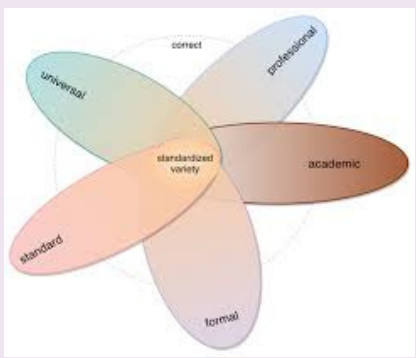
CHARACTERISTICS

HERE ARE 7 KEY CHARACTERISTICS OF THE ISO/IEC 9075 (SQL STANDARD) THAT YOU CAN HIGHLIGHT IN YOUR INFOGRAPHIC

STANDARDIZED SYNTAX & SEMANTICS

DEFINES CONSISTENT RULES FOR SQL QUERIES (E.G., SELECT, JOIN, GROUP BY), ENSURING COMPATIBILITY ACROSS DATABASES LIKE MYSQL, POSTGRESQL, AND ORACLE.



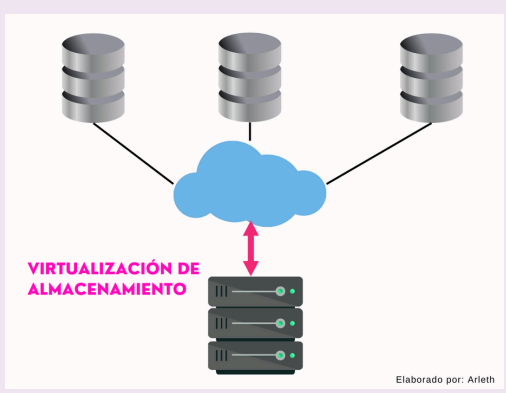


MULTI-PART STRUCTURE

DIVIDED INTO MODULAR PARTS (E.G., SQL/FOUNDATION, SQL/PSM, SQL/CLI) FOR FLEXIBILITY AND TARGETED COMPLIANCE.

DATA INTEGRITY & SECURITY

SUPPORTS CONSTRAINTS (PRIMARY KEY, CHECK), TRANSACTIONS (COMMIT, ROLLBACK), AND ACCESS CONTROL (GRANT, REVOKE).

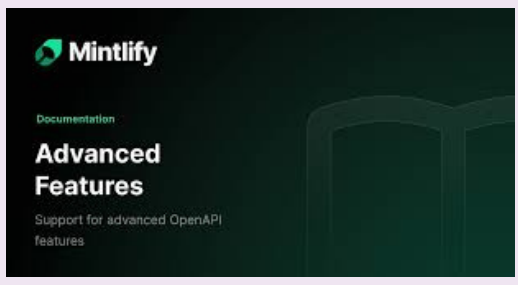


CROSS-PLATFORM PORTABILITY

WRITE SQL ONCE, RUN ANYWHERE (IN THEORY!). REDUCES VENDOR LOCK-IN FOR APPLICATIONS.

SUPPORT FOR ADVANCED FEATURES

INCLUDES STORED PROCEDURES (SQL/PSM), JSON (SQL:2016), TEMPORAL DATA (SQL:2011), AND OBJECT-RELATIONAL EXTENSIONS.

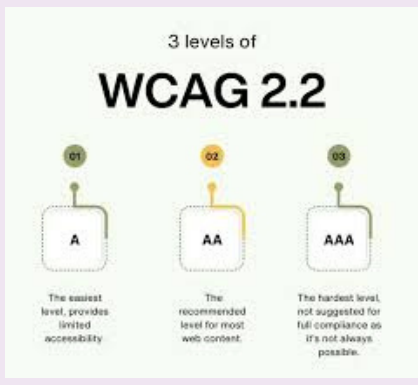


BACKWARD COMPATIBILITY

NEW VERSIONS (E.G., SQL:2023) MAINTAIN COMPATIBILITY WITH OLDER STANDARDS (SQL-92 REMAINS WIDELY SUPPORTED).

CONFORMANCE LEVELS

DATABASES CLAIM CORE OR ENHANCED COMPLIANCE (E.G., POSTGRESQL ADHERES CLOSELY; OTHERS IMPLEMENT SUBSETS).



CONCLUSIONS

THE ISO/IEC 9075 SQL STANDARD IS THE GLOBAL FOUNDATION FOR DATABASE COMMUNICATION, ENSURING RELIABILITY, SECURITY, AND INTEROPERABILITY ACROSS SYSTEMS. BY STANDARDIZING SQL SYNTAX AND FEATURES, IT ENABLES SEAMLESS DATA MANAGEMENT—FROM SMALL APPS TO ENTERPRISE SOLUTIONS.
AS TECHNOLOGY EVOLVES, SQL CONTINUES TO ADAPT, INTEGRATING MODERN NEEDS LIKE JSON AND TEMPORAL DATA WHILE PRESERVING DECADES OF COMPATIBILITY. FOR DEVELOPERS AND BUSINESSES ALIKE, MASTERING THIS STANDARD MEANS FUTURE-PROOF, EFFICIENT, AND PORTABLE DATABASE SOLUTIONS.

REFERENCES

1. **PRIMARY STANDARD**
2. ISO/IEC 9075-1:2023, *INFORMATION TECHNOLOGY — DATABASE LANGUAGES — SQL — PART 1: FRAMEWORK (SQL/FRAMEWORK)*. GENEVA, SWITZERLAND: ISO/IEC, 2023. [ONLINE]. AVAILABLE: THE ISO/IEC 9075 SQL STANDARD IS THE GLOBAL FOUNDATION FOR DATABASE COMMUNICATION, ENSURING RELIABILITY, SECURITY, AND INTEROPERABILITY ACROSS SYSTEMS. BY STANDARDIZING SQL SYNTAX AND FEATURES, IT ENABLES SEAMLESS DATA MANAGEMENT—FROM SMALL APPS TO ENTERPRISE SOLUTIONS.
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4. TECHNICAL OVERVIEW
5. C. J. DATE AND H. DARWEN, A GUIDE TO THE SQL STANDARD, 4TH ED. BOSTON, MA, USA: ADDISON-WESLEY, 1997.
6. VENDOR IMPLEMENTATION
7. IBM, DB2 11.5 SQL COMPLIANCE, ARMONK, NY, USA, 2022. [ONLINE]. AVAILABLE: THE ISO/IEC 9075 SQL STANDARD IS THE GLOBAL FOUNDATION FOR DATABASE COMMUNICATION, ENSURING RELIABILITY, SECURITY, AND INTEROPERABILITY ACROSS SYSTEMS. BY STANDARDIZING SQL SYNTAX AND FEATURES, IT ENABLES SEAMLESS DATA MANAGEMENT—FROM SMALL APPS TO ENTERPRISE SOLUTIONS.
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