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American National Standard

*Information technology — Database languages —
SQL — Part 2: Foundation (SQL/Foundation)*

Developed by



Where IT all begins



INCITS/ISO/IEC 9075-2:2011 [2012]

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75% of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 9075-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

This fourth edition of ISO/IEC 9075-2 cancels and replaces the third edition (ISO/IEC 9075-2:2008), which has been technically revised. It also incorporates Technical Corrigendum ISO/IEC 9075-2:2008/Cor.1:2010.

ISO/IEC 9075 consists of the following parts, under the general title *Information technology — Database languages — SQL*:

- Part 1: Framework (SQL/Framework)
- Part 2: Foundation (SQL/Foundation)
- Part 3: Call-Level Interface (SQL/CLI)
- Part 4: Persistent Stored Modules (SQL/PSM)
- Part 9: Management of External Data (SQL/MED)
- Part 10: Object Language Bindings (SQL/OLB)
- Part 11: Information and Definition Schemas (SQL/Schemata)
- Part 13: SQL Routines and Types Using the Java™ Programming Language (SQL/JRT)
- Part 14: XML-Related Specifications (SQL/XML)

NOTE 1 — The individual parts of multi-part standards are not necessarily published together. New editions of one or more parts may be published without publication of new editions of other parts.

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Introduction

The organization of this part of ISO/IEC 9075 is as follows:

- 1) Clause 1, “Scope”, specifies the scope of this part of ISO/IEC 9075.
- 2) Clause 2, “Normative references”, identifies additional standards that, through reference in this part of ISO/IEC 9075, constitute provisions of this part of ISO/IEC 9075.
- 3) Clause 3, “Definitions, notations, and conventions”, defines the notations and conventions used in this part of ISO/IEC 9075.
- 4) Clause 4, “Concepts”, presents concepts used in the definition of SQL.
- 5) Clause 5, “Lexical elements”, defines the lexical elements of the language.
- 6) Clause 6, “Scalar expressions”, defines the elements of the language that produce scalar values.
- 7) Clause 7, “Query expressions”, defines the elements of the language that produce rows and tables of data.
- 8) Clause 8, “Predicates”, defines the predicates of the language.
- 9) Clause 9, “Additional common rules”, specifies the rules for assignments that retrieve data from or store data into SQL-data, and formation rules for set operations.
- 10) Clause 10, “Additional common elements”, defines additional language elements that are used in various parts of the language.
- 11) Clause 11, “Schema definition and manipulation”, defines facilities for creating and managing a schema.
- 12) Clause 12, “Access control”, defines facilities for controlling access to SQL-data.
- 13) Clause 13, “SQL-client modules”, defines SQL-client modules and externally-invoked procedures.
- 14) Clause 14, “Data manipulation”, defines the data manipulation statements.
- 15) Clause 15, “Additional data manipulation rules”, defines additional rules for data manipulation.
- 16) Clause 16, “Control statements”, defines the SQL-control statements.
- 17) Clause 17, “Transaction management”, defines the SQL-transaction management statements.
- 18) Clause 18, “Connection management” defines the SQL-connection management statements.
- 19) Clause 19, “Session management”, defines the SQL-session management statements.
- 20) Clause 20, “Dynamic SQL”, defines the SQL dynamic statements.
- 21) Clause 21, “Embedded SQL”, defines the host language embeddings.
- 22) Clause 22, “Direct invocation of SQL”, defines direct invocation of SQL language.
- 23) Clause 23, “Diagnostics management”, defines the diagnostics management facilities.
- 24) Clause 24, “Status codes”, defines values that identify the status of the execution of SQL-statements and the mechanisms by which those values are returned.