



INTERNATIONAL STANDARD ISO/IEC 9075-1:1999  
ISO/IEC 9075-2:1999  
ISO/IEC 9075-3:1999  
ISO/IEC 9075-4:1999  
ISO/IEC 9075-5:1999

TECHNICAL CORRIGENDUM 1

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## 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 5: Host Language Bindings (SQL/Bindings)

TECHNICAL CORRIGENDUM 1

*Technologies de l'information — Langages de base de données — SQL —*

*Partie 1: Charpente (SQL/Charpente)*

*Partie 2: Fondations (SQL/Fondations)*

*Partie 3: Interface de niveau d'appel (SQL/CLI)*

*Partie 4: Modules stockés persistants (SQL/PSM)*

*Partie 5: Liants de langage d'hôte (SQL/Liants)*

RECTIFICATIF TECHNIQUE 1

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ISO/IEC 9075-1:1999/Cor 1:2000  
<https://standards.iteh.ai/catalog/standards/sist/db60d82e-9919-4822-8ac7-c27bfl57f54e/iso-iec-9075-1-1999-cor-1-2000>

Technical Corrigendum 1 to parts 1 to 5 of International Standard ISO/IEC 9075:1999 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

### Statement of purpose for rationale:

A statement indicating the rationale for each change to ISO/IEC 9075 is included. This is to inform the users of that standard as to the reason why it was judged necessary to change the original wording. In many cases the reason is editorial or to clarify the wording; in some cases it is to correct an error or an omission in the original wording.

### Notes on numbering:

Where this Corrigendum introduces new Syntax, Access, General and Conformance Rules, the new rules have been numbered as follows:

Rules inserted between, for example, Rules 7) and 8) are numbered 7.1), 7.2), etc. [or 7) a.1), 7) a.2), etc.].

Those inserted before Rule 1) are numbered 0.1), 0.2), etc.

Where this Corrigendum introduces new subclauses, the new subclauses have been numbered as follows:

Subclauses inserted between, for example, subclause 4.3.2 and 4.3.3 are numbered 4.3.2a, 4.3.2b, etc.

Those inserted before, for example, 4.3.1 are numbered 4.3.0, 4.3.0a, etc.

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## **ISO/IEC 9075-1:1999** **Database Languages - SQL-Part 1:Framework**

### **4.8.2.3 Locators**

1. *Rationale: Correct the specification of which locators are marked invalid when an SQL-transaction ends.*

Replace the 8<sup>th</sup> paragraph with:

A non-holdable locator remains valid until the end of the SQL-transaction in which it was generated, unless it is explicitly made invalid by the execution of a <free locator statement> or a <rollback statement> that specifies a <savepoint clause> is executed before the end of that SQL-transaction if the locator was generated subsequent to the establishment of the savepoint identified by the <savepoint clause>.

Replace 9<sup>th</sup> paragraph with:

A holdable locator may remain valid beyond the end of the SQL-transaction in which it is generated. A holdable locator becomes invalid whenever a <free locator statement> identifying that locator is executed or the SQL-transaction in which it is generated or any subsequent SQL-transaction is rolled back. All locators remaining valid at the end of an SQL-session are marked invalid when that SQL-session terminates.

### **4.11.2 SQL-statements classified by function**

ISO/IEC 9075-1:1999/Cor 1:2000

1. *Rationale: Correct the classification of SQL-statements.*  
<https://standards.iteh.ai/catalog/standards/sist/db60d82e-9919-4822-8ac7-c27b1157546/iso-iec-9075-1-1999-cor-1-2000>

Add a list element to the 1<sup>st</sup> paragraph:

- SQL-dynamic statements, which support the preparation and execution of dynamically generated SQL-statements, and obtaining information about them.

### **5.3.3 SQL-statements specified in ISO/IEC 9075-2**

1. *Rationale: Correct the classification of SQL-statements.*

Replace the 4<sup>th</sup> bullet of the 1<sup>st</sup> paragraph with:

- Two SQL-control statements (CALL and RETURN), which can be used to invoke a procedure and specify a value to be returned by a function.

### **5.5.1 SQL-statements specified in ISO/IEC 9075-4**

1. *Rationale: Correct the classification of SQL-statements.*

Replace the 1<sup>st</sup> bullet of the 1<sup>st</sup> paragraph with:

- Additional SQL-control statements which may be used to control the execution of an SQL routine.

2. *Rationale: Correct the classification of SQL-statements.*

Delete the 2<sup>nd</sup> bullet from the 1<sup>st</sup> paragraph

3. *Rationale: Correct the classification of SQL-statements.*

Replace the 3<sup>rd</sup> bullet of the 1<sup>st</sup> paragraph with:

- Additional SQL-diagnostics statements, which may be used to signal exceptions.

4. *Rationale: Correct the classification of SQL-statements.*

Add the following bullets to the 1<sup>st</sup> paragraph:

- SQL-control declaration statements which may be used to declare variables and exception handlers.
- Additional SQL-schema statements, which may be used to create and drop modules.

### 5.6.5.1 Additional functional classes of SQL-statements

1. *Rationale: Correct the classification of SQL-statements.*

Replace the bullet of the 1<sup>st</sup> paragraph with:

- SQL-dynamic statements, which support the preparation and execution of dynamically generated SQL-statements, and obtaining information about them.

2. *Rationale: Correct the classification of SQL-statements.*  
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Replace the 2<sup>nd</sup> paragraph with:

A number of SQL-data statements are also added, most of which contain the word "dynamic" in their names. They are not to be confused with SQL-dynamic statements.

## 6.2.5 Relationships of incremental parts to ISO/IEC 9075-2, Foundation

1. *Rationale: To permit the modification of Parts 1, 3 and 10 as well as Parts 2 and 5 in other Parts, since Part 1 needs to be updated by the Conformance clauses of other Parts and Parts 3 and 10 are analogous in functionality to Part 5.*

Replace the entire Subclause with:

### 6.2.5 Relationships of incremental parts within ISO/IEC 9075

Parts of ISO/IEC 9075 other than this part of ISO/IEC 9075 and ISO/IEC 9075-2 depend on ISO/IEC 9075-1, ISO/IEC 9075-2 and its Technical Corrigenda and are referenced as incremental parts. Each incremental part is to be used as though it were merged with the text of ISO/IEC 9075. This Subclause describes the conventions used to specify the merger.

The merger described also accounts for the Technical Corrigenda that have been published to correct ISO/IEC 9075. This accommodation is typically indicated by the presence of a phrase like "in the Technical Corrigenda" or "in the TC".

## 6.2.5.1 New and modified Clauses, Subclauses, and Annexes

Where a Clause (other than Clause 1, "Scope", and Clause 2, "Normative references"), Subclause, or Annex in any incremental part of ISO/IEC 9075 has a name identical to a Clause, Subclause, or Annex in ISO/IEC 9075-1, ISO/IEC 9075-2, ISO/IEC 9075-3, ISO/IEC 9075-5 or ISO/IEC 9075-10 (unless the incremental part is itself ISO/IEC 9075-3, ISO/IEC 9075-5 or ISO/IEC 9075-10), it supplements the Clause, Subclause, or Annex, respectively, in ISO/IEC 9075-1 and/or ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10, regardless of whether or not the number or letter of the Clause, Subclause, or Annex corresponds. It typically does so by adding or replacing paragraphs, Format items, or Rules.

In each incremental part, Table 1, "Clause, Subclause, and Table relationships", identifies the relationships between each Clause, Subclause, and Annex in that incremental part and the corresponding Clause, Subclause, or Annex in ISO/IEC 9075-1 and/or ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10.

Where a Clause, Subclause, or Annex in an incremental part has a name that is not identical to the name of some Clause, Subclause, or Annex in ISO/IEC 9075-1 and/or ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10, it provides language specification particular to that part. A Subclause that is part of a Clause or Subclause identified as new is inherently new and is not marked.

The Clauses, Subclauses, and Annexes in each incremental part appear in the order in which they are intended to appear in the merged document. In the absence of other explicit instructions regarding its placement, any new Clause, Subclause, or Annex is to be positioned as follows: Locate the prior Clause, Subclause, or Annex in ISO/IEC 9075-1 and/or ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10 whose name is identical to the name of a corresponding Clause, Subclause, or Annex that appears in the incremental part of ISO/IEC 9075. The new Clause, Subclause, or Annex shall immediately follow that Clause, Subclause, or Annex. If there are multiple new Clauses, Subclauses, or Annexes with no intervening Clause, Subclause, or Annex that modifies an existing Clause, Subclause, or Annex, then those new Clauses, Subclauses, or Annexes appear in order, following the prior Clause, Subclause, or Annex whose name was matched.

When an incremental part performs a modification to the Clause, Subclause, or Annex in ISO/IEC 9075-1 and/or ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10, then the modifications are applied in the following sequence:

- 1) All modifications to ISO/IEC 9075-1 from the incremental part.
- 2) All modifications to ISO/IEC 9075-3 from the incremental part.
- 3) All modifications to ISO/IEC 9075-5 from the incremental part.
- 4) All modifications to ISO/IEC 9075-10 from the incremental part.
- 5) All modifications to ISO/IEC 9075-2 from ISO/IEC 9075-3, including all modifications that were added, augmented, or replaced as a result of step 2.
- 6) All modifications to ISO/IEC 9075-2 from ISO/IEC 9075-5, including all modifications that were added, augmented, or replaced as a result of step 2.
- 7) All modifications to ISO/IEC 9075-2 from ISO/IEC 9075-10, including all modifications that were added, augmented, or replaced as a result of step 2.
- 8) All modifications to ISO/IEC 9075-2 from the incremental part. Note that modifications in this third step may augment or replace modifications applied as a result of steps 2, 3 and 4.

Modifications to ISO/IEC 9075-1 and/or ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10 by more than one incremental part do not interact. The modifications made by an incremental part only have influence on the language specification of that part and those specifications are not influenced by modifications made by any other incremental part.

6.2.5.2 New and modified Format items

In a modified Subclause, a Format item that defines a BNF non-terminal symbol (that is, the BNF non-terminal symbol appears on the left-hand side of the ::= mark) either modifies a Format item whose definition appears in ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10, or replaces a Format item whose definition appears in ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10, or defines a new Format item that does not have a definition at all in ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10. Those Format items in the incremental part that modify a Format item whose definition appears in ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10 are identified by the existence of a “Format comment” such as:

```
<modified item> ::=
    !! All alternatives from ISO/IEC 9075-2
    | <new alternative>
```

By contrast, Format items that completely replace Format items in ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10 have BNF non-terminal symbols identical to BNF non-terminal symbols of Format items in ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10, but do not state that they include any alternatives from ISO/IEC 9075-2 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10.

New Format items that have no correspondence to any Format item in ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10 are not distinguished in the incremental part.

Format items in new Subclauses are unmarked.

6.2.5.3 New and modified paragraphs and rules

In modified Subclauses, each paragraph or Rule is marked to indicate whether it is a modification of a paragraph or Rule in ISO/IEC 9075-1, ISO/IEC 9075-2, ISO/IEC 9075-3, ISO/IEC 9075-5 or ISO/IEC 9075-10 or is a new paragraph or Rule added by this incremental part.

Modifications of paragraphs or Rules in ISO/IEC 9075-2 are identified by the inclusion of an indicative phrase enclosed in a box.

Replace the 5th paragraph means that the following text is to replace the fifth paragraph of the corresponding Subclause in ISO/IEC 9075-2.

Replace SR6) b) ii) means that the following text is to replace Syntax Rule 6)b)ii) of the corresponding Subclause in ISO/IEC 9075-2.

Augments SR3) means that the following text is to extend or enhance Syntax Rule 3). In most instances, the augmentation is the addition of a new alternative meant to support new syntax. New paragraphs or Rules in an incremental part is marked to indicate where it is to be inserted.

Insert before 2nd paragraph means that the following text is to be read as though it were inserted immediately before the second paragraph of the corresponding Subclause in ISO/IEC 9075-2.

Insert before GR4) means that the following text is to be read as though it were inserted immediately before General Rule 4) of the corresponding Subclause in ISO/IEC 9075-2.

If no specific insertion point is indicated, as in Insert this paragraph or Insert this GR, then the following text is to be read as though it were appended at the end of the appropriate section (the General Rules, for example) of the corresponding Subclause in ISO/IEC 9075-2.

Modifications of paragraphs or Rules in ISO/IEC 9075-1 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10 are identified in the same way as for modifications of ISO/IEC 9075-2, except that “in Part 1”, “in Part 3”, “in Part 5” or “in Part 10” is appended to the indicative phrase, as appropriate.

In such indications, “SR” is used to mean “Syntax Rule”, “AR” is used to mean “Access Rule”, “GR” is used to mean “General Rule”, and “CR” is used to mean “Conformance Rule”. “Desc.” is used to mean “Description” and “Func.” is used to mean “Function”.

All paragraphs, Format items, and Rules in new Clauses or Subclauses are also new and are therefore unmarked.

#### 6.2.5.4 New and modified tables

If the name of a table in an incremental part is identical to that of a table in ISO/IEC 9075-1 and/or ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10, then the table supplements the table in ISO/IEC 9075-1 and/or ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10, typically by adding or replacing one or more table entries; otherwise, it is a new table.

In each incremental part, there is a table, Table 1, "Clause, Subclause, and Table relationships", that identifies the relationships between tables in that incremental part and the corresponding tables in ISO/IEC 9075-1 and/or ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10.

The rows in modified tables are generally new rows to be effectively inserted into the corresponding table in ISO/IEC 9075-1 and/or ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10, though in rare cases a row already in a table in ISO/IEC 9075-1 and/or ISO/IEC 9075-2 and/or ISO/IEC 9075-3 and/or ISO/IEC 9075-5 and/or ISO/IEC 9075-10 is effectively replaced by a row in the table in the incremental part. Such replacement is required wherever the value in the first column of the corresponding table is the same.

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[https://standards.iteh.ai/catalog/standards/sist/db60d82e-9919-4822-8ac7-](https://standards.iteh.ai/catalog/standards/sist/db60d82e-9919-4822-8ac7-c27bfl57f54e/iso-iec-9075-1-1999-cor-1-2000)

### Annex B SQL Packages [c27bfl57f54e/iso-iec-9075-1-1999-cor-1-2000](https://standards.iteh.ai/catalog/standards/sist/db60d82e-9919-4822-8ac7-c27bfl57f54e/iso-iec-9075-1-1999-cor-1-2000)

1. *Rationale: Withdraw the package called “OLAP facilities”, which is being superseded by the package called “OLAP” as defined in Amendment 1 of ISO/IEC 9075:1999.*

In Table 2 — SQL Packages, delete line 3:

Delete the entire Annex B.3, “OLAP facilities”.

### Annex B.9 SQL/MM Support

1. *Rationale: The package “SQL/MM support” is no longer needed since it is now defined explicitly in ISO/IEC 13249-1.*

Delete the entire Annex B.9, “SQL/MM support”.

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**Database Languages - SQL-Part 2:Foundation**

**3.1.1 Definitions taken from ISO/IEC 10646**

1. *Rationale: Remove unused definitions.*

Replace the Subclause with:

This part of ISO/IEC 9075 makes use of the following terms defined in ISO/IEC 10646:

- a) character

**3.1.2 Definitions taken from Unicode**

1. *Rationale: Remove unused definitions.*

Replace the Subclause with:

This part of ISO/IEC 9075 makes use of the following terms defined in The Unicode Standard:

- a) control character

**3.1.5 Definitions provided in Part 2**

1. *Rationale: Clarify the definition of “assignment”*

Replace item b) with:

- b) **assignment:** The operation whose effect is to ensure that the value at a site *T* (known as the target) is identical to a given value *S* (known as the source). Assignment is frequently indicated by the use of the phrase “*T* is set to *S*” or “the value of *T* is set to *S*”.

2. *Rationale: Clarify the definition of “comparable”*

Replace item i) with:

- i) **comparable** (of a pair of values): Capable of being compared, according to the rules of Subclause 8.2 “<comparison predicate>”. In most, but not all, cases the values of a data type can be compared one with another. For the specification of comparability of individual data types, see Subclauses 4.2 to 4.11. Further, if a value of one data type can be compared with a value of another data type, then the two data types are said to be (mutually) comparable, see Subclause 4.12, “Type conversions and mixing of data types”.