

# norm

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Information technology - Database languages - SQL - Part 5: Host Language Bindings (SQL/Bindings) (ISO/IEC 9075-5:1999/Cor 2:2003, IDT)

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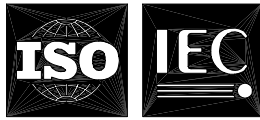
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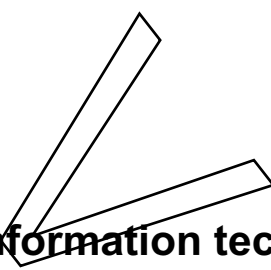
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TECHNICAL CORRIGENDUM 2**

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**Information technology — Database languages — SQL —  
Part 5:  
Host Language Bindings (SQL/Bindings)**

**TECHNICAL CORRIGENDUM 2**

*Technologies de l'information — Langages de base de données — SQL —  
Partie 5: Liants de langage d'hôte (SQL/Liants)*

*RECTIFICATIF TECHNIQUE 2*

Technical Corrigendum 2 to ISO/IEC 9075-5:1999 was prepared by Joint Technical Committee ISO/IEC JTC 1, Information Technology, Subcommittee SC 32, Data management and interchange. ISO/IEC 9075-5:1999/Cor. 2:2003 cancels and replaces ISO/IEC 9075-5:1999/Cor. 1:2000.

**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.

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

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# Information technology — Database languages — SQL —

## Part 5:

## Host Language Bindings (SQL/Bindings)

### TECHNICAL CORRIGENDUM 2

#### 4.6.1 Classes of SQL-statements

1. *Rationale: Clarify the semantics of SQL-data access indication.*

Replace the 2<sup>nd</sup> paragraph with

Insert this paragraph There are at least four additional ways of classifying SQL-statements:

- According to whether or not they may be embedded.
- According to whether they may be dynamically prepared and executed.
- According to whether or not they may be directly executed.
- According to whether they do not possibly contain SQL, possibly contain SQL, possibly read SQL-data, or possibly modify SQL-data.

#### 4.6.4 Embeddable SQL statement

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

Insert the following sub-bullet to the 7<sup>th</sup> bullet of the 1<sup>st</sup> paragraph:

- <hold locator statement>

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

Replace the 8<sup>th</sup> bullet of the 1<sup>st</sup> paragraph with:

- The following SQL-control statements:
  - <call statement>
  - <return statement>

#### 4.6.5 Preparable and immediately executable SQL-statements

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

Delete the following sub-bullet from the 4<sup>th</sup> bullet of the 1<sup>st</sup> paragraph:

- <free locator statement>

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

Insert the following bullet to the 2<sup>nd</sup> paragraph:

- <return statement>

#### 4.6.6 Directly executable SQL-statements

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

Insert the following bullet to the 1<sup>st</sup> paragraph:

- The following SQL control statements:
  - <call statement>
  - <return statement>

2. *Rationale: Clarify the semantics of SQL-data access indication.*

Insert the following Subclause after subclause 4.6.6, "Directly executable SQL-statements":

##### 4.6.6a SQL-statements and SQL-data access indication

Insert this paragraph The following are the other SQL-statements that possibly contain SQL:

- SQL embedded exception declaration

Insert this paragraph The following are the other SQL-statements that possibly read SQL-data:

- SQL-dynamic statements

## 5.1 <token> and <separator>

1. *Rationale: Editorial - Correct reserved and non-reserved word lists.*

In the Format, in the production for <non-reserved word> add the alternatives:

```

| NESTING
| SCOPE_CATALOG
| SCOPE_NAME
| SCOPE_SCHEMA
| USER_DEFINED_TYPE_CATALOG
| USER_DEFINED_TYPE_NAME
| USER_DEFINED_TYPE_SCHEMA

```

2. *Rationale: Editorial. Correct reserved word list.*

In the Format, in the production for <reserved word>, delete the texts:

```

| DYNAMIC
| NESTING

```

## 8.1 <routine invocation>

1. *Rationale: <Embedded variable specification> has also to be handled according to the Syntax Rules of Subclause 9.1, "Retrieval assignment" in Bindings.*

Replace Syntax Rule 1 with:

- 1) Replace SR 8) c) i) 4) A) If  $A_i$  is a <host parameter specification> or an <embedded variable specification>, then  $P_i$  shall be assignable to  $A_i$ , according to the Syntax Rules of Subclause 9.1, "Retrieval assignment", with  $A_i$  and  $P_i$  as *TARGET* and *VALUE*, respectively.

2. *Rationale: The current handling of output parameter in routine invocation is incomplete. It does not cover all alternatives of <target specification>.*

Insert the following General Rule:

- 1) Replace GR 10) b) i) If  $TS_i$  is a <host parameter specification> or an <embedded variable specification>, then  $CPV_i$  is assigned to  $TS_i$  according to the rules of Subclause 9.1, "Retrieval assignment".

## 10.5 <SQL-invoked routine>

1. *Rationale:* Clarify the semantics of SQL-data access indication.

Replace Syntax Rule 1) with:

- 1) Insert before SR 18) c) It is implementation-defined whether the <SQL routine body> shall not contain an <SQL dynamic statement>.

## 11.1 <SQL-client module definition>

1. *Rationale:* Consistent use of terminology.

Replace General Rule 1) with:

- 1) Augments GR 5) After the last time that an SQL-agent performs a call of an <externally-invoked procedure>, following the effective execution of a <rollback statement> or a <commit statement>, a <deallocate descriptor statement> that specifies

```
DEALLOCATE DESCRIPTOR D
```

is effectively executed, where *D* is the <descriptor name> of any SQL descriptor area that is currently allocated within an SQL-session associated with the SQL-agent.

## 11.2 Calls to an <externally-invoked procedure>

1. *Rationale:* Editorial.

In Syntax Rule 1) replace the following constraints:

```
DYNAMIC_SQL_ERROR_UNDEFINED_DATA_TARGET:
constant SQLSTATE_TYPE := "0700D";
DYNAMIC_SQL_ERROR_UNDEFINED_LEVEL_VALUE:
constant SQLSTATE_TYPE := "0700E";
```

with:

```
DYNAMIC_SQL_ERROR_INVALID_DATA_TARGET:
constant SQLSTATE_TYPE := "0700D";
DYNAMIC_SQL_ERROR_INVALID_LEVEL_VALUE:
constant SQLSTATE_TYPE := "0700E";
```

## 11.3 <SQL procedure statement>

1. *Rationale:* Editorial.

In the Format, replace the production for <SQL procedure statement> with:

```
<SQL session statement> ::=
    !! All alternatives from ISO/IEC 9075-2
    | <set catalog statement>
    | <set schema statement>
```

```

| <set names statement>
| <set path statement>
| <set transform group statement>

```

2. *Rationale: Consistent use of terminology.*

In the Format replace the production of <SQL dynamic statement> with:

```

<SQL dynamic statement> ::=
| <SQL descriptor statement>
| <prepare statement>
| <deallocate prepared statement>
| <describe statement>
| <execute statement>
| <execute immediate statement>
| <SQL dynamic data statement>

```

In the Format replace the production of <system descriptor statement> with:

```

<SQL descriptor statement> ::=
| <allocate descriptor statement>
| <deallocate descriptor statement>
| <set descriptor statement>
| <get descriptor statement>

```

## 12.0 <fetch statement>

1. *Rationale: Add missing Syntax and General Rules for <fetch statement>.*

Add a new Subclause as follows:

### 12.0 <fetch statement>

Function

Position a cursor on a specified row of a table and retrieve values from that row.

Format

No additional Format items.

Syntax Rules

- 1) Add after SR 6) b) iii) For each <target specification> *TS2* that is an <embedded variable name>, the Syntax Rules of Subclause 9.1, “Retrieval assignment”, apply to each *TS2* and the corresponding column of table *T*, as *TARGET* and *VALUE*, respectively.

General Rules

- 1) Add after GR 7) b) ii) If *TV* is an <embedded variable name>, then the General Rules of Subclause 9.1, “Retrieval assignment” are applied to *TV* and *SV*, as *TARGET* and *VALUE*, respectively.



### 12.1 <select statement: single row>

1. *Rationale: Replace in correct non-terminal.*

Replace Syntax Rule 1).

- 1) Insert after SR4 For each <target specification> *TS* that is an <embedded variable specification>, then the Syntax Rules of Subclause 9.1, "Retrieval assignment", shall apply to *TS* and the corresponding element of the <select list>, as *TARGET* and *VALUE*, respectively.

2. *Rationale: Remove redundant and incorrect rule.*

Delete General Rule 1).

3. *Rationale: Replace in correct non-terminal.*

Replace General Rule 2).

- 2) Insert after GR5 For each <target specification> *TS* that is an <embedded variable specification>, the corresponding value in the row of *Q* is assigned to *TS* according to the General Rules of Subclause 9.1, "Retrieval assignment", as *VALUE* and *TARGET*, respectively. The assignment of values to targets in the <select target list> is in an implementation dependent order.

### 12.2 <free locator statement>

1. *Rationale: Editorial - Typographical error.*

In the Format, replace the production for <locator reference> with:

```
<locator reference> ::=  
    !! All alternatives from ISO/IEC 9075-2  
    ! <embedded variable name>
```

### 14.3 <set names statement>

1. *Rationale: Specify explicitly the implication that F451, "Character set definition" depends on F461, "Named character sets".*

Replace Conformance Rule 1) with:

- 1) Without Feature F761, "Session management" and Feature F461, "Named character sets", conforming SQL language shall not contain any <set names statement>.

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