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Part 13: SQL Routines and types using the Java TM programming language (SQL/JRT)

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

Partie 13: Routines et types de SQL utilisant le langage de programmation Java TM (SQL/JRT)



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Contents

Page

Foreword . . . vii
Introduction . . . ix
1 Scope . . . 1
2 Normative references . . . 2
3 Terms and definitions . . . 3
4 Concepts . . . 6
4.1 Notations and conventions . . . 6
4.1.1 Notations . . . 6
4.1.2 Specification of built-in procedures . . . 6
4.1.3 Specification of deployment descriptor files . . . 6
4.2 Java programming language . . . 7
4.3 SQL-invoked routines . . . 8
4.3.1 Characteristics of SQL-invoked routines . . . 8
4.4 Java class name resolution . . . 9
4.5 SQL result sets . . . 10
4.6 Parameter mapping . . . 10
4.7 Unhandled Java exceptions . . . 11
4.8 Data types . . . 11
4.8.1 Host language data types . . . 11
4.9 User-defined types . . . 12
4.9.1 Introduction to user-defined types . . . 12
4.9.2 User-defined type comparison and assignment . . . 13
4.9.3 User-defined type descriptor . . . 13
4.9.4 Accessing static fields . . . 14
4.9.5 Converting objects between SQL and Java . . . 15
4.9.5.1 Introduction to conversion of objects between SQL and Java . . . 15
4.9.5.2 SERIALIZABLE . . . 15
4.9.5.3 SQLDATA . . . 15
4.9.5.4 Developing for portability . . . 16
4.10 Built-in procedures . . . 16
4.11 Basic security model . . . 16
4.11.1 Privileges . . . 16
4.12 JARs . . . 17
4.12.1 Introduction to JARs . . . 17
4.12.2 Deployment descriptor files . . . 17
5 Lexical elements . . . 19
5.1 <token> and <separator> . . . 19
5.2 Names and identifiers . . . 20

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6 Scalar expressions . . . 22
6.1 <method invocation> . . . 22
6.2 <new specification> . . . 23
7 Predicates . . . 24
7.1 <comparison predicate> . . . 24
8 Additional common rules . . . 26
8.1 Invoking an SQL-invoked routine . . . 26
8.2 Execution of array-returning functions . . . 35
9 Additional common elements . . . 42
9.1 <language clause> . . . 42
9.2 <Java parameter declaration list> . . . 43
9.3 <SQL Java path> . . . 44
9.4 <routine invocation> . . . 46
9.5 Java routine signature determination . . . 47
10 Schema definition and manipulation . . . 55
10.1 <drop schema statement> . . . 55
10.2 <table definition> . . . 56
10.3 <view definition> . . . 57
10.4 <user-defined type definition> . . . 58
10.5 <attribute definition> . . . 62
10.6 <alter type statement> . . . 65
10.7 <drop data type statement> . . . 66
10.8 <SQL-invoked routine> . . . 67
10.9 <alter routine statement> . . . 70
10.10 <drop routine statement> . . . 71
10.11 <user-defined ordering definition> . . . 72
10.12 <drop user-defined ordering statement> . . . 73
11 Access control . . . 74
11.1 <grant privilege statement> . . . 74
11.2 <privileges> . . . 75
11.3 <revoke statement> . . . 76
12 Built-in procedures . . . 77
12.1 SQLJ.INSTALL_JAR procedure . . . 77
12.2 SQLJ.REPLACE_JAR procedure . . . 79
12.3 SQLJ.REMOVE_JAR procedure . . . 81
12.4 SQLJ.ALTER_JAVA_PATH procedure . . . 83
13 Java topics . . . 85
13.1 Java facilities supported by this document . . . 85
13.1.1 Package java.sql . . . 85
13.1.2 System properties . . . 85
13.2 Deployment descriptor files . . . 86
14 Information Schema . . . 89
14.1 Information Schema digital artifact . . . 89
14.2 JAR_JAR_USAGE view . . . 89
14.3 JARS view . . . 90

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14.4 METHOD_SPECIFICATIONS view. . . . 91
14.5 ROUTINE_JAR_USAGE view. . . . 92
14.6 TYPE_JAR_USAGE view. . . . 93
14.7 USER_DEFINED_TYPES view. . . . 94
14.8 Short name views. . . . 95
15 Definition Schema. . . . 96
15.1 Definition Schema digital artifact. . . . 96
15.2 JAR_JAR_USAGE base table. . . . 96
15.3 JARS base table. . . . 98
15.4 METHOD_SPECIFICATIONS base table. . . . 99
15.5 ROUTINE_JAR_USAGE base table. . . . 101
15.6 ROUTINES base table. . . . 102
15.7 TYPE_JAR_USAGE base table. . . . 103
15.8 USAGE_PRIVILEGES base table. . . . 104
15.9 USER_DEFINED_TYPES base table. . . . 105
16 Status codes. . . . 107
16.1 SQLSTATE. . . . 107
17 Conformance. . . . 108
17.1 Claims of conformance to SQL/JRT. . . . 108
17.2 Additional conformance requirements for SQL/JRT. . . . 108
17.3 Implied feature relationships of SQL/JRT. . . . 108
Annex A (informative) **SQL conformance summary. . . . 109**
Annex B (informative) **Implementation-defined elements. . . . 115**
Annex C (informative) **Implementation-dependent elements. . . . 121**
Annex D (informative) **SQL optional feature taxonomy. . . . 123**
Annex E (informative) **Deprecated features. . . . 125**
Annex F (informative) **Incompatibilities with ISO/IEC 9075:2016. . . . 126**
Annex G (informative) **Defect Reports not addressed in this edition of this document. . . . 127**
Bibliography. . . . 128
Index. . . . 129

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Tables

Table

Page

1 Standard programming languages. . . . 42
2 System properties. . . . 85
3 SQLSTATE class and subclass codes. . . . 107
4 Implied feature relationships of SQL/JRT. . . . 108
A.1 Feature definitions outside of Conformance Rules. . . . 109
D.1 Feature taxonomy for optional features. . . . 123

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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 technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

This fifth edition cancels and replaces the fourth edition (ISO/IEC 9075-13:2016), which has been technically revised. It also incorporates the Technical Corrigenda ISO/IEC 9075-13:2016/Cor.1:2019 and ISO/IEC 9075-13:2016/Cor.2:2022.

The main changes are as follows:

— improve the presentation and accuracy of the summaries of implementation-defined and implementation-dependent aspects of this document;

— introduction of several digital artifacts;

— alignment with updated ISO house style and other guidelines for creating standards.

This fifth edition of ISO/IEC 9075-13 is designed to be used in conjunction with the following editions of other parts of the ISO/IEC 9075 series, all published in 2023:

— ISO/IEC 9075-1, sixth edition;

— ISO/IEC 9075-2, sixth edition;

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— ISO/IEC 9075-3, sixth edition;

— ISO/IEC 9075-4, seventh edition;

— ISO/IEC 9075-9, fifth edition;

— ISO/IEC 9075-10, fifth edition;

— ISO/IEC 9075-11, fifth edition;

— ISO/IEC 9075-14, sixth edition;

— ISO/IEC 9075-15, second edition;

— ISO/IEC 9075-16, first edition.

A list of all parts in the ISO/IEC 9075 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

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Introduction

The organization of this document is as follows:

1) Clause 1, "Scope", specifies the scope of this document.

2) Clause 2, "Normative references", identifies additional standards that, through reference in this document, constitute provisions of this document.

3) Clause 3, "Terms and definitions", defines the terms and definitions used in this document.

4) Clause 4, "Concepts", presents concepts used in the definition of Java routines and types.

5) Clause 5, "Lexical elements", defines a number of lexical elements used in the definition of Java routines and types.

6) Clause 6, "Scalar expressions", defines the elements of the language that produce scalar values.

7) Clause 7, "Predicates", defines the predicates of the language.

8) Clause 8, "Additional common rules", specifies the rules for assignments that retrieve data from or store data into SQL-data, and formation rules for set operations.

9) Clause 9, "Additional common elements", defines additional language elements that are used in various parts of the language.

10) Clause 10, "Schema definition and manipulation", defines the schema definition and manipulation statements associated with the definition of Java routines and types.

11) Clause 11, "Access control", defines facilities for controlling access to SQL-data.

12) Clause 12, "Built-in procedures", defines new built-in procedures used in the definition of Java routines and types.

13) Clause 13, "Java topics", defines the facilities supported by implementations of this document and the conventions used in deployment descriptor files.

14) Clause 14, "Information Schema", defines viewed tables that contain schema information.

15) Clause 15, "Definition Schema", defines base tables on which the viewed tables containing schema information depend.

16) Clause 16, "Status codes", defines SQLSTATE values related to Java routines and types.

17) Clause 17, "Conformance", defines the criteria for conformance to this document.

18) Annex A, "SQL conformance summary", is an informative Annex. It summarizes the conformance requirements of the SQL language.

19) Annex B, "Implementation-defined elements", is an informative Annex. It lists those features for which the body of this document states that the syntax, the meaning, the returned results, the effect on SQL-data and/or schemas, or other aspect is partly or wholly implementation-defined.

20) Annex C, "Implementation-dependent elements", is an informative Annex. It lists those features for which the body of this document states that the syntax, the meaning, the returned results, the effect on SQL-data and/or schemas, or other aspect is partly or wholly implementation-dependent.

21) Annex D, "SQL optional feature taxonomy", is an informative Annex. It identifies the optional features of the SQL language specified in this document by an identifier and a short descriptive name. This taxonomy is used to specify conformance.

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22) Annex E, “Deprecated features”, is an informative Annex. It lists features that the responsible Technical Committee intends not to include in a future edition of this document.

23) Annex F, “Incompatibilities with ISO/IEC 9075:2016”, is an informative Annex. It lists incompatibilities with the previous edition of this document.

24) Annex G, “Defect Reports not addressed in this edition of this document”, is an informative Annex. It describes the Defect Reports that were known at the time of publication of this document. Each of these problems is a problem carried forward from the previous edition of the ISO/IEC 9075 series. No new problems have been created in the drafting of this edition of this document.

In the text of this document, Clauses begin a new odd-numbered page, and in Clause 5, “Lexical elements”, through Clause 17, “Conformance”, Subclauses begin a new page. Any resulting blank space is not significant.

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Information technology — Database language SQL —

Part 13:
SQL Routines and Types Using the Java™ Programming Language (SQL/JRT)

1 Scope

This document specifies the ability to invoke static methods written in the Java[1] programming language as SQL-invoked routines and to use classes defined in the Java programming language as SQL structured user-defined types.

1 Java™ is a registered trademark of Oracle Corporation and/or its affiliates.

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2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 9075-1, *Information technology — Database languages — SQL — Part 1: Framework (SQL/Framework)*

ISO/IEC 9075-2, *Information technology — Database languages — SQL — Part 2: Foundation (SQL/Foundation)*

ISO/IEC 9075-10, *Information technology — Database languages — SQL — Part 10: Object Language Bindings (SQL/OLB)*

ISO/IEC 9075-11, *Information technology — Database languages — SQL — Part 11: Information and Definition Schemas (SQL/Schemata)*

Java Community Process. *The Java™ Language Specification* [online]. Java SE 13 Edition. Redwood Shores, California, USA: Oracle, Available at `https://docs.oracle.com/javase/specs/jls/-se13/jls13.pdf`

Java Community Process. *The Java™ Virtual Machine Specification* [online]. Java SE 13 Edition. Redwood Shores, California, USA: Oracle, Available at `https://docs.oracle.com/javase/specs/jvms/-se13/jvms13.pdf`

Java Community Process. *Java™ Object Serialization Specification* [online]. Redwood Shores, California, USA: Oracle, Available at `https://docs.oracle.com/en/java/javase/13/docs/specs/-serialization/serial-arch.html`

Java Community Process. *JDBC™ 4.3 Specification* [online]. Edition 4.3. Redwood Shores, California, USA: Oracle, Available at `https://download.oracle.com/otn-pub/jcp/-jdbc-4_3-mrel3-eval-spec/jdbc4.3-fr-spec.pdf`

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