Data Type Mappings between SQL Statements and Java Applications

A1: Java Primitive Data Types Mapped to SQL Data Types

Data types mapping between the Java primitive data types and SQL data types are shown in Table A.1.

Table A.1   Java Primitive Data Types Mapped to SQL Data Types

Java Type	SQL Data Type
boolean	BIT
Byte[]	VARBINARY or LONGVARBINARY
Double	DOUBLE
float	REAL
int	INTEGER
java.lang.Bignum	NUMERIC
java.sql.Date	DATE
java.sql.Time	TIME
java.sql.Timestamp	TIMESTAMP
Long	BIGINT
String	VARCHAR or LONGVARCHAR

A2:   SQL Data Types Mapped to Java Types

Data types mapping between the SQL data types and Java types are shown in Table A.2.

Table A.2   Methods defined in the DriverManager class

SQL Data Type	Java Type
CHAR	String
VARCHAR	String
LONGVARCHAR	String
NUMERIC	java.lang.Bignum
DECIMAL	java.lang.Bignum
BIT	boolean
TINYINT	Integer
SMALLINT	Integer
INTEGER	Integer
BIGINT	Long
REAL	Float
FLOAT	Double
DOUBLE	Double
BINARY	Byte[]
VARBINARY	Byte[]
LONGVARBINARY	Byte[]
DATE	java.sql.Date
TIME	java.sql.Time
TIMESTAMP	java.sql.Timestamp

A3:   Java Object Types Mapped to SQL Data Types

Data types mapping between the Java object types and SQL data types are shown in Table A.3.

Table A.3   Java Object Types Mapped to SQL Data Types

Java Type	SQL Data Type
Boolean	BIT
byte[]	VARBINARY or LONGVARBINARY
Double	DOUBLE
Float	REAL
Integer	INTEGER
java.lang.Bignum	NUMERIC
java.sql.Date	DATE
java.sql.Time	TIME
java.sql.Timestamp	TIMESTAMP
Long	BIGINT
String	VARCHAR or LONGVARCHAR

A4: SQL Data Types Mapped to Java object Types

Data types mapping between the SQL data types and Java object types are shown in Table A.4.

Table A.4   Methods defined in the DriverManager class

SQL Data Type	Java Type
CHAR	String
VARCHAR	String
LONGVARCHAR	String
NUMERIC	java.lang.Bignum
DECIMAL	java.lang.Bignum
BIT	Boolean
TINYINT	Integer
SMALLINT	Integer
INTEGER	Integer
BIGINT	Long
REAL	Float
FLOAT	Double
DOUBLE	Double
BINARY	byte[]
VARBINARY	byte[]
LONGVARBINARY	byte[]
DATE	java.sql.Date
TIME	java.sql.Time
TIMESTAMP	java.sql.Timestamp

A5: Data Mapping for ResultSet get() Method

Data mappings for ResultSet **get**() method are shown in Table A.5.

Table A.5   Data mappings for ResultSet get() method

	Numeric	Decimal	Tinyint	Binary	Varbinary	Bit	Date	Double	Float	Real	Integer	Bigint	Smallint	Char	Varchar	Time	Timestamp	Longvarchar	Longvarbinary
getBigDecimal()	■	■	▲			▲		▲	▲	▲	▲	▲	▲	▲	▲			▲	
getByte()	▲	▲	■			▲		▲	▲	▲	▲	▲	▲	▲	▲			▲	
getBytes()				■	■														▲
getBoolean()	▲	▲	▲	▲	▲	■		▲	▲	▲	▲	▲	▲	▲	▲			▲	
getDate()							■							▲	▲		▲	▲	
getDouble()	▲	▲	▲	▲	▲	▲		■	■	▲	▲	▲	▲	▲	▲			▲	
getFloat()	▲	▲	▲	▲	▲	▲		▲	▲	■	▲	▲	▲	▲	▲			▲	
getInt()	▲	▲	▲	▲	▲	▲		▲	▲	▲	■	▲	▲	▲	▲			▲	
getLong()	▲	▲	▲	▲	▲	▲		▲	▲	▲	▲	■	▲	▲	▲			▲	
getObject()	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
getShort()	▲	▲	▲	▲	▲	▲		▲	▲	▲	▲	▲	■	▲	▲			▲	
getString()	▲	▲	▲	▲	▲	▲		▲	▲	▲	▲	▲	▲	■	■	▲		▲	
getTime()														▲	▲	■	▲	▲	
getTimeStamp()						▲								▲	▲		■	▲	
getAsciiStream()				▲	▲									▲	▲			■	▲
getBinaryStream()				▲	▲									▲	▲			■	▲
getUnicodeStream()				▲	▲									■					■

■ = Preferred get() method for this SQL data type.
▲ = Acceptable data type for this get() method