

E) Datatypes

13.Oracle built-in data types

Code	Datatype	Description
1	VARCHAR2(size [BYTE CHAR])	<p>Variable-length character string having maximum length size bytes or characters. Maximum size is 4000 bytes or characters, and minimum is 1 byte or 1 character. You must specify size for VARCHAR2.</p> <p>BYTE indicates that the column will have byte length semantics. CHAR indicates that the column will have character semantics.</p>
1	NVARCHAR2(size)	<p>Variable-length Unicode character string having maximum length size characters. The number of bytes can be up to two times size for AL16UTF16 encoding and three times size for UTF8 encoding. Maximum size is determined by the national character set definition, with an upper limit of 4000 bytes. You must specify size for NVARCHAR2.</p>
2	NUMBER [(p [, s])]	<p>Number having precision p and scale s. The precision p can range from 1 to 38. The scale s can range from -84 to 127. Both precision and scale are in decimal digits. A NUMBER value requires from 1 to 22 bytes.</p>
2	FLOAT [(p)]	<p>A subtype of the NUMBER datatype having precision p. A FLOAT value is represented internally as NUMBER. The precision p can range from 1 to 126 binary digits. A FLOAT value requires from 1 to 22 bytes.</p>

8	LONG	Character data of variable length up to 2 gigabytes, or $2^{31} - 1$ bytes. Provided for backward compatibility.
12	DATE	Valid date range from January 1, 4712 BC, to December 31, 9999 AD. The default format is determined explicitly by the NLS_DATE_FORMAT parameter or implicitly by the NLS_TERRITORY parameter. The size is fixed at 7 bytes. This datatype contains the datetime fields YEAR, MONTH, DAY, HOUR, MINUTE, and SECOND. It does not have fractional seconds or a time zone.
21	BINARY_FLOAT	32-bit floating point number. This datatype requires 5 bytes, including the length byte.
22	BINARY_DOUBLE	64-bit floating point number. This datatype requires 9 bytes, including the length byte.
180	TIMESTAMP [(fractional_seconds_precision)]	Year, month, and day values of date, as well as hour, minute, and second values of time, where fractional_seconds_precision is the number of digits in the fractional part of the SECOND datetime field. Accepted values of fractional_seconds_precision are 0 to 9. The default is 6. The default format is determined explicitly by the NLS_DATE_FORMAT parameter or implicitly by the NLS_TERRITORY parameter. The sizes varies from 7 to 11 bytes, depending on the precision. This datatype contains the datetime fields YEAR, MONTH, DAY, HOUR, MINUTE, and SECOND. It contains fractional seconds but does not have a time zone.

181	TIMESTAMP [(fractional_seconds)] WITH TIME ZONE	All values of TIMESTAMP as well as time zone displacement value, where fractional_seconds_precision is the number of digits in the fractional part of the SECOND datetime field. Accepted values are 0 to 9. The default is 6. The default format is determined explicitly by the NLS_DATE_FORMAT parameter or implicitly by the NLS_TERRITORY parameter. The size is fixed at 13 bytes. This datatype contains the datetime fields YEAR, MONTH, DAY, HOUR, MINUTE, SECOND, TIMEZONE_HOUR, and TIMEZONE_MINUTE. It has fractional seconds and an explicit time zone.
231	TIMESTAMP [(fractional_seconds)] WITH LOCAL TIME ZONE	All values of TIMESTAMP WITH TIME ZONE, with the following exceptions: <ul style="list-style-type: none"> • Data is normalized to the database time zone when it is stored in the database. • When the data is retrieved, users see the data in the session time zone. The default format is determined explicitly by the NLS_DATE_FORMAT parameter or implicitly by the NLS_TERRITORY parameter. The sizes varies from 7 to 11 bytes, depending on the precision.
182	INTERVAL YEAR [(year_precision)] TO MONTH	Stores a period of time in years and months, where year_precision is the number of digits in the YEAR datetime field. Accepted values are 0 to 9. The default is 2. The size is fixed at 5 bytes.

183	INTERVAL DAY [(day_precision)] TO SECOND [(fractional_seconds)]	<p>Stores a period of time in days, hours, minutes, and seconds, where</p> <ul style="list-style-type: none"> day_precision is the maximum number of digits in the DAY datetime field. Accepted values are 0 to 9. The default is 2. fractional_seconds_precision is the number of digits in the fractional part of the SECOND field. Accepted values are 0 to 9. The default is 6. <p>The size is fixed at 11 bytes.</p>
23	RAW(size)	Raw binary data of length size bytes. Maximum size is 2000 bytes. You must specify size for a RAW value.
24	LONG RAW	Raw binary data of variable length up to 2 gigabytes.
69	ROWID	Base 64 string representing the unique address of a row in its table. This datatype is primarily for values returned by the ROWID pseudocolumn.
208	UROWID [(size)]	Base 64 string representing the logical address of a row of an index-organized table. The optional size is the size of a column of type UROWID. The maximum size and default is 4000 bytes.
96	CHAR [(size [BYTE CHAR])]	<p>Fixed-length character data of length size bytes or characters. Maximum size is 2000 bytes or characters. Default and minimum size is 1 byte.</p> <p>BYTE and CHAR have the same semantics as for VARCHAR2.</p>

96	NCHAR[(size)]	Fixed-length character data of length size characters. The number of bytes can be up to two times size for AL16UTF16 encoding and three times size for UTF8 encoding. Maximum size is determined by the national character set definition, with an upper limit of 2000 bytes. Default and minimum size is 1 character.
112	CLOB	A character large object containing single-byte or multibyte characters. Both fixed-width and variable-width character sets are supported, both using the database character set. Maximum size is (4 gigabytes - 1) * (database block size).
112	NCLOB	A character large object containing Unicode characters. Both fixed-width and variable-width character sets are supported, both using the database national character set. Maximum size is (4 gigabytes - 1) * (database block size). Stores national character set data.
113	BLOB	A binary large object. Maximum size is (4 gigabytes - 1) * (database block size).
114	BFILE	Contains a locator to a large binary file stored outside the database. Enables byte stream I/O access to external LOBs residing on the database server. Maximum size is 4 gigabytes.