Data Types

Available Data Types

Odysseus provides a wide range of data types for your processing.

Numeric Types

Double

A double-precision 64-bit IEEE 754 floating point.

Float

A single-precision 32-bit IEEE 754 floating point.

Long

An 64-bit signed two's complement integer. Permissible values are -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 (inclusive).

Integer

An 32-bit signed two's complement integer. Permissible values are -2,147,483,648 to 2,147,483,647 (inclusive).

Short

An 16-bit signed two's complement integer. Permissible values are -32,768 to 32,767 (inclusive).

Byte

An 8-bit signed two's complement integer. Permissible values are -128 to 127 (inclusive).

Char

A single 16-bit Unicode character. Permissible values are `'\u0000'` (or 0) to `'\uffff'` (or 65,535 inclusive).

Boolean

A `boolean` with the two possible values: `true` and `false`.

String Types

String

A sequence of characters. A string can contain up to ~2^{31} Unicode characters.

Date and Time Types

Date

Timestamp

Complex Types

Matrix

A nxm matrix consisting of double-precision 64-bit IEEE 754 floating point numbers.

Vector

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A vector consisting of double-precision 64-bit IEEE 754 floating point numbers.

List

A list of objects.

The type of objects in the list has to be defined in the schema definition [['timestamp.unixtimestamp', 'List (Integer)']] and can be accessed in expressions: 'timestamp.unixtimestamp[0] = 1162304033'

Optional Data Types

The following data types are not part of the Odysseus Core and may be restricted.

Spatial Data Types (Spatial Feature)

The spatial data types are based on the "Well-known text" (WKA) format.

SpatialGeometry

A spatial geometry

SpatialGeometryCollection

A spatial geometry collection

SpatialCoordinate

A spatial coordinate with attributes **x**, **y**, and **z**.

SpatialCoordinateSequence

A spatial coordinate sequence

SpatialPolarCoordinate

A spatial polar coordinate with attributes **r**, and **a**

SpatialPoint

A spatial point width attributes **coordinate** and **srid**.

An example for a data input in this format could be:

```
POINT(7.129585 53.648660);SRID=4326
```

or just

```
POINT(7.129585 53.648660)
```

SpatialMultiPoint

A spatial multi point.

SpatialLineString

A spatial line string with attributes **points** and **srid**.

SpatialMultiLineString

A spatial multi line string

SpatialLinearRing

A spatial linear ring

SpatialLinearRingArray

A spatial linear ring array

SpatialPolygon

A spatial polygon width attributes **shell**, **holes**, and **srid**

SpatialMultiPolygon

A spatial multi polygon

Interval Data Types (Interval Feature)

IntervalDouble

An interval with **inf** and **sup**

Image Data Types (Image Feature)

Image

An image with **buffer**, **width**, and **height**

ImageJCV Data Types (ImageJCV Feature)

ImageJCV

An image represented by an IplImage from the OpenCV library. Supports multiple pixel formats, image depths and channel numbers. Here is a list of manipulation functions for the ImageJCV data type.

Probabilistic Data Types (Probabilistic Feature)

ProbabilisticDouble

A continuous or discrete random variable described by a mixture model

Graph Data Types (Graph Server Feature)

Graph

A graph object from the org.graphstream.gs-core library.

GraphNode

A node object from the org.graphstream.gs-core library.

List_GraphNode

A list of node objects from the org.graphstream.gs-core library.

GraphEdge

An edge object from the org.graphstream.gs-core library.

List_GraphEdge

A list of edge objects from the org.graphstream.gs-core library.