

Abracadabra DB - Query Language

Abracadabra DB is using declarative query language. This presentation shows basics query construction.

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Formal Grammar

```
Query ::=
SELECT SelectionList
STREAM TimeSeriesUniqueName
FROM AlgebraicExpression
```

Examples of a correctly formed queries:

```
SELECT field1,field2
STREAM nameOfCreatedSeries
FROM inputTimeSeries1 + inputTimeSeries2
```

```
SELECT (field1+1)/field2
STREAM name2OfCreatedSeries
FROM inputTimeSeries1 # inputTimeSeries2
```

Algebraic Operators

$A \# B$	Interlace of Data Series A and B
$A \& 1/2$ or $A \% 0.5$	Deinterlace and complementary residue of Time Series A in relation of $\Delta = 1/2$
$A + B$	Sum of Time Series A and B
$A - 1/2$	Difference of time series in relation of $\Delta = 1/2$
$A > 30$	Time shift of Time Series by 30 measurements
$A @ (2, 3)$	Agregation and Serialisation of Time Series A.

Examples of complex expressions

- $(A+B)>20$ Summary combination of time series A and B and shift of the result by 20 elements in time.
- $A\#(B>20)$ Time shift of elements of time series B by twenty elements. Result interlaced with time series A.
- $(B+A)\textcircled{2,2}$ Aggregation of combined streams A and B.

Query Example

Example of given query:

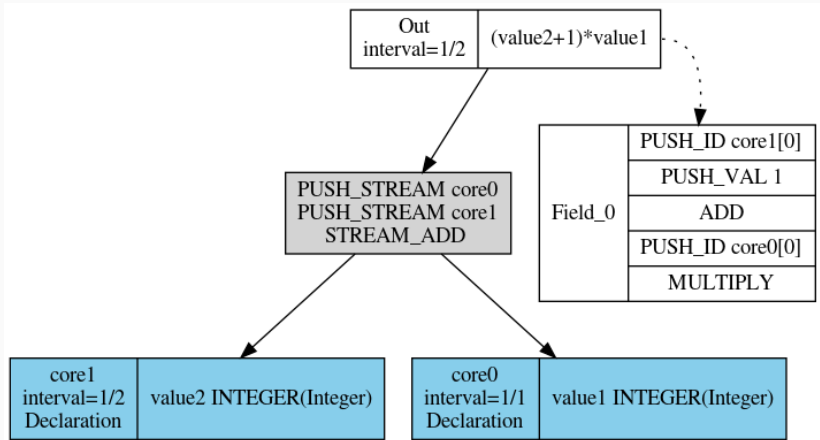
```
DECLARE value1 INTEGER  
STREAM core0,1 FILE datafile2.dat
```

```
DECLARE value2 INTEGER  
STREAM core1,0.5 FILE datafile3.dat
```

```
SELECT (value2+1)*value1 as Field1  
STREAM Out FROM core0+core1
```

Query Plan

Visualisation of query plan:



End

Thank you for your attention.

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