KREO HMI TUTORIAL
Logic operations

Tutorial dedicated to the use of logic operations when calculating dynamic value of the object properties

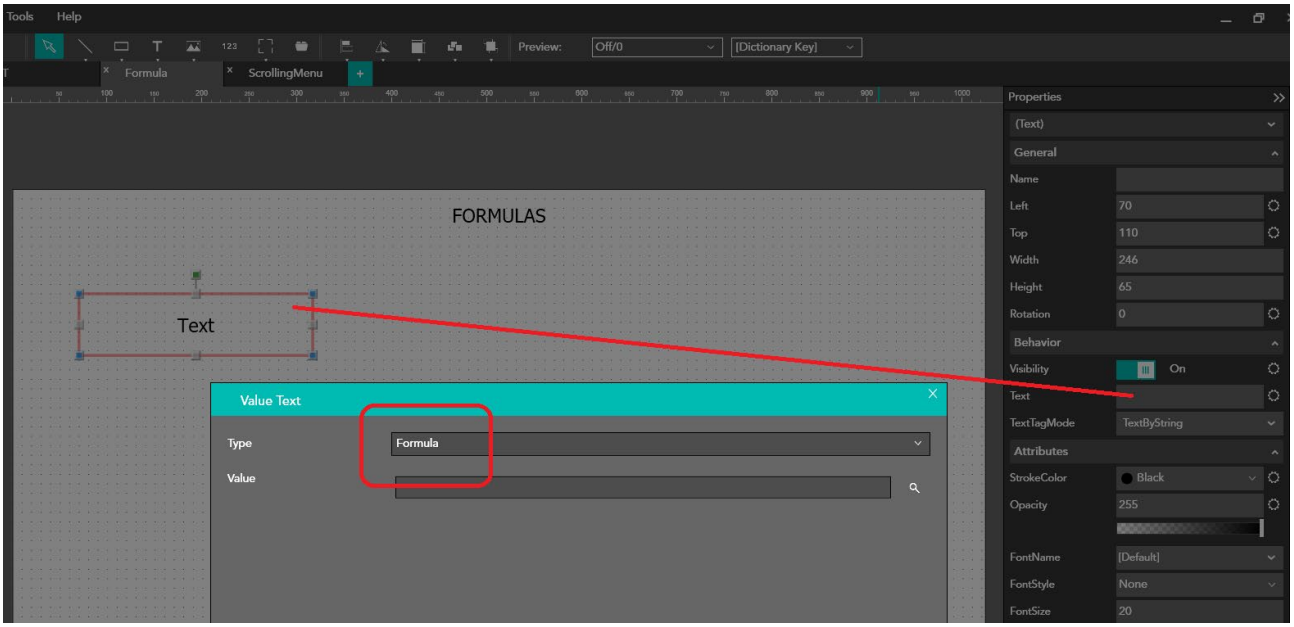
Connect
Ideas.
Shape
solutions.

Introduction

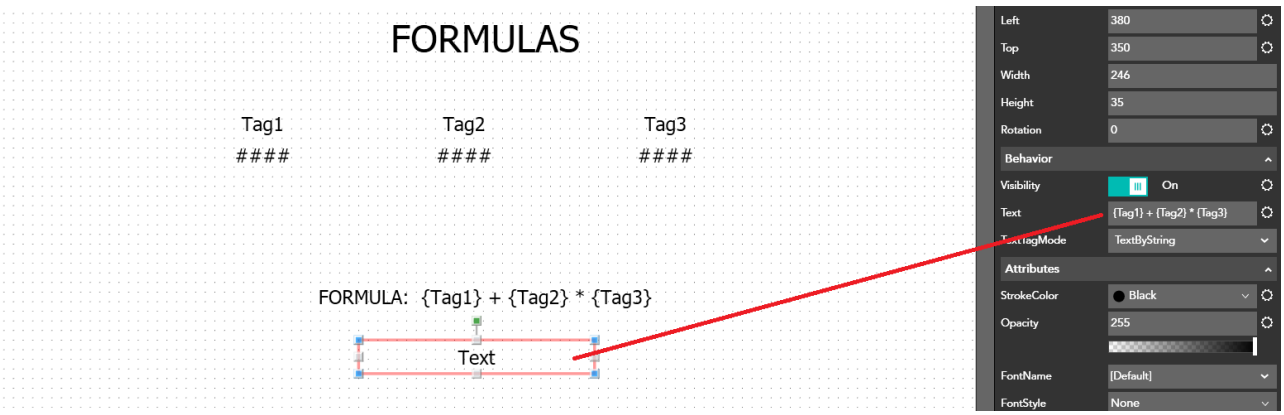
The numeric field in KREO can be mapped to plc tags directly but also allow you to build any logical operations for the direct calculation of the field value.

How to:

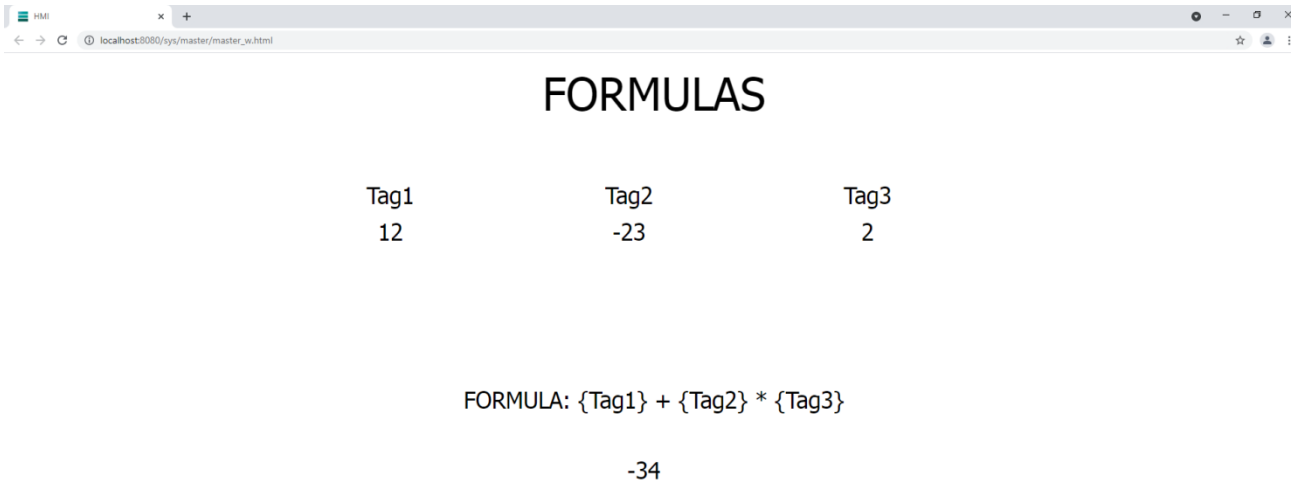
1) Let's suppose a simple text-field on the page and the Text property has to be defined via a logical operation.



2) Let's see a simple case of FORMULA: {Tag1} + {Tag2} *{Tag3}.
So let's configure the project page with the 3 single tags and the text-field with the above formula.



3) The result at RUNTIME will be a simple moltiplication and sum between the three Tags:



4) Of course, the formula can be added with different logical and mathematical operations.

FORMULAS support javascript notation syntax:

- || (logic OR)
- | (bit OR)
- && (logic AND)
- & (bit AND)
- != (DIFFERENT FROM)
- == (EQUAL)
- >, < , >= <= (GT,LT,....)

The complete list of Javascript methods and properties are supported.

Math Object Properties

Property	Description
• E	Returns Euler's number (approx. 2.718)
• LN2	Returns the natural logarithm of 2 (approx. 0.693)
• LN10	Returns the natural logarithm of 10 (approx. 2.302)
• LOG2E	Returns the base-2 logarithm of E (approx. 1.442)
• LOG10E	Returns the base-10 logarithm of E (approx. 0.434)
• PI	Returns PI (approx. 3.14)
• SQRT1_2	Returns the square root of 1/2 (approx. 0.707)
• SQRT2	Returns the square root of 2 (approx. 1.414)

Math Object Methods

Method	Description
• abs(x)	Returns the absolute value of x
• acos(x)	Returns the arccosine of x, in radians
• acosh(x)	Returns the hyperbolic arccosine of x
• asin(x)	Returns the arcsine of x, in radians
• asinh(x)	Returns the hyperbolic arcsine of x
• atan(x)	Returns the arctangent of x as a numeric value between -PI/2 and PI/2 radians
• atan2(y, x)	Returns the arctangent of the quotient of its arguments
• atanh(x)	Returns the hyperbolic arctangent of x
• cbrt(x)	Returns the cubic root of x
• ceil(x)	Returns x, rounded upwards to the nearest integer
• clz32(x)	Returns the number of leading zeros in a 32-bit binary representation of x
• cos(x)	Returns the cosine of x (x is in radians)
• cosh(x)	Returns the hyperbolic cosine of x
• exp(x)	Returns the value of E^x
• expm1(x)	Returns the value of E^x minus 1
• floor(x)	Returns x, rounded downwards to the nearest integer
• fround(x)	Returns the nearest (32-bit single precision) float representation of a number
• log(x)	Returns the natural logarithmof x
• log10(x)	Returns the base-10 logarithm of x
• log1p(x)	Returns the natural logarithm of 1 + x

• log2(x)	Returns the base-2 logarithm of x
• max(x, y, z, ..., n)	Returns the number with the highest value
• min(x, y, z, ..., n)	Returns the number with the lowest value
• pow(x, y)	Returns the value of x to the power of y
• random()	Returns a random number between 0 and 1
• round(x)	Rounds x to the nearest integer
• sign(x)	Returns the sign of a number (checks whether it is positive, negative or zero)
• sin(x)	Returns the sine of x (x is in radians)
• sinh(x)	Returns the hyperbolic sine of x
• sqrt(x)	Returns the square root of x
• tan(x)	Returns the tangent of an angle
• tanh(x)	Returns the hyperbolic tangent of a number
• trunc(x)	Returns the integer part of a number (x)

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