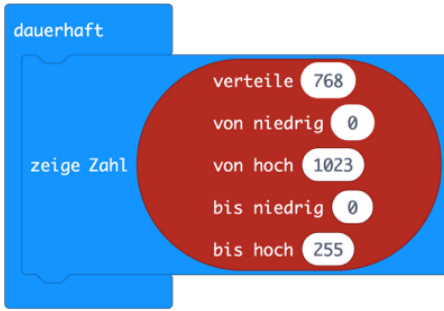


Map Funktion



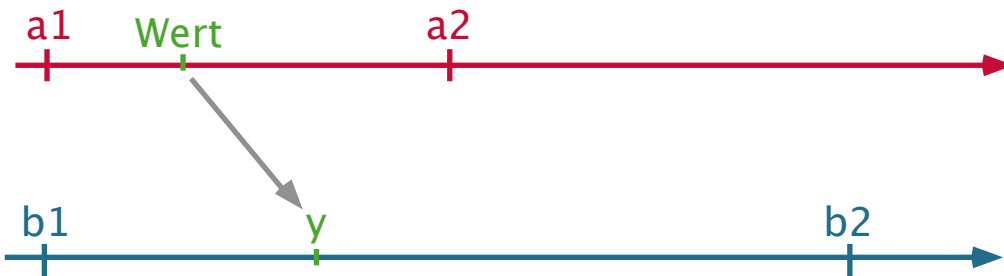
Goal: Use of the map function

Content: Purpose
 Examples of use

Purpose of the map function

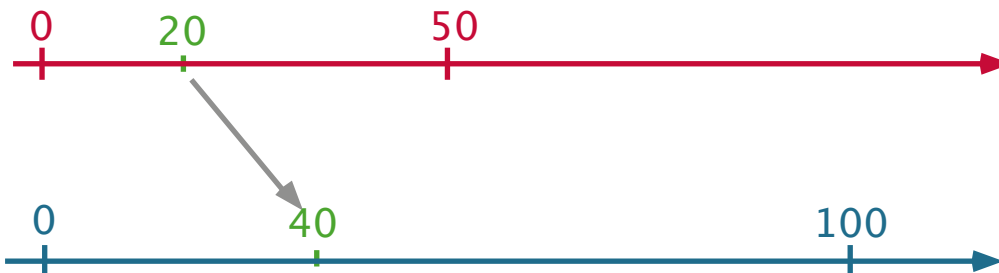
The map function is used to map a numeric value from one range to another range.

$$y = \text{map}(\text{Value}, a1, a2, b1, b2)$$



Example

$$y = \text{map}(20, 0, 50, 0, 100)$$



Parameter of the map function

$$y = \text{map}(\text{Value}, a1, a2, b1, b2)$$

Value: Number to be assigned

a1: lower limit of the current value range

a2: upper limit of the current value range

b1: lower limit of the value target range

b2: upper limit of the value target range

Examples of use

Sometimes, a larger value range must be converted to a smaller one (or the other way around). For example, if a value of the 10-bit ADC value range (0 to 1023) has to be converted to an 8-bit value range (0 to 255).

If values of an 8-bit temperature sensor (0 to 255) are to be assigned to a temperature range of, for example, -20 to +55 degrees, the map function is the perfect choice.

The value range may also be negative.

To divide the value range of a potentiometer (0 to 1023) in such a way that 0 is assigned to the centre position, negative values (-20 to 0) when it is rotated to the left and positive values (0 to 20) when it rotated to the right?

Then proceed as follows:

```
y = map(Potentiometer value, 0, 1023, -20,
```

Info

While the map function of the Arduino returns integer values (decimal values are cut off without rounding or averaging), the MakeCode BlockCode of the Micro Bit returns decimal values.

