lamaLibrary: Power of 10

A power of 10 (10^{x}) is any of the integer powers of the number ten; in other words, ten multiplied by itself a certain number of times. By definition, the number one is a power (*the zeroth power*) of ten.

```
FUNCTION "powerOfTen" : REAL
{ S7_Optimized_Access := 'TRUE' }
VERSION : 0.1
   VAR_INPUT
      power : REAL;   // 10^power
   END_VAR

   VAR_TEMP
      COUNT : INT;
      out : REAL;
      i : INT;
   END_VAR


BEGIN
    // void := 10 ^ power

    // A power of 10 is any of the integer powers of the number ten; in
other words,
    // ten multiplied by itself a certain number of times (when the power is
a positive integer).

    #out := 1.0;

    IF #power > 0.0 THEN                    // positive power
        #count := REAL_TO_INT(#power);
        FOR #i := 0 TO #count DO
            #out := #out * 10.0;
        END_FOR;
    END_IF;

    IF #power < 0.0 THEN                    // negative power
        #count := REAL_TO_INT(#power * -1.0) ;
        FOR #i := 0 TO #count DO
            #out := #out / 10.0;
        END_FOR;
    END_IF;

    // output
    #powerOfTen := #out;
END_FUNCTION
```

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