An overview of the LaTeX Expression python module, presenting all its main features. All the variable names, values and units are merely illustrative.

Firstly, we can define a LaTeX variables `\newVarA` and `\newVarB` using a python script. These variables ($a_2 = 1.23$ mm and `VAR_B`) can be used in any way.

We also used `saveVars()` function. Since next python environment will always invoke a new python session, this and `loadVars()` function transfer defined variables from one session to the other:

$$a_2 = 1.23 \text{ mm}$$

The Variable as well as Expression class output can be formatted in the following way:

$$a = 12345.68 \text{ m} \tag{1}$$
$$a = 12.35 \cdot 10^3 \text{ m} \tag{2}$$
$$a = 12345.6789 \text{ m} \tag{3}$$
$$a = 12345678.90 \cdot 10^{-3} \text{ m} \tag{4}$$
$$a = 12345.68\ m \tag{5}$$
$$a = 12.346 \cdot 10^3 \texttt{ m} \tag{6}$$

And one complex example (with manual multiline split):

$$a_3 = 2.34 \text{ m}$$

$$D_1 = 4.32 \text{ kN}$$

$$b = D_1/a_3 = 4.32/2.34 = 1.85 \text{ kN/m}$$

$$q_2 = \left[\frac{b + M - g}{\sqrt{|g|}} + b\right] \cdot ((-a_3) + D_1) = \left[\frac{1.85 + 63.56 - 9.81}{\sqrt{|9.81|}} + 1.85\right] \cdot ((-2.34) + 4.32) = 38.80 \text{ V}$$

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Also symbolic variables are supported, with the possibility to assign the value later:

$$b = D_1/a_3 = D_1/2.34$$

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LaTeX Expression predefined operations:

$$a = V_1 + c_3 + v_2 = 1.23 + 2.34 + (-3.45) = 0.12 \text{ m}$$

$$a = V_1 \cdot c_3 \cdot v_2 = 1.23 \cdot 2.34 \cdot (-3.45) = (-9.93) \text{ m}$$

$$a = \max(V_1, c_3, v_2) = \max(1.23, 2.34, (-3.45)) = 2.34 \text{ m}$$

$$a = \min(V_1, c_3, v_2) = \min(1.23, 2.34, (-3.45)) = (-3.45) \text{ m}$$

$$a = V_1 - c_3 = 1.23 - 2.34 = (-1.11) \text{ m}$$

$$a = \frac{V_1}{c_3} = \frac{1.23}{2.34} = 0.53 \text{ m}$$

$$a = V_1/c_3 = 1.23/2.34 = 0.53 \text{ m}$$

$$a = {V_1}^{c_3} = 1.23^{2.34} = 1.62 \text{ m}$$

$$a = \sqrt[V_1]{c_3} = \sqrt[1.23]{2.34} = 2.00 \text{ m}$$

$$a = \mathrm{e}^{V_1} = \mathrm{e}^{1.23} = 3.42 \text{ m}$$

$$a = (-V_1) = (-1.23) = (-1.23) \text{ m}$$

$$a = V_1 = 1.23 = 1.23 \text{ m}$$

$$a = |V_1| = |1.23| = 1.23 \text{ m}$$

$$a = {V_1}^2 = 1.23^2 = 1.51 \text{ m}$$

$$a = \sqrt{V_1} = \sqrt{1.23} = 1.11 \text{ m}$$

$$a = \sin V_1 = \sin 1.23 = 0.94 \text{ m}$$

$$a = \cos V_1 = \cos 1.23 = 0.33 \text{ m}$$

$$a = \tan V_1 = \tan 1.23 = 2.82 \text{ m}$$

$$a = \sinh V_1 = \sinh 1.23 = 1.56 \text{ m}$$

$$a = \cosh V_1 = \cosh 1.23 = 1.86 \text{ m}$$

$$a = \tanh V_1 = \tanh 1.23 = 0.84 \text{ m}$$

$$a = \mathrm{e}^{V_1} = \mathrm{e}^{1.23} = 3.42 \text{ m}$$

$$a = \ln V_1 = \ln 1.23 = 0.21 \text{ m}$$

$$a = \log_{10} V_1 = \log_{10} 1.23 = 0.09 \text{ m}$$

$$a = (V_1) = (1.23) = 1.23 \text{ m}$$

$$a = [V_1] = [1.23] = 1.23 \text{ m}$$

$$a = \{V_1\} = \{1.23\} = 1.23 \text{ m}$$

$$a = \langle V_1 \rangle = \langle 1.23 \rangle = 1.23 \text{ m}$$