13.12.2022

Laboratory 6

16. Determine if a tree of type (2) is ballanced (the difference between the depth of two subtrees is equal to 1).

$$myMax(a, b) = \begin{cases} a, \text{ if } a > b \\ b, \text{ otherwise} \end{cases}$$

$$myDiff(a, b) = \begin{cases} a - b, \text{ if } a > b \\ b - a, \text{ otherwise} \end{cases}$$

$$myGetDepth(l_1 l_2 \dots l_n) = \begin{cases} 0, \text{ if } n = 0 \\ 1 + myMax(myGetDepth(l_2), myGetDepth(l_3)), \\ \text{otherwise} \end{cases}$$

$$myBallanced(l_1 \dots l_n) = \begin{cases} true, \text{ if } n = 0 \\ nil, \text{ if } myDiff(myGetDepth(l_2), myGetDepth(l_3)) > 1 \\ myBallanced(l_2) \text{ and } myBallanced(l_3), \\ \text{otherwise} \end{cases}$$