

trees.sty: A Macro for Drawing Binary or Ternary Trees

Peter Vanroose
 Peter.Vanroose@esat.kuleuven.ac.be

18 april 1990

The following macros let you draw a (binary or ternary) tree of any size. For each "internal node", you only have to specify which are the descending nodes, with a `\branch` command (`\tbranch` for ternary node.). To this end, nodes are given a label (only used internally!). These macros will give you some ideas on designing similar things for, e.g., digital circuits.

Trees are constructed with labels on the branches (default 0 and 1), and with text (e.g., its name or value) on the nodes. The first parameter to `\branch` (0, 1, 2 or 3) determines the steepness of the branches.

Example:

```
\begin{picture}(100,100)(-50,10)
\unitlength=2mm
\branchlabels ABC      % 012 is the default
\root(2,10) 0.        % root at absolute coordinate (2,10)
                      % its (internally used) label is 0
                      % the space before the 0 is obligatory
\branch2{16} 0:1,2.    % node 0 (i.e., the root) has children 1 and 2
                      % the text "1.00" is written above it
                      % space is optional, :,. are obligatory
\leaf{4}{\$u_1\$} 1.   % node 1 is a leaf
                      % "0.45" written above, "\$u_1\$" to the right
\branch2{12} 2:3,7.    % branch to node 3 goes up, and has label A
\tbranch2{9} 3:4,5,6.  % the symbols 0--7 can be replaced by anything
\leaf{4}{\$u_3\$}4.    % the symbols 0--7 can be replaced by anything
\leaf{3}{\$u_4\$}5.
\leaf{2}{\$u_5\$}6.
\leaf{3}{\$u_2\$} 7.
\end{picture}
```

will typeset something like:

