Recursion Trees in Latex

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1 Overview

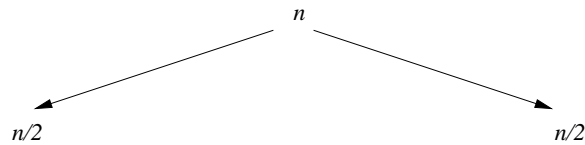There are several choices for giving recurrence trees in latex:

- latex `tabular` or `array` environment

- including a postscript or pdf file generated elsewhere

- latex `picture` environment

- a package for trees (similar in concept to a package for pseudocode)
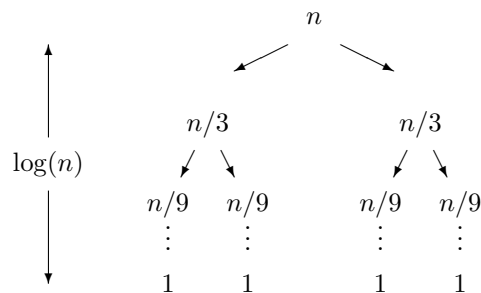
2 Table Example

To describe a recursion tree in Latex, one can use a table. To typeset a table in text mode, use the `tabular` environment (and all math has to go in math mode, between dollar signs). To typeset a table in math mode, use the `array` environment (and all text needs to go in an `\mbox`).

Depth	Number of nodes	Problem size (each node)	total problem size
0	1	n	n
1	3	$n/2$	$3n/2$
2	9	$n/4$	$9n/4$
$\vdots$			
$\log_2(n)$	$3^{\log_2(n)}$	1	$3^{\log_2(n)}$

Figure 1: Included Figure.

n

$n/2$ $n/2$

3 LaTeX Picture Enviornment

n

$\log(n)$

$n/3$ $n/3$

$n/9$ $n/9$ $n/9$ $n/9$

$\vdots$ $\vdots$ $\vdots$ $\vdots$

1 1 1 1

4 Package

You might try a package like:
    `http://www.essex.ac.uk/linguistics/clmt/latex4ling/trees/`
    I'm not familiar with it.

5 Including a Picture

See `http://www.artofproblemsolving.com/LaTeX/AoPS_L_PictHow.php`

These instruction vary from installation to installation. While I could not get that to work, the following did. On linux, I did the following by creating a file using xfig, exporting to `tree.eps`, using the command `latex example2` to get `example2.dvi`, then converting to `example2.pdf` by `dvipdfm example2`. The included tree picture is in Figure 1.

(latex is very good for typesetting mathematics and related technical material, but not very good for simple images.)