

# A tree macro

Hideki ISOZAKI  
NTT Basic Research Labs & Stanford Univ.

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## 1 Setup

Include epic.sty and ecltree.sty<sup>1</sup> in your `\documentstyle` option as below.

```
\documentstyle[epic,ecltree]{article}
```

If your printer driver accepts tpic commands, you should specify eepic.sty after epic.sty.

```
\documentstyle[epic,eepic,ecltree]{article}
```

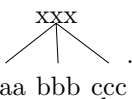
As eepic.sty redefines some macros defined in epic.sty, Do not reverse this order.

## 2 bundle environment

A tree is drawn by *bundle* environment. The *bundle* environment has one argument. This argument specifies the top node label. Leaves should be specified by `\chunk` in this environment.

If you write

```
\begin{bundle}{xxx}  
\chunk{aaa}  
\chunk{bbb}  
\chunk{ccc}  
\end{bundle}
```

you get  .

You can nest the *bundle* environment. If you write

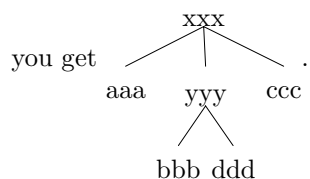
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<sup>1</sup>Electrical Communications Labs

```

\begin{bundle}{xxx}
\chunk{aaa}
\chunk{
  \begin{bundle}{yyy}
  \chunk{bbb}
  \chunk{ddd}
  \end{bundle}}
\chunk{ccc}
\end{bundle}

```



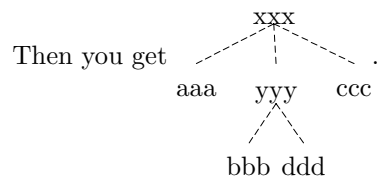
### 3 Line attribute

You can draw not only solid lines but also dotted lines and dash lines. `epic.sty` and `eepic.sty` define several commands for them. If you want to use

```
\dashline[65]{3}(x1,y1)(x2,y2)
```

to draw lines, use `\drawwith` command before (or in) the bundle environment.

```
\drawwith{\dashline[65]{3}}
```

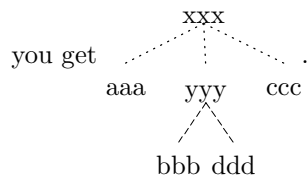


The argument of `\drawwith` is evaluated at `\end{bundle}`. Hence, if you write

```

\begin{bundle}{xxx}
\chunk{aaa}
\chunk{
  \begin{bundle}{yyy}
  \drawwith{\drawline}
  \chunk{bbb}
  \drawwith{\dashline[65]{3}}
  \chunk{ddd}
  \end{bundle}}
\drawwith{\dottedline{3}}
\chunk{ccc}
\end{bundle}

```

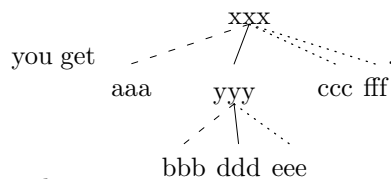


You can nest the `\drawwith`. If you write

```

\drawwith{\drawwith{\drawwith{\dottedline{3}}\drawline}\dashline{3}}
\begin{bundle}{xxx}
\chunk{aaa}
\chunk{
  \begin{bundle}{yyy}
  \chunk{bbb}
  \chunk{ddd}
  \chunk{eee}
  \end{bundle}}
\chunk{ccc}
\chunk{fff}
\end{bundle}

```



Thus the nested `\drawwith` is used in the reverse

order.

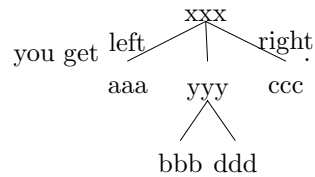
## 4 Edge labels

You can write edge labels. They should be specified as the optional argument of `\chunk`. Note that the width of an edge label is neglected. If you write

```

\begin{bundle}{xxx}
\chunk[left]{aaa}
\chunk{
  \begin{bundle}{yyy}
  \chunk{bbb}
  \chunk{ddd}
  \end{bundle}}
\chunk[right]{ccc}
\end{bundle}

```



## 5 Spacing

The *bundle* environment has three parameters for spacing.

- `\GapDepth` means minimum height of gaps between adjacent nodes.
- `\GapWidth` means minimum width of gaps between adjacent nodes.
- `\EdgeLabelSep` means height of an edge label from the lower node of the edge.

You should set these parameters before the `bundle` environment if you dislike default values.

If you write

```

\begin{bundle}{xxx}
\chunk{aaa}
\chunk{
\setlength{\GapDepth}{5pt}
\setlength{\GapWidth}{5pt}
\begin{bundle}{yyy}
\chunk{bbb}
\chunk{ddd}
\end{bundle}}
\chunk{ccc}
\end{bundle}
  
```

