

# Notes on the XY-pic syntax

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## 1 “Mixing XY-pic code”

Section “5.6. Mixing XY-pic code” of `xypic/barrdoc.pdf` has this chunk of XY-pic code intermixed with diagxy code (with another formatting):

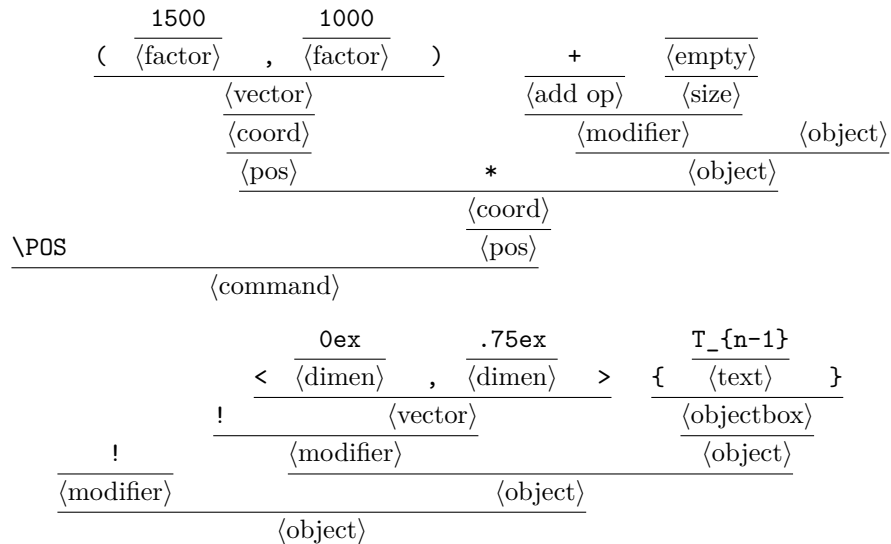
```
\POS(1500,1000)*+!!<0ex,.75ex>{T_{n-1}}
\ar@{-}!|{(1000,500);(1500,500)}\hole(1167,334)
\POS(1167,334)
\ar|!|{(1000,500);(1000,0)}\hole_<(.6){h_{n-1}}
(500,0)*+!!<0ex,.75ex>{S_n}
```

### 1.1 First line

Its first line is:

```
\POS(1500,1000)*+!!<0ex,.75ex>{T_{n-1}}
```

Its parse tree is:



## 1.2 Second line

Its second line is:

```
\ar@{-}!!{(1000,500);(1500,500)}
```

Let's start by two subexpressions:

$$\frac{\frac{\langle \text{empty} \rangle}{\langle \text{variant} \rangle} \left\{ \frac{\langle \text{tipchar} \rangle^*}{\langle \text{tip} \rangle} \frac{\frac{\langle \text{connchar} \rangle}{\langle \text{connchar} \rangle^*}}{\langle \text{conn} \rangle} \frac{\langle \text{tipchar} \rangle^*}{\langle \text{tip} \rangle} \right\}}{\langle \text{form} \rangle}$$

$$\frac{\left( \frac{\frac{1000}{\langle \text{factor} \rangle}}{\langle \text{vector} \rangle}, \frac{\frac{500}{\langle \text{factor} \rangle}}{\langle \text{vector} \rangle} \right)}{\frac{\langle \text{coord} \rangle}{\langle \text{pos} \rangle}}; \frac{\left( \frac{\frac{1500}{\langle \text{factor} \rangle}}{\langle \text{vector} \rangle}, \frac{\frac{500}{\langle \text{factor} \rangle}}{\langle \text{vector} \rangle} \right)}{\frac{\langle \text{coord} \rangle}{\langle \text{pos} \rangle}}$$

$$\frac{\frac{! \left\{ \frac{\frac{(1000,500);(1500,500)}{\langle \text{pos} \rangle}}{\langle \text{place} \rangle} \right\} \frac{\langle \text{empty} \rangle}{\langle \text{slide} \rangle}}{\langle \text{anchor} \rangle}}{\langle \text{labels} \rangle} \frac{\text{????}}{\langle \text{cs} \rangle} \frac{\langle \text{empty} \rangle}{\langle \text{it} \rangle} \frac{\langle \text{empty} \rangle}{\langle \text{alias} \rangle} \frac{\langle \text{empty} \rangle}{\langle \text{labels} \rangle}$$

I don't know what is a  $\langle \text{cs} \rangle$ , I'm guessing that it can expand to  $\langle \text{empty} \rangle$ . Then, if a  $\langle \text{pos} \rangle$  can expand to  $\langle \text{empty} \rangle$ , then:

$$\frac{\frac{\frac{\frac{\langle \text{form} \rangle}{\langle \text{form} \rangle^*}}{\langle \text{arrow} \rangle}}{\langle \text{TeX commands} \rangle}}{\langle \text{command} \rangle} \frac{\frac{\frac{\text{????}}{\langle \text{pos} \rangle}}{\langle \text{path-pos} \rangle} \frac{\langle \text{empty} \rangle}{\langle \text{slide} \rangle} \frac{\frac{! \{(1000,500);(1500,500)\}}{\langle \text{labels} \rangle}}{\langle \text{segment} \rangle}}{\langle \text{path} \rangle}}$$

## 2 Hyperlinks to the syntax tables in xyrefer.pdf

A sexp like (find-xyreferpage 8 "<pos>") opens xyrefer.pdf at page 8 using xpdf. See the section about “elisp hyperlinks” here for the general idea:

<http://angg.twu.net/eev-intros/find-eev-quick-intro.html>

The "<pos>" is ignored.

I use this as an index for the Xy-pic syntax.

```
;; (find-xyreferpage 8 "<pos>")
;; (find-xyreferpage 8 "<coord>")
;; (find-xyreferpage 8 "<vector>")
;; (find-xyreferpage 8 "<corner>")
;; (find-xyreferpage 8 "<place>")
;; (find-xyreferpage 8 "<slide>")
;; (find-xyreferpage 8 "Figure 1: <pos>itions.")
;;
;; (find-xyreferpage 12 "<object>")
;; (find-xyreferpage 12 "<objectbox>")
;; (find-xyreferpage 12 "<modifier>")
;; (find-xyreferpage 12 "<add op>")
;; (find-xyreferpage 12 "<size>")
;; (find-xyreferpage 12 "<direction>")
;; (find-xyreferpage 12 "<diag>")
;; (find-xyreferpage 12 "<composite>")
;; (find-xyreferpage 12 "Figure 3: <object>s.")
;;
;; (find-xyreferpage 16 "<decor>")
;; (find-xyreferpage 16 "<command>")
;; (find-xyreferpage 16 "Figure 4: <decor>ations.")
;;
;; (find-xyreferpage 19 "\\cir <radius> { <cir> }")
;; (find-xyreferpage 19 "<radius>")
;; (find-xyreferpage 19 "<cir>")
;; (find-xyreferpage 19 "<orient>")
;; (find-xyreferpage 19 "Figure 6: <cir>cles.")
;;
;; (find-xyreferpage 22 "\\curve <modifier> { <curve-object> <poslist> }")
;; (find-xyreferpage 22 "<modifier>")
;; (find-xyreferpage 22 "<curve-option>")
;; (find-xyreferpage 22 "<curve-object>")
;; (find-xyreferpage 22 "<poslist>")
;; (find-xyreferpage 22 "<delim>")
;; (find-xyreferpage 22 "Figure 7: Syntax for curves.")
;;
;; (find-xyreferpage 39 "\\PATH <path>")
;; (find-xyreferpage 39 "\\afterPATH { <decor> } <path>")
;; (find-xyreferpage 39 "<path>")
;; (find-xyreferpage 39 "<turn>")
;; (find-xyreferpage 39 "<turnradius>")
;; (find-xyreferpage 39 "<segment>")
;; (find-xyreferpage 39 "<slide>")
;; (find-xyreferpage 39 "<labels>")
;; (find-xyreferpage 39 "<anchor>")
;; (find-xyreferpage 39 "<it>")
;; (find-xyreferpage 39 "<alias>")
;; (find-xyreferpage 39 "Figure 14: <path>s")
;;
;; (find-xyreferpage 42 "\\ar <arrow> <path>")
;; (find-xyreferpage 42 "<arrow>")
;; (find-xyreferpage 42 "<form>")
;; (find-xyreferpage 42 "<variant>")
;; (find-xyreferpage 42 "<tip>")
;; (find-xyreferpage 42 "<tipchar>")
;; (find-xyreferpage 42 "<conn>")
;; (find-xyreferpage 42 "<connchar>")
;; (find-xyreferpage 42 "Figure 15: <arrow>s.")
```