Examples of proof.sty

`\infer` draws beautiful proof figures easily:

(1)

$$\infer{A}{\infer{B}{B11 \mathbin{\&} B12 \mathbin{\&} B13 & B21 \mathbin{\&} B22 \mathbin{\&} B23} & C}$$

(2)

$$\infer{A1 \mathbin{\&} A2 \mathbin{\&} A3 \mathbin{\&} A4 \mathbin{\&} A5 \mathbin{\&} A6}{\infer{B}{B11 \mathbin{\&} B12 \mathbin{\&} B13 & B21 \mathbin{\&} B22 \mathbin{\&} B23} & C}$$

(3)

$$\infer{A1 \mathbin{\&} A2 \mathbin{\&} A3 \mathbin{\&} A4 \mathbin{\&} A5 \mathbin{\&} A6}{C & \infer{B}{B11 \mathbin{\&} B12 \mathbin{\&} B13 & B21 \mathbin{\&} B22 \mathbin{\&} B23}}$$

You can use also some variations:

(4)

$$\infer[(1)]{A}{\infer*{B}{B11 \mathbin{\&} B12 \mathbin{\&} B13 & B21 \mathbin{\&} B22 \mathbin{\&} B23} & C}$$

(5)

$$\infer*[(1)]{A1 \mathbin{\&} A2 \mathbin{\&} A3 \mathbin{\&} A4 \mathbin{\&} A5 \mathbin{\&} A6}{\infer=[\textstyle\sum]{B}{B11 \mathbin{\&} B12 \mathbin{\&} B13 & B21 \mathbin{\&} B22 \mathbin{\&} B23} & \infer[(2)]{C}{}}$$

(6)

$$\infer={A}{A \mathbin{\&} B \mathbin{\&} C}$$

Here are more practical examples:

(7)

$$\infer[(\&I)]{A \mathbin{\&} B}{A & B} \qquad \infer[(\&E_l)]{A}{A \mathbin{\&} B} \qquad \infer[(\&E_r)]{B}{A \mathbin{\&} B}$$

$$\infer[(\to I)]{A \to B}{\infer*{B}{[A]}} \qquad \infer[(\to E)]{B}{A \to B & A}$$

Some techniques: Use `\vcenter` for an equation of proofs.

(8)
$$\pi = \underline{A \quad \dfrac{\dfrac{B \quad C}{D}}{E}}$$

Use \kern to adjust the form of a proof.

(9)
$$\dfrac{A \quad \dfrac{B \quad C}{D}}{E}$$