

Første spæde udkast til Logiweb rapport, version 0.01

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Hello world! Denne version har indhold fra to prioritetstabeller. Det ser ud til at give problemer.

1 Pyk definitions

[mytest $\xrightarrow{\text{pyk}}$ "mytest"]

2 Priority table

[mytest $\xrightarrow{\text{prio}}$

Preassociative

[mytest], [base], [bracket * end bracket], [big bracket * end bracket], [\$ * \$],
[flush left [*]], [x], [y], [z], [[* \bowtie *]], [[* $\xrightarrow{*}$ *]], [pyk], [tex], [name], [prio], [*], [T],
[if(*, *, *)], [[* $\xrightarrow{*}$ *]], [val], [claim], [\perp], [f(*)], [(*)^I], [F], [0], [1], [2], [3], [4], [5], [6],
[7], [8], [9], [0], [1], [2], [3], [4], [5], [6], [7], [8], [9], [a], [b], [c], [d], [e], [f], [g], [h], [i], [j],
[k], [l], [m], [n], [o], [p], [q], [r], [s], [t], [u], [v], [w], [(*)^M], [If(*, *, *)],
[array{*} * end array], [l], [c], [r], [empty], [(* | * := *)], [\mathcal{M} (*)], [$\tilde{\mathcal{U}}$ (*)], [\mathcal{U} (*)],
[\mathcal{U}^M (*)], [apply(*, *)], [apply₁(*, *)], [identifier(*)], [identifier₁(*, *)], [array-
plus(*, *)], [array-remove(*, *, *)], [array-put(*, *, *, *)], [array-add(*, *, *, *, *)],
[bit(*, *)], [bit₁(*, *)], [rack], ["vector"], ["bibliography"], ["dictionary"],
["body"], ["codex"], ["expansion"], ["code"], ["cache"], ["diagnose"], ["pyk"],
["tex"], ["texname"], ["value"], ["message"], ["macro"], ["definition"],
["unpack"], ["claim"], ["priority"], ["lambda"], ["apply"], ["true"], ["if"],
["quote"], ["proclaim"], ["define"], ["introduce"], ["hide"], ["pre"], ["post"],
[\mathcal{E} (*, *, *)], [\mathcal{E}_2 (*, *, *, *, *)], [\mathcal{E}_3 (*, *, *, *, *)], [\mathcal{E}_4 (*, *, *, *, *)], [lookup(*, *, *)],

$[\mathcal{M}_4(*, *, *, *)]$, $[\mathcal{M}(*, *, *)]$, $[\mathcal{Q}(*, *, *)]$, $[\mathcal{Q}_2(*, *, *)]$, $[\mathcal{Q}_3(*, *, *, *)]$, $[\mathcal{Q}^*(*, *, *)]$,
 $[(*)]$, $[\langle * \rangle]$, $[\text{display}(*)]$, $[\text{statement}(*)]$, $[[*]^+]$, $[[*]^-]$, $[\text{aspect}(*, *)]$,
 $[\text{aspect}(*, *, *)]$, $[\langle * \rangle]$, $[\text{tuple}_1(*)]$, $[\text{tuple}_2(*)]$, $[\text{let}_2(*, *)]$, $[\text{let}_1(*, *)]$,
 $[[* \stackrel{\text{claim}}{=} *]]$, $[\text{checker}]$, $[\text{check}(*, *)]$, $[\text{check}_2(*, *, *)]$, $[\text{check}_3(*, *, *, *)]$,
 $[\text{check}^*(*, *)]$, $[\text{check}_2^*(*, *, *)]$, $[[*]^+]$, $[[*]^-]$, $[[*]^\circ]$, $[\text{msg}]$, $[[* \stackrel{\text{msg}}{=} *]]$, $[\langle \text{stmt} \rangle]$,
 $[\text{stmt}]$, $[[* \stackrel{\text{stmt}}{=} *]]$, $[\text{HeadNil}']$, $[\text{HeadPair}']$, $[\text{Transitivity}']$, $[\perp]$, $[\text{Contra}']$, $[\text{T}'_E]$,
 $[\mathcal{L}_1]$, $[\mathcal{L}_2]$, $[\mathcal{A}]$, $[\mathcal{B}]$, $[\mathcal{C}]$, $[\mathcal{D}]$, $[\mathcal{E}]$, $[\mathcal{F}]$, $[\mathcal{G}]$, $[\mathcal{H}]$, $[\mathcal{I}]$, $[\mathcal{J}]$, $[\mathcal{K}]$, $[\mathcal{L}]$, $[\mathcal{M}]$, $[\mathcal{N}]$, $[\mathcal{O}]$, $[\mathcal{P}]$, $[\mathcal{Q}]$,
 $[\mathcal{R}]$, $[\mathcal{S}]$, $[\mathcal{T}]$, $[\mathcal{U}]$, $[\mathcal{V}]$, $[\mathcal{W}]$, $[\mathcal{X}]$, $[\mathcal{Y}]$, $[\mathcal{Z}]$, $[\langle * | * := * \rangle]$, $[\langle * * | * := * \rangle]$, $[\emptyset]$, $[\text{Remainder}]$,
 $[(*)^\forall]$, $[\text{intro}(*, *, *, *)]$, $[\text{intro}(*, *, *)]$, $[\text{error}(*, *)]$, $[\text{error}_2(*, *)]$, $[\text{proof}(*, *, *)]$,
 $[\text{proof}_2(*, *)]$, $[\mathcal{S}(*, *)]$, $[\mathcal{S}^I(*, *)]$, $[\mathcal{S}^{\triangleright}(*, *)]$, $[\mathcal{S}_1^{\triangleright}(*, *, *)]$, $[\mathcal{S}^E(*, *)]$, $[\mathcal{S}_1^E(*, *, *)]$,
 $[\mathcal{S}^+(*, *)]$, $[\mathcal{S}_1^+(*, *, *)]$, $[\mathcal{S}^-(*, *)]$, $[\mathcal{S}_1^-(*, *, *)]$, $[\mathcal{S}^*(*, *)]$, $[\mathcal{S}_1^*(*, *, *)]$,
 $[\mathcal{S}_2^*(*, *, *, *)]$, $[\mathcal{S}^\otimes(*, *)]$, $[\mathcal{S}_1^\otimes(*, *, *)]$, $[\mathcal{S}^{\dagger}(*, *)]$, $[\mathcal{S}_1^{\dagger}(*, *, *, *)]$, $[\mathcal{S}^{\#}(*, *)]$,
 $[\mathcal{S}_1^{\#}(*, *, *, *)]$, $[\mathcal{S}^{i.e.}(*, *)]$, $[\mathcal{S}_1^{i.e.}(*, *, *, *)]$, $[\mathcal{S}_2^{i.e.}(*, *, *, *, *)]$, $[\mathcal{S}^\forall(*, *)]$,
 $[\mathcal{S}_1^\forall(*, *, *, *, *)]$, $[\mathcal{S}^i(*, *)]$, $[\mathcal{S}_1^i(*, *, *, *)]$, $[\mathcal{S}_2^i(*, *, *, *, *)]$, $[\mathcal{T}(*)]$, $[\text{claims}(*, *, *)]$,
 $[\text{claims}_2(*, *, *)]$, $[\langle \text{proof} \rangle]$, $[\text{proof}]$, $[[\text{Lemma } * : *]]$, $[[\text{Proof of } * : *]]$,
 $[[* \text{ lemma } * : *]]$, $[[* \text{ antilemma } * : *]]$, $[[* \text{ rule } * : *]]$, $[[* \text{ antirule } * : *]]$,
 $[\text{verifier}]$, $[\mathcal{V}_1(*)]$, $[\mathcal{V}_2(*, *)]$, $[\mathcal{V}_3(*, *, *, *)]$, $[\mathcal{V}_4(*, *)]$, $[\mathcal{V}_5(*, *, *, *, *)]$, $[\mathcal{V}_6(*, *, *, *, *)]$,
 $[\mathcal{V}_7(*, *, *, *, *)]$, $[\text{Cut}(*, *)]$, $[\text{Head}_\oplus(*)]$, $[\text{Tail}_\oplus(*)]$, $[\text{rule}_1(*, *)]$, $[\text{rule}(*, *)]$,
 $[\text{Rule tactic}]$, $[\text{Plus}(*, *)]$, $[[\text{Theory } *]]$, $[\text{theory}_2(*, *)]$, $[\text{theory}_3(*, *)]$,
 $[\text{theory}_4(*, *, *, *)]$, $[\text{HeadNil}'']$, $[\text{HeadPair}'']$, $[\text{Transitivity}'']$, $[\text{Contra}'']$, $[\text{HeadNil}]$,
 $[\text{HeadPair}]$, $[\text{Transitivity}]$, $[\text{Contra}]$, $[\text{T}_E]$, $[\text{ragged right}]$,
 $[\text{ragged right expansion}]$, $[\text{parm}(*, *, *)]$, $[\text{parm}^*(*, *, *)]$, $[\text{inst}(*, *)]$,
 $[\text{inst}^*(*, *)]$, $[\text{occur}(*, *, *)]$, $[\text{occur}^*(*, *, *)]$, $[\text{unify}(* = *, *)]$, $[\text{unify}^*(* = *, *)]$,
 $[\text{unify}_2(* = *, *)]$, $[\mathcal{L}_a]$, $[\mathcal{L}_b]$, $[\mathcal{L}_c]$, $[\mathcal{L}_d]$, $[\mathcal{L}_e]$, $[\mathcal{L}_f]$, $[\mathcal{L}_g]$, $[\mathcal{L}_h]$, $[\mathcal{L}_i]$, $[\mathcal{L}_j]$, $[\mathcal{L}_k]$, $[\mathcal{L}_l]$, $[\mathcal{L}_m]$,
 $[\mathcal{L}_n]$, $[\mathcal{L}_o]$, $[\mathcal{L}_p]$, $[\mathcal{L}_q]$, $[\mathcal{L}_r]$, $[\mathcal{L}_s]$, $[\mathcal{L}_t]$, $[\mathcal{L}_u]$, $[\mathcal{L}_v]$, $[\mathcal{L}_w]$, $[\mathcal{L}_x]$, $[\mathcal{L}_y]$, $[\mathcal{L}_z]$, $[\mathcal{L}_A]$, $[\mathcal{L}_B]$, $[\mathcal{L}_C]$,
 $[\mathcal{L}_D]$, $[\mathcal{L}_E]$, $[\mathcal{L}_F]$, $[\mathcal{L}_G]$, $[\mathcal{L}_H]$, $[\mathcal{L}_I]$, $[\mathcal{L}_J]$, $[\mathcal{L}_K]$, $[\mathcal{L}_L]$, $[\mathcal{L}_M]$, $[\mathcal{L}_N]$, $[\mathcal{L}_O]$, $[\mathcal{L}_P]$, $[\mathcal{L}_Q]$, $[\mathcal{L}_R]$,
 $[\mathcal{L}_S]$, $[\mathcal{L}_T]$, $[\mathcal{L}_U]$, $[\mathcal{L}_V]$, $[\mathcal{L}_W]$, $[\mathcal{L}_X]$, $[\mathcal{L}_Y]$, $[\mathcal{L}_Z]$, $[\mathcal{L}_?]$, $[\text{Reflexivity}]$, $[\text{Reflexivity}_1]$,
 $[\text{Commutativity}]$, $[\text{Commutativity}_1]$, $[\langle \text{tactic} \rangle]$, $[\text{tactic}]$, $[[* \stackrel{\text{tactic}}{=} *]]$, $[\mathcal{P}(*, *, *)]$,
 $[\mathcal{P}^*(*, *, *)]$, $[\text{p}_0]$, $[\text{conclude}_1(*, *)]$, $[\text{conclude}_2(*, *, *)]$, $[\text{conclude}_3(*, *, *, *)]$,
 $[\text{conclude}_4(*, *)]$, $[\text{check}]$, $[[* \stackrel{\circ}{=} *]]$, $[\text{RootVisible}(*)]$, $[\mathcal{A}]$, $[\mathcal{R}]$, $[\mathcal{C}]$, $[\mathcal{T}]$, $[\mathcal{L}]$, $[\{ * \}]$, $[\bar{*}]$,
 $[a]$, $[b]$, $[c]$, $[d]$, $[e]$, $[f]$, $[g]$, $[h]$, $[i]$, $[j]$, $[k]$, $[l]$, $[m]$, $[n]$, $[o]$, $[p]$, $[q]$, $[r]$, $[s]$, $[t]$, $[u]$, $[v]$,
 $[w]$, $[x]$, $[y]$, $[z]$, $[\langle * \equiv * | * := * \rangle]$, $[\langle * \equiv^0 * | * := * \rangle]$, $[\langle * \equiv^1 * | * := * \rangle]$, $[\langle * \equiv^* * | * := * \rangle]$,
 $[\text{Ded}(*, *)]$, $[\text{Ded}_0(*, *)]$, $[\text{Ded}_1(*, *, *)]$, $[\text{Ded}_2(*, *, *)]$, $[\text{Ded}_3(*, *, *, *)]$,
 $[\text{Ded}_4(*, *, *, *)]$, $[\text{Ded}_4^*(*, *, *, *)]$, $[\text{Ded}_5(*, *, *)]$, $[\text{Ded}_6(*, *, *, *)]$,
 $[\text{Ded}_6^*(*, *, *, *)]$, $[\text{Ded}_7(*)]$, $[\text{Ded}_8(*, *)]$, $[\text{Ded}_8^*(*, *)]$, $[\mathcal{S}]$, $[\text{Neg}]$, $[\text{MP}]$, $[\text{Gen}]$,
 $[\text{Ded}]$, $[\text{S1}]$, $[\text{S2}]$, $[\text{S3}]$, $[\text{S4}]$, $[\text{S5}]$, $[\text{S6}]$, $[\text{S7}]$, $[\text{S8}]$, $[\text{S9}]$, $[\text{Repetition}]$, $[\text{A1}']$, $[\text{A2}']$, $[\text{A4}']$,
 $[\text{A5}']$, $[\text{Prop 3.2a}]$, $[\text{Prop 3.2b}]$, $[\text{Prop 3.2c}]$, $[\text{Prop 3.2d}]$, $[\text{Prop 3.2e}_1]$, $[\text{Prop 3.2e}_2]$,
 $[\text{Prop 3.2e}]$, $[\text{Prop 3.2f}_1]$, $[\text{Prop 3.2f}_2]$, $[\text{Prop 3.2f}]$, $[\text{Prop 3.2g}_1]$, $[\text{Prop 3.2g}_2]$,
 $[\text{Prop 3.2g}]$, $[\text{Prop 3.2h}_1]$, $[\text{Prop 3.2h}_2]$, $[\text{Prop 3.2h}]$, $[\text{Block}_1(*, *, *)]$, $[\text{Block}_2(*)]$;
Preassociative
 $[*_{-}\{ * \}]$, $[*/\text{indexintro}(*, *, *, *)]$, $[*/\text{intro}(*, *, *)]$, $[*/\text{bothintro}(*, *, *, *, *)]$,

Preassociative

[“ * ”], [], [(*)^t], [string(*) + *], [string(*) ++ *], [
 *], [*], [! *], [“ * ”], [# *], [\$ *], [% *], [& *], [’ *], [(*), () *], [* *], [+ *], [, *], [- *], [. *], [/ *],
 [0 *], [1 *], [2 *], [3 *], [4 *], [5 *], [6 *], [7 *], [8 *], [9 *], [: *], [; *], [< *], [= *], [> *], [? *],
 [@ *], [A *], [B *], [C *], [D *], [E *], [F *], [G *], [H *], [I *], [J *], [K *], [L *], [M *], [N *],
 [O *], [P *], [Q *], [R *], [S *], [T *], [U *], [V *], [W *], [X *], [Y *], [Z *], [[*], [\ *], [] *], [^ *],
 [_ *], [‘ *], [a *], [b *], [c *], [d *], [e *], [f *], [g *], [h *], [i *], [j *], [k *], [l *], [m *], [n *], [o *],
 [p *], [q *], [r *], [s *], [t *], [u *], [v *], [w *], [x *], [y *], [z *], [{ * }, [| *], [} *], [~ *],
 [Preassociative * ; *], [Postassociative * ; *], [[*], *], [priority * end],
 [newline *], [macro newline *];

Preassociative

[* ’ *], [* ‘ *];

Preassociative

[* · *], [* ·₀ *];

Preassociative

[* + *], [* +₀ *], [* +₁ *], [* - *], [* -₀ *], [* -₁ *];

Preassociative

[* ∪ { * }], [* ∪ *], [* \ { * }];

Postassociative

[* . : *], [* . :₁ *], [* : : *], [* +₂ *], [* : : *], [* +₂ * *];

Postassociative

[* , *];

Preassociative

[* $\overset{B}{\sim}$ *], [* $\overset{D}{\sim}$ *], [* $\overset{C}{\approx}$ *], [* $\overset{P}{\approx}$ *], [* \sim *], [* = *], [* $\overset{\dagger}{\vdash}$ *], [* $\overset{t}{\doteq}$ *], [* $\overset{t^*}{\doteq}$ *], [* $\overset{r}{\doteq}$ *],
 [* \in_t *], [* \subseteq_T *], [* $\overset{T}{\equiv}$ *], [* $\overset{s}{\equiv}$ *], [* free in *], [* free in^{*} *], [* free for * in *],
 [* free for^{*} * in *], [* \in_c *], [* < *], [* <’ *], [* \leq' *], [* = *], [* \neq *], [*^{var}],
 [* #⁰ *], [* #¹ *], [* #^{*} *];

Preassociative

[¬ *];

Preassociative

[* ∧ *], [* $\overset{\sim}{\wedge}$ *], [* $\overset{\sim}{\wedge}$ *], [* ∧_c *];

Preassociative

[* ∨ *], [* || *], [* $\overset{\sim}{\vee}$ *];

Postassociative

[* $\overset{\sim}{\Rightarrow}$ *];

Postassociative

[* : *], [* spy *], [* ! *];

Preassociative

[* $\left\{ \begin{array}{c} * \\ * \end{array} \right.$];

Preassociative

[λ * . *], [Λ * . *], [Λ *], [if * then * else *], [let * = * in *], [let * \doteq * in *];

[* @ *], [* ▷ *], [* ▽ *], [* ≫ *];

Postassociative

[* ⊢ *], [* ⊣ *], [* i.e. *];

Preassociative

[∀*.*];

Postassociative

[* ⊕ *];

Postassociative

[*.*];

Preassociative

[check], [[* ≐ *]], [RootVisible(*)], [A], [R], [C], [T], [L], [{*}], [̄*], [a], [b], [c], [d], [e], [f], [g], [h], [i], [j], [k], [l], [m], [n], [o], [p], [q], [r], [s], [t], [u], [v], [w], [x], [y], [z], [*≡* | * :=*], [*≡⁰* | * :=*], [*≡¹* | * :=*], [*≡^{*}* | * :=*], [Ded(*,*)], [Ded₀(*,*)], [Ded₁(*,*,*)], [Ded₂(*,*,*)], [Ded₃(*,*,*,*)], [Ded₄(*,*,*,*)], [Ded₄^{*}(*,*,*,*)], [Ded₅(*,*,*,*)], [Ded₆(*,*,*,*)], [Ded₆^{*}(*,*,*,*)], [Ded₇(*,*)], [Ded₈(*,*)], [Ded₈^{*}(*,*)], [S], [Neg], [MP], [Gen], [Ded], [S1], [S2], [S3], [S4], [S5], [S6], [S7], [S8], [S9], [Repetition], [A1'], [A2'], [A4'], [A5'], [Prop 3.2a], [Prop 3.2b], [Prop 3.2c], [Prop 3.2d], [Prop 3.2e₁], [Prop 3.2e₂], [Prop 3.2e], [Prop 3.2f₁], [Prop 3.2f₂], [Prop 3.2f], [Prop 3.2g₁], [Prop 3.2g₂], [Prop 3.2g], [Prop 3.2h₁], [Prop 3.2h₂], [Prop 3.2h], [Block₁(*,*,*)], [Block₂(*);

Preassociative

[*_{*}], [*/indexintro(*,*,*,*)], [*/intro(*,*,*,*)], [*/bothintro(*,*,*,*,*)], [*/nameintro(*,*,*,*,*)], [*'], [*[*]], [*[*→*]], [*[*⇒*]], [*0], [*1], [0b], [*-color(*)], [*-color^{*}(*)], [*^H], [*^T], [*^U], [*^h], [*^t], [*^s], [*^c], [*^d], [*^a], [*^C], [*^M], [*^B], [*^F], [*ⁱ], [*^d], [*^R], [*⁰], [*¹], [*²], [*³], [*⁴], [*⁵], [*⁶], [*⁷], [*⁸], [*⁹], [*^E], [*^V], [*^C], [*^{C*}], [*hide];

Preassociative

[“*”], [], [(*)^t], [string(*) + *], [string(*) ++ *], [*], [*], [*], [*], [“#”], [“\$”], [%*], [&*], [*], [(*)], [()*], [**], [+*], [,*], [-*], [.*], [/*], [0*], [1*], [2*], [3*], [4*], [5*], [6*], [7*], [8*], [9*], [:*], [;*], [<*], [=*], [>*], [?*], [@*], [A*], [B*], [C*], [D*], [E*], [F*], [G*], [H*], [I*], [J*], [K*], [L*], [M*], [N*], [O*], [P*], [Q*], [R*], [S*], [T*], [U*], [V*], [W*], [X*], [Y*], [Z*], [(*)], [()*], [()*], [^*], [_*], [‘*], [a*], [b*], [c*], [d*], [e*], [f*], [g*], [h*], [i*], [j*], [k*], [l*], [m*], [n*], [o*], [p*], [q*], [r*], [s*], [t*], [u*], [v*], [w*], [x*], [y*], [z*], [{*}], [()*], [()*], [~*],

[Preassociative*.*], [Postassociative*.*], [(*)], [*], [priority * end],

[newline *], [macro newline *], [MacroIndent(*)];

Preassociative

[*’*], [*’*], [*’];

Preassociative

[*·*], [*·0*];

Preassociative

[* + *], [* +₀ *], [* +₁ *], [* - *], [* -₀ *], [* -₁ *];

Preassociative

Postassociative
 $[*, *];$
Preassociative
 $[* \stackrel{B}{\approx} *], [* \stackrel{D}{\approx} *], [* \stackrel{C}{\approx} *], [* \stackrel{P}{\approx} *], [* \approx *], [* = *], [* \rightarrow *], [* \stackrel{t}{=} *], [* \stackrel{t^*}{=} *], [* \stackrel{r}{=} *],$
 $[* \in_t *], [* \subseteq_T *], [* \stackrel{T}{=} *], [* \stackrel{s}{=} *], [* \text{ free in } *], [* \text{ free in }^* *], [* \text{ free for } * \text{ in } *],$
 $[* \text{ free for }^* * \text{ in } *], [* \in_c *], [* < *], [* <' *], [* \leq' *], [* = *], [* \neq *], [*^{\text{var}}],$
 $[* \#^0 *], [* \#^1 *], [* \#^* *];$
Preassociative
 $[\neg *];$
Preassociative
 $[* \wedge *], [* \ddot{\wedge} *], [* \tilde{\wedge} *], [* \wedge_c *];$
Preassociative
 $[* \vee *], [* \parallel *], [* \ddot{\vee} *], [\exists *: *], [\forall *: *], [\forall_{\text{obj}} *: *];$
Postassociative
 $[* \dot{\Rightarrow} *], [* \Rightarrow *], [* \Leftrightarrow *];$
Postassociative
 $[* : *], [* \text{ spy } *], [* ! *];$
Preassociative
 $[* \left\{ \begin{array}{l} * \\ * \end{array} \right.];$
Preassociative
 $[\lambda * . *], [\Lambda * . *], [\Lambda *], [\text{if } * \text{ then } * \text{ else } *], [\text{let } * = * \text{ in } *], [\text{let } * \dot{=} * \text{ in } *],$
 $[* \# *];$
Preassociative
 $[*^I], [* \triangleright], [*^V], [*^+], [*^-], [*^*];$
Preassociative
 $[* @ *], [* \triangleright *], [* \blacktriangleright *], [* \gg *], [* \triangleleft *];$
Postassociative
 $[* \vdash *], [* \vDash *], [* \text{ i.e. } *];$
Preassociative
 $[\forall *: *], [\Pi *: *];$
Postassociative
 $[* \oplus *];$
Postassociative
 $[*, *];$
Preassociative
 $[* \text{ proves } *];$
Preassociative
 $[* \text{ proof of } *: *], [\text{Line } *: * \gg *: *], [\text{Last line } * \gg * \square],$
 $[\text{Line } *: \text{ Premise } \gg *: *], [\text{Line } *: \text{ Side-condition } \gg *: *], [\text{Arbitrary } \gg *: *],$
 $[\text{Local } \gg * = *: *], [\text{Begin } *: * : \text{End}; *], [\text{Last block line } * \gg *: *],$
 $[\text{Arbitrary } \gg *: *];$

[*, *], [* [*]*];

Preassociative

[*&*], [→];

Preassociative

[**], [* linebreak[4] *], [**];]