

LDL_f formula $\varphi ::= \varphi_1 \mid \varphi_1 \text{ ‘->’ } \varphi$

$\varphi_1 ::= \varphi_2 \mid \varphi_1 \text{ ‘|’ } \varphi_2$

$\varphi_2 ::= \varphi_3 \mid \varphi_2 \text{ ‘\&’ } \varphi_3$

$\varphi_3 ::= \text{‘last’} \mid \alpha \mid \text{‘!’} \varphi_3 \mid \text{‘<’} \rho \text{ ‘>’ } \varphi_3 \mid \text{‘[’} \rho \text{ ‘]’ } \varphi_3 \mid \text{‘(’} \varphi \text{ ‘)’}$

Regular path $\rho ::= \rho_1 \mid \rho \text{ ‘+’ } \rho_1$

$\rho_1 ::= \rho_2 \mid \rho_1 \text{ ‘;’ } \rho_2$

$\rho_2 ::= \rho_3 \mid \text{‘\{’} \varphi \text{ ‘\}’} \text{ ‘?’} \mid \rho_3 \text{ ‘*’}$

$\rho_3 ::= \text{‘\{’} \psi \text{ ‘\}’} \mid \text{‘!’} \rho_3 \mid \text{‘(’} \rho \text{ ‘)’}$

Proposition $\psi ::= \psi_1 \mid \psi_1 \text{ ‘->’ } \psi$

$\psi_1 ::= \psi_2 \mid \psi_1 \text{ ‘|’ } \psi_2$

$\psi_2 ::= \psi_3 \mid \psi_2 \text{ ‘\&’ } \psi_3$

$\psi_3 ::= \alpha \mid \text{‘!’} \psi_3 \mid \text{‘(’} \psi \text{ ‘)’}$

Atomic proposition $\alpha ::= \text{‘true’} \mid \text{‘false’} \mid \text{symbol}$