Context-Free Grammar for a MLTL wff in Negation normal-form (Nnf).

Here, ‘Eventually’, ‘Always’, ‘Until’, and ‘Release’ are represented by the letters ‘F’, ‘G’, ‘U’, and ‘R’.

Alphabet = { ‘0’, ‘1’, …, ‘9’, ‘p’, ‘(‘, ‘)’, ‘[’, ‘]’, ‘,’ ,

‘T’, ‘!’,

‘~’, ‘F’, ‘G’,

‘v’, ‘&’, ‘=’, ‘>’, ‘U’, ‘R’ }

Digit -> ‘0’ | ‘1’ | … |’9’

Num -> Digit Num | Digit

Interval -> ‘[’ Num ‘,’ Num ‘]’

Prop\_var -> ‘p’ Num

Prop\_cons -> ‘T’ | ‘!’

Binary\_Prop\_conn -> ‘v’ | ‘&’ | ‘=’ | ‘>’

Assoc\_Prop\_conn -> ‘v’ | ‘&’ | ‘=’

Nnf\_Array\_entry -> Nnf ‘,’ Nnf\_Array\_entry | Nnf

Unary\_Temp\_conn -> ‘F’ | ‘G’

Binary\_Temp\_conn -> ‘U’ | ‘R’

Nnf -> ?( ‘~’) Prop\_var | Prop\_cons

| Unary\_Temp\_conn Interval Nnf

| '(' Assoc\_Prop\_conn ‘[‘ Nnf\_Array\_entry ‘]’ ')'

| ‘(‘ Nnf Binary\_Prop\_conn Nnf ‘)’

| ‘(‘ Nnf Binary\_Temp\_conn Interval Nnf ‘)’