**LTLInputOutput**

*This routine reads in a text file, parses through it, and for each section it reads, calls the method to generate the LTL, and writes it to the output file.*

open the file

until reading the end of the file

read in 7 lines to get the 6 lines of input per LTL Template

set the scope, pattern, and 4 CP variables

discard the 7th line

call the method to generate the LTL output passing the 6 variables

write LTL formula output to the output file

*This routine checks to see if the given output file exists and creates it if it doesn’t.*

read in the argument for the output file

if the file does not exist

create file

*This routine writes the LTL formula to the output file.*

in the existing output file

write the 6 lines of input and one blank line

write the generated LTL formula

**LTLTemplateFactory**

*This routine instantiates the proper template class and updates the object’s LTL Template if needed*

given a specific name, instantiate the correct LTL Template class.

if this object’s LTL Template depends on another template

instantiate the other template

replace the necessary part of the first object’s LTL template with the LTL template of the second object.

return correct LTL Template object

**CPGenerator**

*This routine generates the LTL Formula for a CP given the CP name, number of propositions, and the letter of the propositions*

choose the correct LTL formula from CP name

from 1 to the number of propositions

generate the LTL formula

replace the letter in the CP with the latter passed in

add placeholders for & operators to work with

return the LTL formula

**Operator**

Given a key value list

The first key will be the left side of the & symbol.

The second key will be the right side of the & symbol.

Replace appropriate placeholder in left side value with right side value.

Return Final sting.

Place holders will be +,\*, . Maybe.

**LTL Generator**

Get template from factory.

For each CP

Call CP generator and get CP (including the special parallel inverse).

Store CP’s in key value list. (not special parallel inverse)

For each & in template

Get the generated formula from the Operator

Replace in Template.

For each CP letter left in template

replace CP with generated value

For all special hard coded place holders

replace with blank

Return string

**Template Classes**

These routines return associated LTL template string. One string per class.