

TTM Input-Output Specification

Input: A set of PLTL-formulas one per line (which is logically equivalent to their conjunction).

The syntax of each formula is

```
Atom := AlphaNumeric String
Formula := Atom
        | TRUE
        | FALSE
        | - formula           (negation)
        | formula & formula   (conjunction)
        | formula | formula   (disjunction)
        | formula -> formula   (implication)
        | formula <-> formula  (double impl.)
        | X formula           (next)
        | F formula           (eventually)
        | G formula           (always)
        | formula U formula    (until)
```

Output: For any input set S of formulas, the answer is one of the following

> Unsatisfiable, if S doesn't have a model

> The following description of a ultimately periodic model:

Cyclic branch:

0:S0

1:S1

.

.

.

n:Sn

loop

0:T0

.

.

.

k:Tk

where each Si and Ti is a set of literals saying what is necessarily true and false at each state.

It describes the model that starts with the sequence of states S0,S1,...,Sn and continues repeating the sequence T0,...,Tk.

> The following description of a ultimately periodic model with an empty state as loop

Open branch:

0:S0

1:S1

.

.

.

n:Sn

which is equivalent to

Cyclic branch:

0:S0

1:S1

.

.

.

n:Sn

loop

0: Empty set of literals