

Objective:

basic operators (R-arithmetics, comparison) // seems like need to add “,” as we need to do concatenation

iterative operators (priority “()”, concatenation “{}”)

unary operators (“-”) // need to find in paper

These can be found in that LPSAT paper's appendix.

Also with constants:

constants in definition: decide upper limit (maximum value) for variables

constants in expression: combined with basic operators // need to find in paper

Algorithm (only for wire, assign sentences)

for linear constrains, we need variables and constants

variables: already extracted to @var

operators: build word list like qw ( + - \* % ....)

1. find one basic operator, check immediate former element for “)”””}” and later one for “(”””{”, if clear then do LP generation and replace this unit expression with temp variable \_tmp00, but remember to keep “()”””{}” if there is more than 1 // it seems there'll be only “,” in “{}”

2. go on iteration, repeat step 1, until no iterative operators // remember to replace \_tmp00 with desired variable on left side of “=”

translate constants

So, we have functions to realize below:

First, iteration steps. Basically

While (find basic operators)

```
{
    if (judge unit == FALSE) {next;}
    Write linear constrains to output file.
    Find immediate (){}, remove them, store into new element $new;
    replace substr $items[i-1,i,i+1] with $new; // Important function need be down independently
}
```

OK, first than first, we need to take “,” out as basic operator.

While (\$items[i] /,/) // we can use \$\_ = \$items[i]

```
{
    @tmp = split /,/;
    my @new;
    $new[0..2] = $tmp[0..1];
    $new[1] = “,”;
    replace $items[i] with @new;
}
```

Second(or we can do it firstly?), translate constants and set variable limits from definition

While (\$items[i], /[|]/) {

remove [], inner part 28:0 => var < 2^29

}

2b'10 => 2