

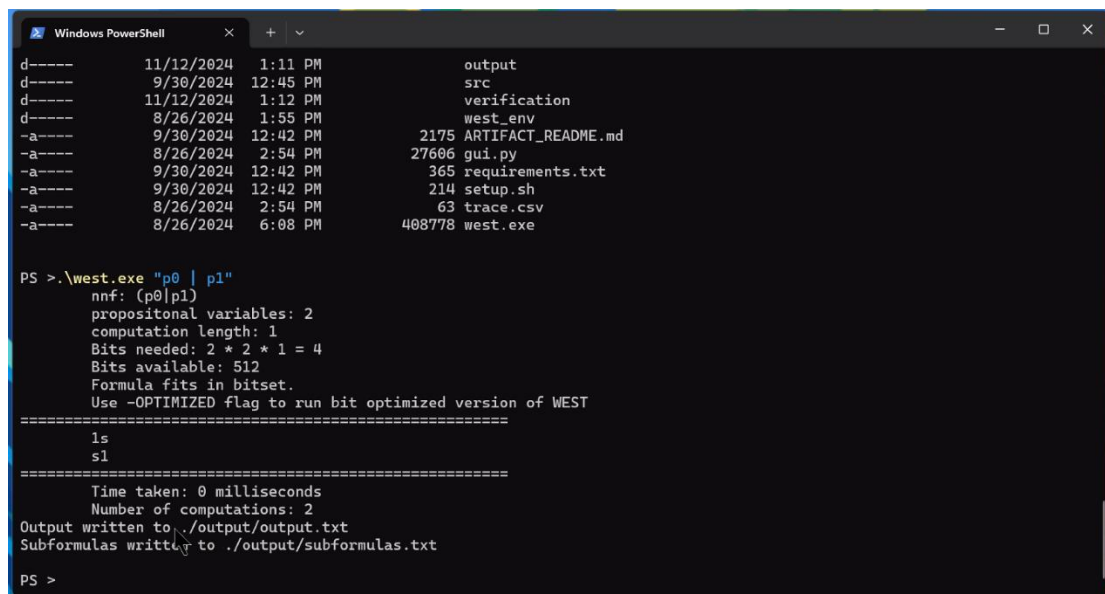
During the Spring Festival, I had an online meeting with the current main person in charge of WEST, and here's what I learned:

1、 About the WEST Team:

- a) Right now, there's only one person left on the team, and WEST is no longer their main focus.
- b) The only ongoing work for WEST is the mathematical verification of the program's correctness.

2、 About Input Length Limitation:

- a) When using the command line (cmd), there's no strict length limit, but you need to be careful.
- b) If the formula is too complex, WEST might struggle because it tries to explore all possible paths, which can be very resource-intensive.
- c) Honestly, if the formula is too long or complicated, WEST might not be the best tool for the job—there are better solutions out there.
- d) This makes me wonder: What's our actual goal here? Why are we choosing WEST over other tools?



```
Windows PowerShell
d----- 11/12/2024 1:11 PM      output
d----- 9/30/2024 12:45 PM      src
d----- 11/12/2024 1:12 PM      verification
d----- 8/26/2024 1:55 PM      west_env
-a----- 9/30/2024 12:42 PM      2175 ARTIFACT_README.md
-a----- 8/26/2024 2:54 PM      27606 gui.py
-a----- 9/30/2024 12:42 PM      365 requirements.txt
-a----- 9/30/2024 12:42 PM      214 setup.sh
-a----- 8/26/2024 2:54 PM      63 trace.csv
-a----- 8/26/2024 6:08 PM      408778 west.exe

PS > .\west.exe "p0 | p1"
nnf: (p0|p1)
propositional variables: 2
computation length: 1
Bits needed: 2 * 2 * 1 = 4
Bits available: 512
Formula fits in bitset.
Use -OPTIMIZED flag to run bit optimized version of WEST
=====
1s
s1
=====
Time taken: 0 milliseconds
Number of computations: 2
Output written to ./output/output.txt
Subformulas written to ./output/subformulas.txt
PS >
```

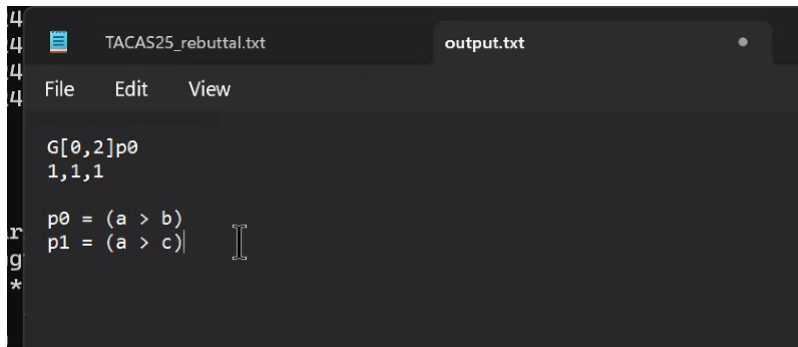
3、 About Input Range Constraints:

- a) WEST uses MLTL, which is a bounded temporal logic. This means it can't handle unbounded ranges—it's just not built for that.

4、 About Input Restrictions:

- a) WEST doesn't use the actual variable names you input. Instead, it uses a "p + number" format (like p0, p1, etc.). The numbers are crucial because WEST needs them to process the formula.
- b) That's why the current approach in my converter—mapping variables to these numbered placeholders—is the best way to handle this.
- c) Also, WEST assumes all variables are Boolean, so it doesn't allow direct comparisons (like "a > b"). You have to turn the whole comparison into a

single variable. (I've already fixed this bug in the converter, but I haven't updated it in MU-FRET yet.)



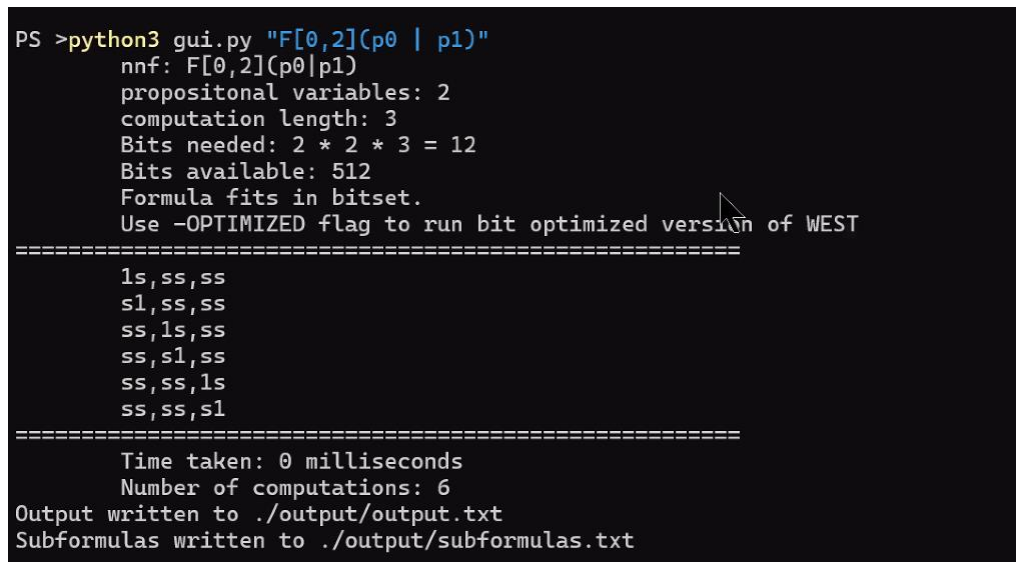
```
TACAS25_rebuttal.txt  output.txt
File Edit View

G[0,2]p0
1,1,1

p0 = (a > b)
p1 = (a > c)
```

5、 About WEST Tool Integration:

- a) I've written a separate document detailing the reasoning and process for integrating WEST.



```
PS >python3 gui.py "F[0,2](p0 | p1)"
nnf: F[0,2](p0|p1)
propositional variables: 2
computation length: 3
Bits needed: 2 * 2 * 3 = 12
Bits available: 512
Formula fits in bitset.
Use -OPTIMIZED flag to run bit optimized version of WEST
=====
ls,ss,ss
sl,ss,ss
ss,ls,ss
ss,sl,ss
ss,ss,ls
ss,ss,sl
=====
Time taken: 0 milliseconds
Number of computations: 6
Output written to ./output/output.txt
Subformulas written to ./output/subformulas.txt
```

6、 Other Tools to Consider:

- a) **R2U2**: Check out their website at <https://r2u2.temporallogic.org/about-r2u2/>.
- b) **Verimon**: More info here: <https://www21.in.tum.de/~traytel/papers/ictac22-verimon/verimon.pdf>.
- c) **Vydra**: You can read about it in this paper: https://link.springer.com/chapter/10.1007/978-3-030-59152-6_13.

```
Windows PowerShell
Mode                LastWriteTime         Length Name
-----                -
d-----          9/30/2024   12:42 PM                benchmarking
d-----         11/12/2024    1:11 PM                output
d-----          9/30/2024   12:45 PM                src
d-----         11/12/2024    1:12 PM            verification
d-----          8/26/2024    1:55 PM            west_env
-a-----          9/30/2024   12:42 PM           2175 ARTIFACT_README.md
-a-----          8/26/2024    2:54 PM          27606 gui.py
-a-----          9/30/2024   12:42 PM           365 requirements.txt
-a-----          9/30/2024   12:42 PM           214 setup.sh
-a-----          8/26/2024    2:54 PM            63 trace.csv
-a-----          8/26/2024    6:08 PM         408778 west.exe

PS >cd output
PS >ls

Directory: C:\Users\Jonathanandzili\WEST\west\WEST\output

Mode                LastWriteTime         Length Name
-----                -
-a-----         1/29/2025    8:04 PM            75 output.txt
-a-----         1/29/2025    8:04 PM           140 subformulas.txt

PS >
```