LP/CP Programming Contest 2022

Chairs: Mario Alviano and Vitaly Lagoon

Night event

from 2 August at 20:00
to 3 August at 08:00

An event hosted by ICLP since 2015 (and since 1994 as Prolog Competition)

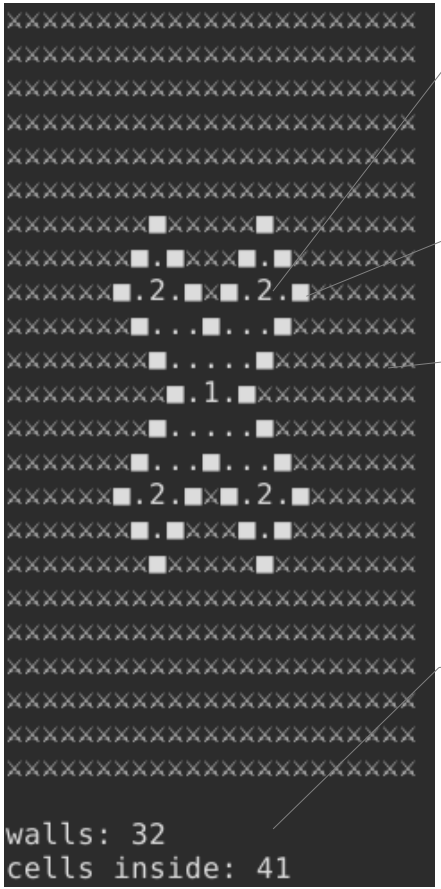
Open to all FLoC attenders (especially to the sleepless!)

Speaker: Stefano Sferrazza

Format

- 5 problems, 10 instances each, 1 point for each solved instance
  - 1 planning
  - 2 puzzles
  - 2 optimization (points to best solutions)
- Timeout at 10 minutes
- Memout at 6 GiB

Problem 1. Fortress



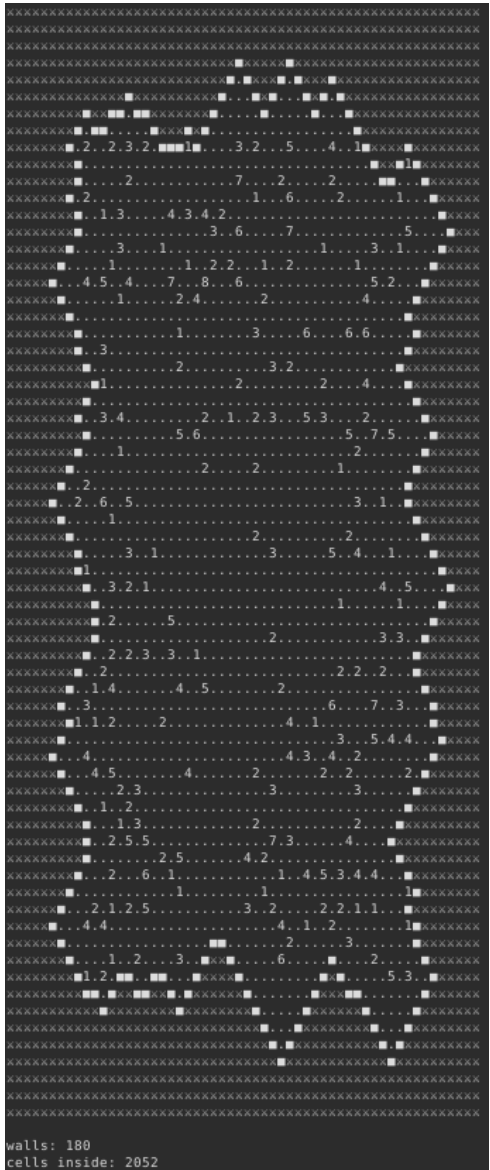
Point-of-interests requiring some free space

Decide where to build walls

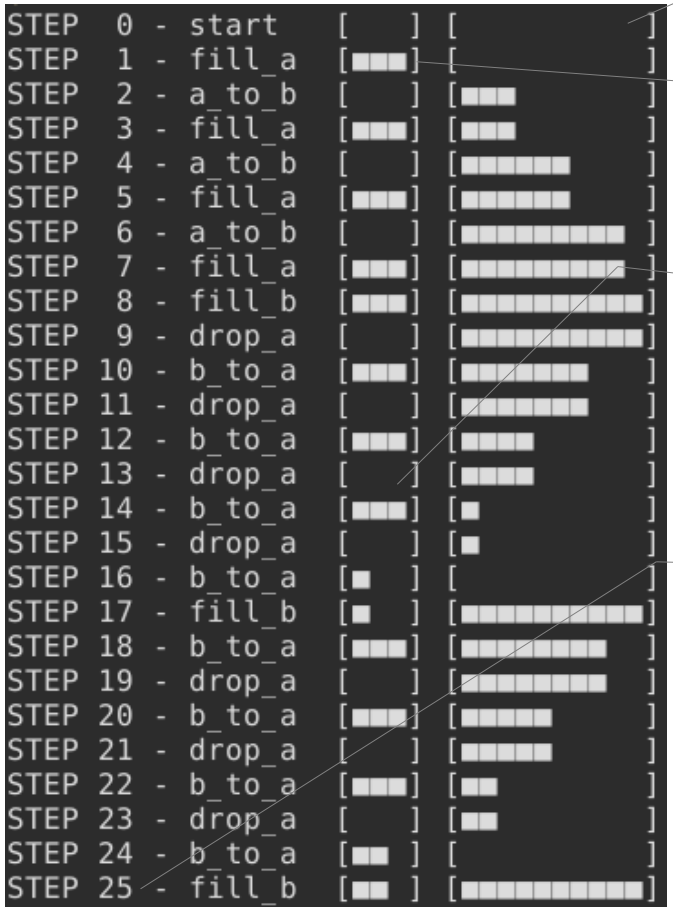
All cells outside the walls are under attack!

Multi-objective optimization

Minimize walls, and break ties by minimizing cells inside walls



Problem 2. Beer jugs (Drink Hard 3)

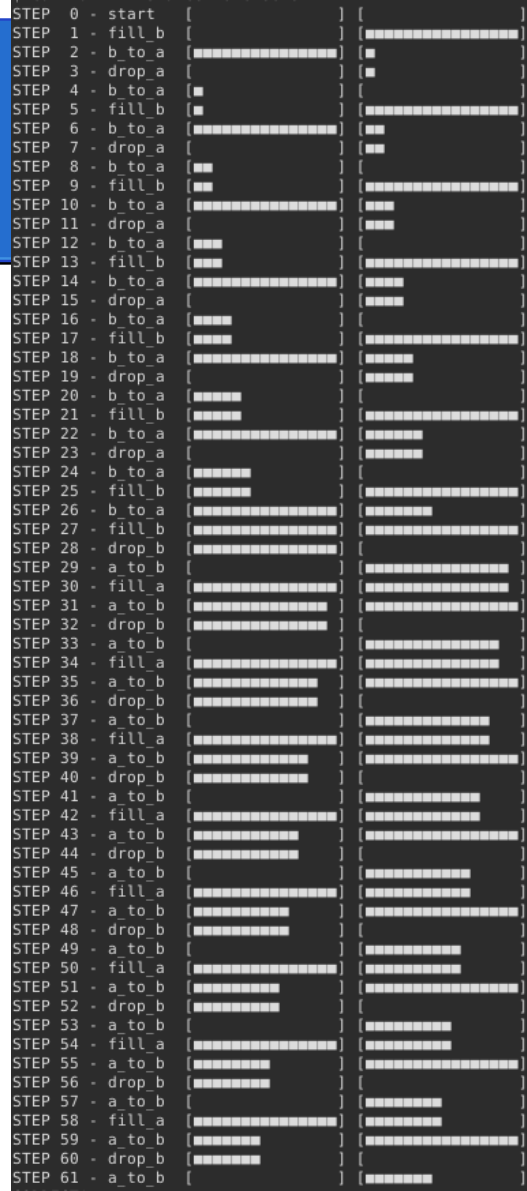


Start with two empty jugs

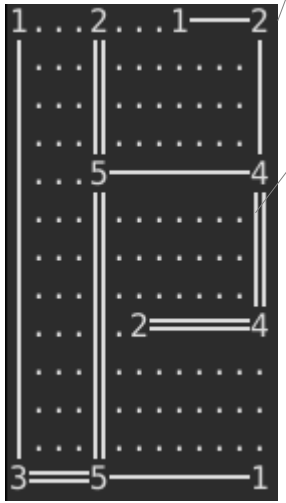
Fill them completely

Drop (drink!) them completely

Find a non-repeating sequence, the longer the better (to make a funny movie)



Problem 3. Hashi

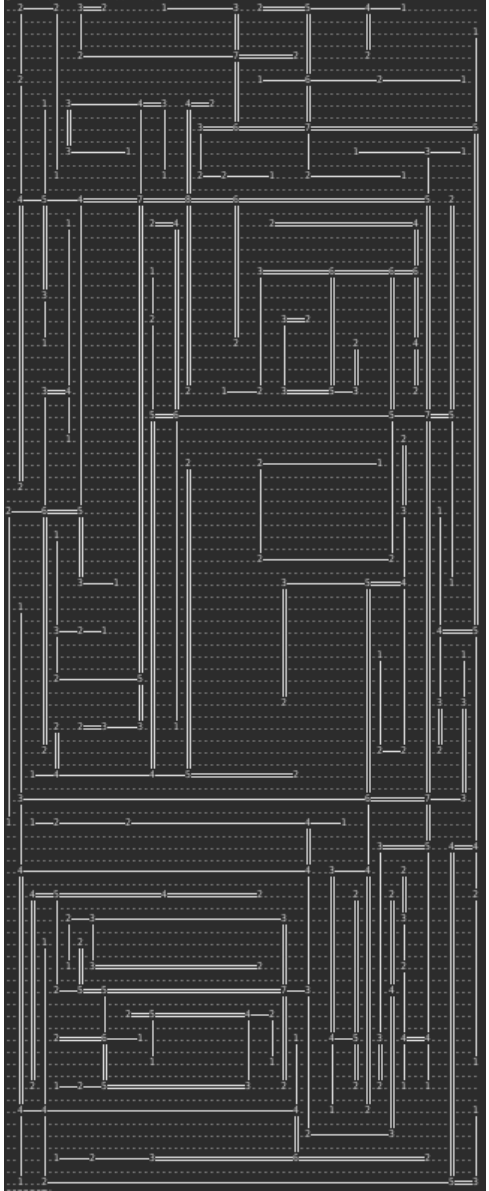


Islands requiring a number of bridges

Determine where to place bridges

No crossing, no overlapping, all islands must be connected

Play it online at https://www.puzzle-bridges.com/



Problem 4. Robeep

Program a robot

To turn on some light bulbs

A subroutine may help

```
 0.       v0
 0         0
 0         0
 0. 0   0  0.

MAIN: [subroutine]  subroutine   subroutine   subroutine   subroutine   subroutine
 SUB:  jump   forward   forward   forward   beep   left   right   right

 0.       v0
 0         0
 0         0
 0. 0   0  0.

MAIN: [subroutine]  subroutine   subroutine   subroutine   subroutine   subroutine   subroutine   jump
 SUB: [jump]  forward   forward   forward   beep   left   right   right

 0.       v0
 0         0
 0         0
 0. 0   0  0.

MAIN: [subroutine]  subroutine   subroutine   subroutine   subroutine   subroutine   subroutine   jump
 SUB:  jump  [forward]  forward   forward   beep   left   right   right

 0.        0
 0        v0
 0         0
 0. 0   0  0.
```

Lightbot : Code Hour

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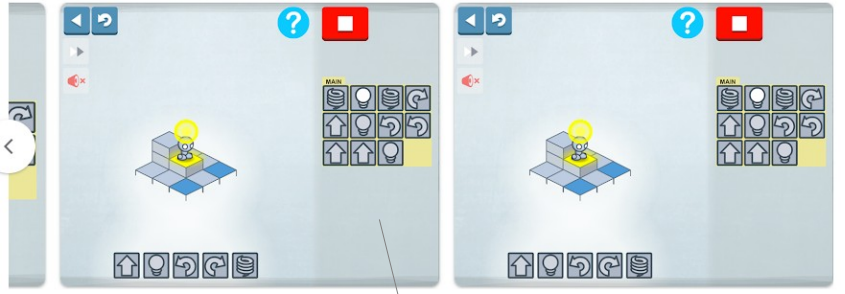
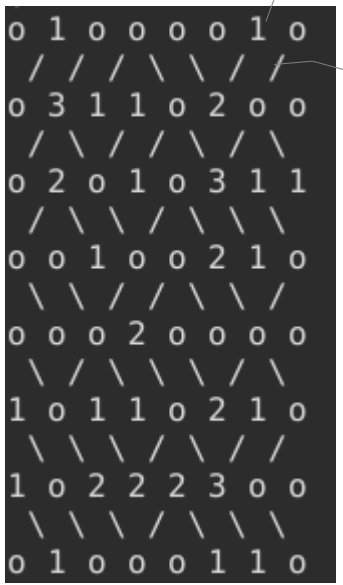


Play it online!

Problem 5. Slant

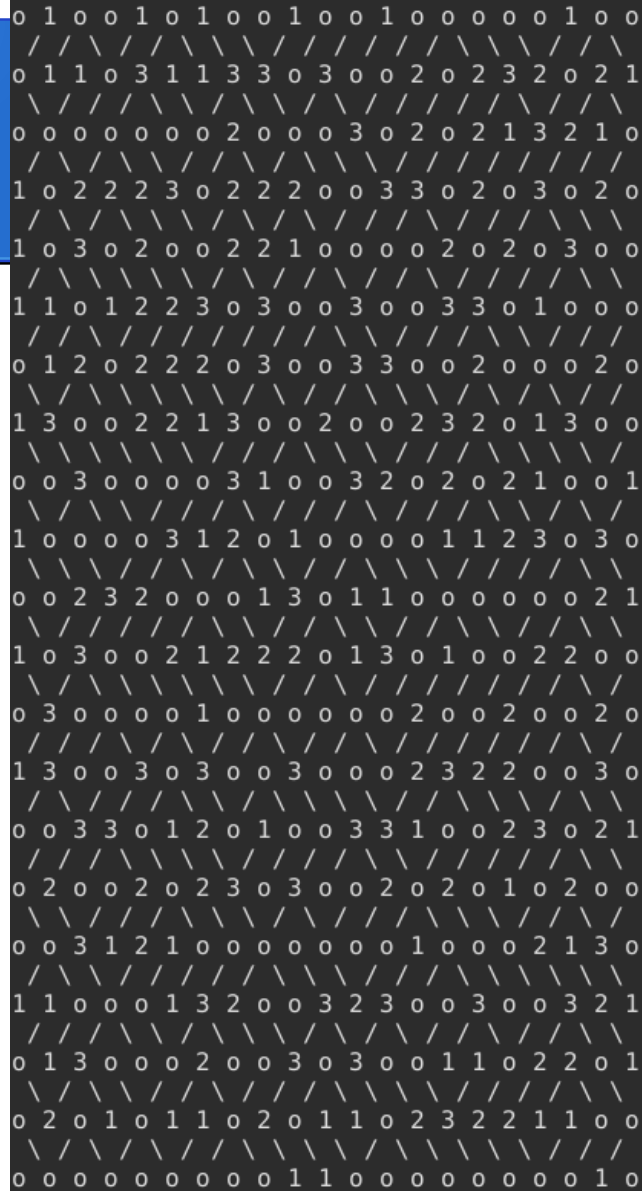


Number of expected bridges given

Decide between two possible bridges (either / or \)

Avoid cycles!

Play it online at https://www.puzzle-slant.com/



7 teams, 18 players

- **Bule:** Jean Christoph Jung, Valentin Mayer-Eichberger, Abdallah Saffidine
- **Ch'ti CP:** Thibault Falque, Jean-Marie Lagniez, Romain Wallon
- **Fodor:** Paul Fodor
- **PicatBBZ:** Afredo Beaumont, Peter Bernschneider, Neng-Fa Zhou
- **The Two Marateers:** Marco Mochi, Matteo Cardellini
- **Triple Negation:** Alice Tarzariol, Wolfgang Faber, Martin Gebser
- **tuw:** Andre Schidler, Katalin Fazekas, Rafael Kiesel

Countries
Australia (1)
Austria (6)
Basque Country (1)
France (3)
Germany (3)
Italy (2)
USA (2)

Stats
Time of first submission: 1h44 (dinner?)
Last scored point: 10h37
Submitted solutions: 26
Fastest cumulative runtime: ~80.2 seconds

Systems
clingo (3 teams, 110p)
EvalMaxSAT-Weighted (1 team)
picat (1 team, 30p)
PyCSP3 (1 team)
python-sat (1 team, 30p)
z3 (1 team, 10p)

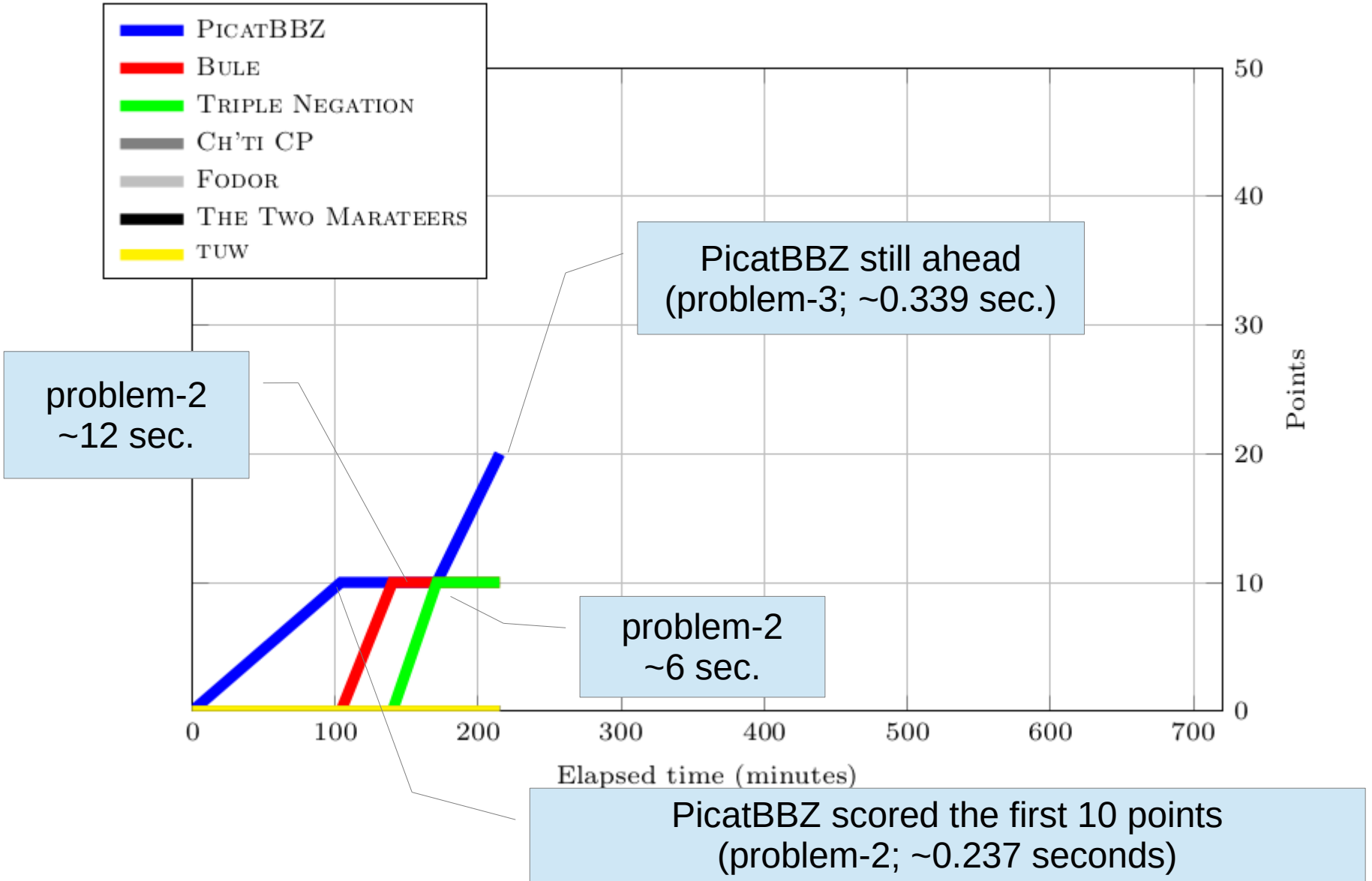
We made mistakes!

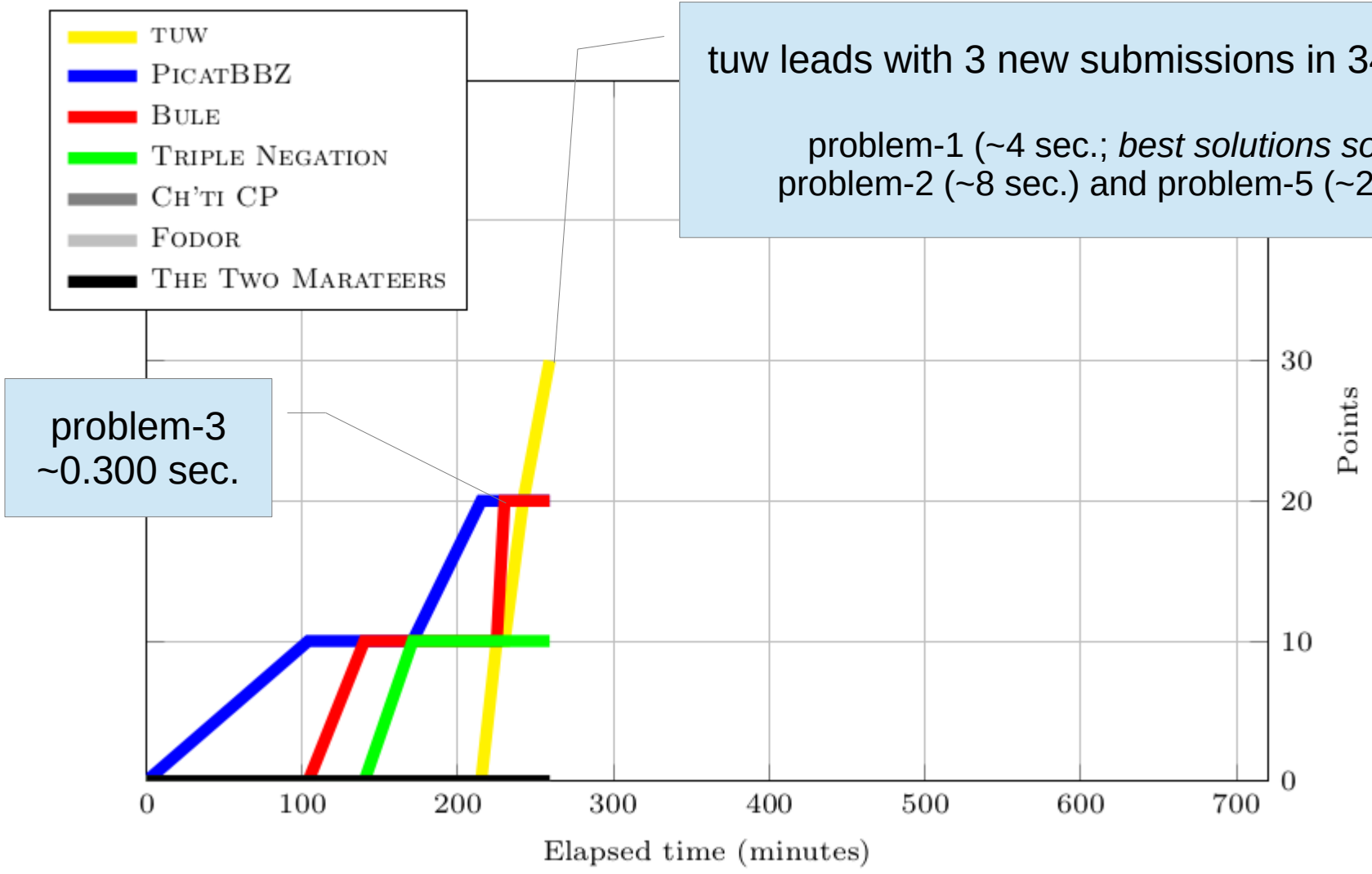
- **Bule** wasted time because of a bug in our checker (problem-1)
- **PicatBBZ** received some false-positive feedback (problem-5)
- **Triple Negation** wasted time because of some false-negative (problem-1; they had to solve it twice before Mario realized he was comparing their solutions with those of problem-2)
- **tuw** was late notified on better solutions from competitors (problem-1)

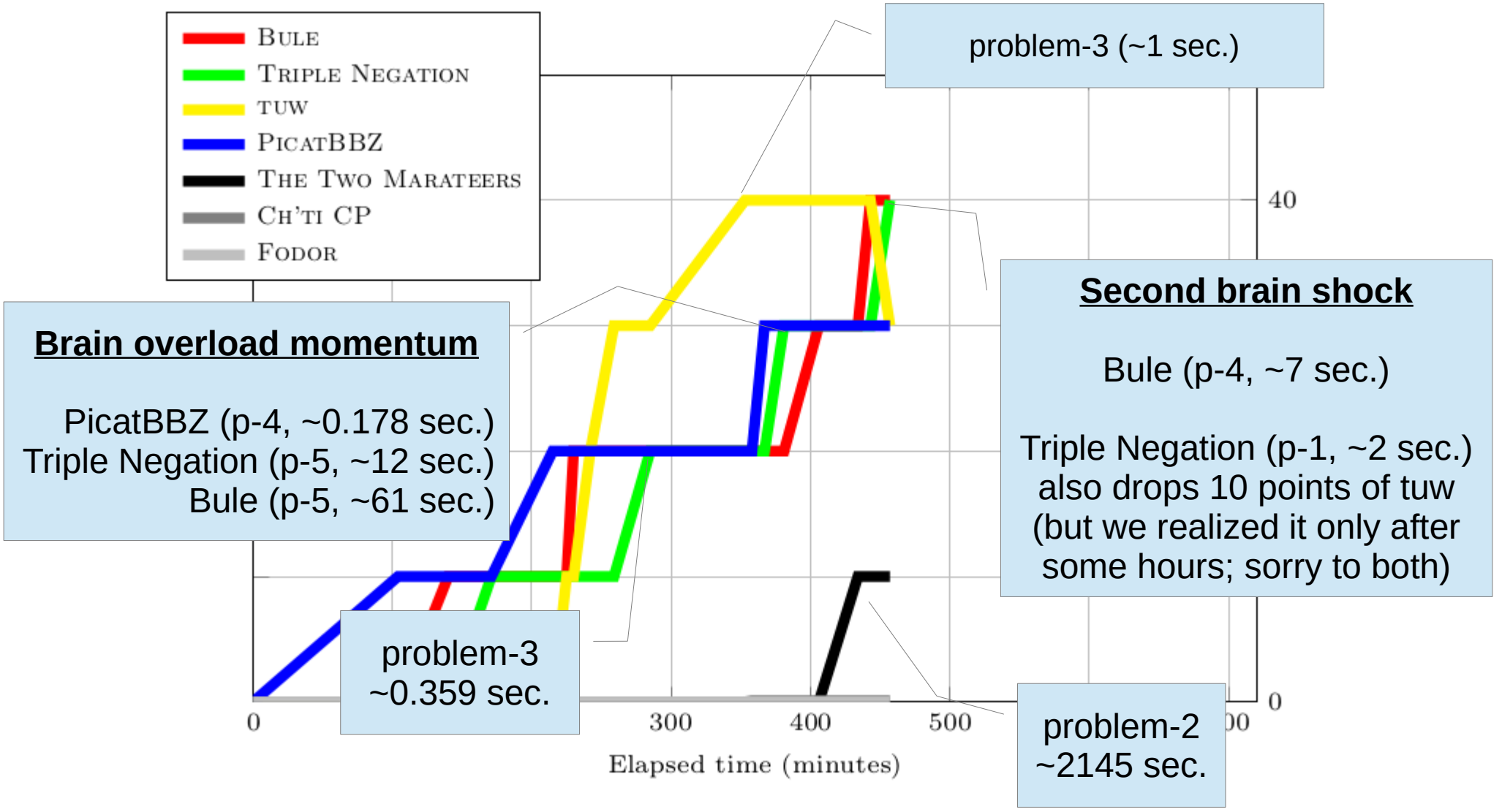
12 hours of continuous feedback didn't stress us at all!
- Mario, 38 years old

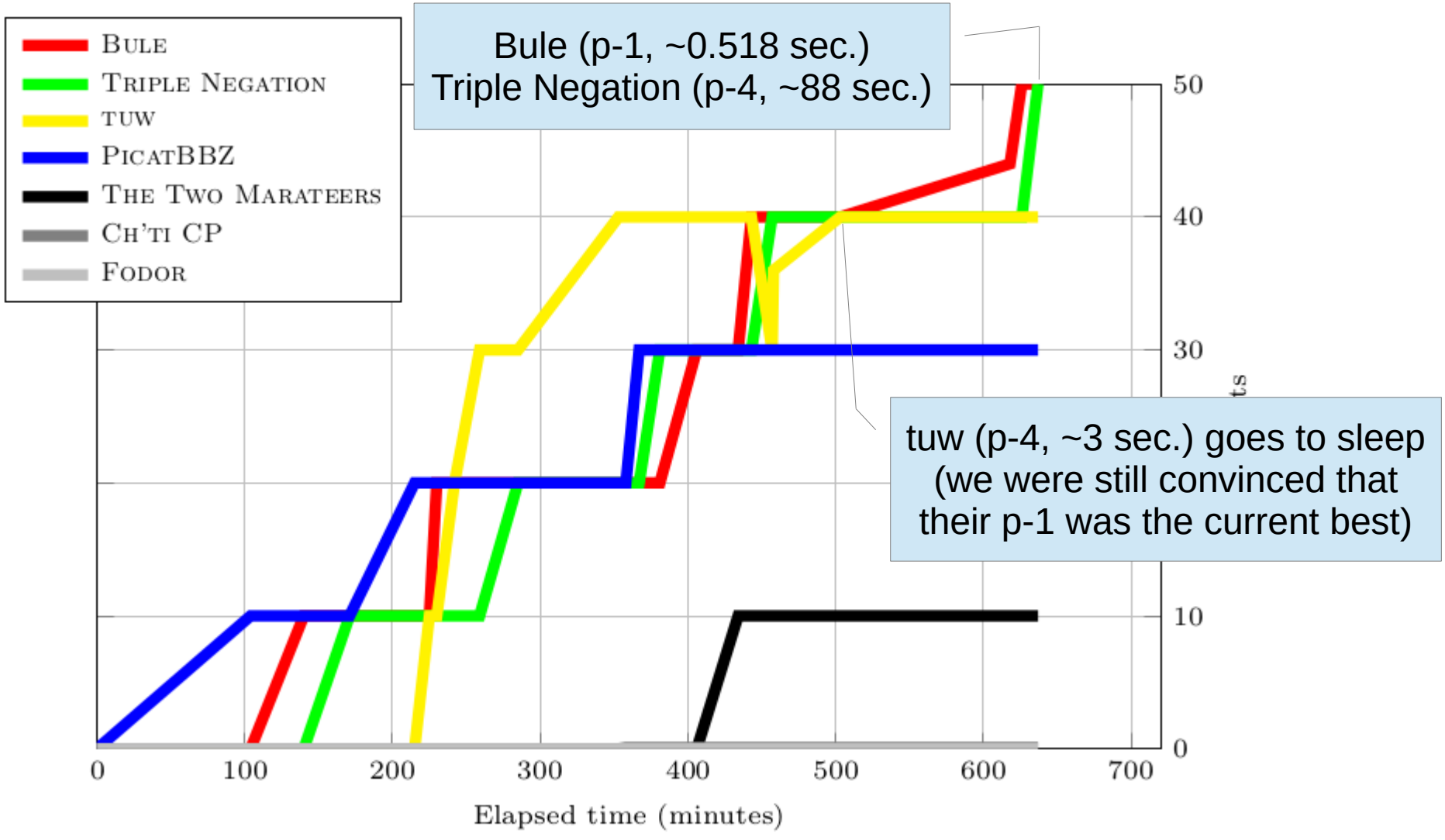
We did our best to provide a prompt feedback.

It worked well for the first 7 hours…
less for the last 5 hours :(


PicatBBZ
Bule
Triple Negation
Ch'ti CP
Fodor
The Two Marateers
tuw
50
40
30
20
10
0
Points
0
100
200
300
400
500
600
700
Elapsed time (minutes)
PicatBBZ still ahead
(problem-3; ~0.339 sec.)
problem-2
~12 sec.
problem-2
~6 sec.
PicatBBZ scored the first 10 points
(problem-2; ~0.237 seconds)


tuw leads with 3 new submissions in 34 minutes!
problem-1 (~4 sec.; *best solutions so far*),
problem-2 (~8 sec.) and problem-5 (~20 sec.)
problem-3
~0.300 sec.
TUW
PicatBBZ
Bule
Triple Negation
Ch'ti CP
Fodor
The Two Marateers
0
100
200
300
400
500
600
700
Elapsed time (minutes)
0
10
20
30
Points


Bule
Triple Negation
tuw
PicatBBZ
The Two Marateers
Ch'ti CP
Fodor
problem-3 (~1 sec.)
Brain overload momentum
PicatBBZ (p-4, ~0.178 sec.)
Triple Negation (p-5, ~12 sec.)
Bule (p-5, ~61 sec.)
Second brain shock
Bule (p-4, ~7 sec.)
Triple Negation (p-1, ~2 sec.)
also drops 10 points of tuw
(but we realized it only after
some hours; sorry to both)
problem-3
~0.359 sec.
problem-2
~2145 sec.
40
0
0
300
400
500
Elapsed time (minutes)


Bule
Triple Negation
tuw
PicatBBZ
The Two Marateers
Ch'ti CP
Fodor
Bule (p-1, ~0.518 sec.)
Triple Negation (p-4, ~88 sec.)
tuw (p-4, ~3 sec.) goes to sleep
(we were still convinced that
their p-1 was the current best)
0
10
30
40
50
0
100
200
300
400
500
600
700
Elapsed time (minutes)

Team	Points	Last score	Cumulative runtime
Bule (clingo)	50	10h26	~80 sec.
Triple Negation (clingo)	50	10h37	~109 sec.
tuw (EvalMaxSAT-Weighted/python-sat/z3)	40 (non-best solutions for p-1)	8h23	~32 sec. (plus ~4 sec. for p-1)
PicatBBZ (picat)	30	6h07	~0.8 sec.
The Two Marateers (clingo)	10	7h14	~2146 sec.
Ch'ti CP (PyCSP3)	0 (non-best solutions for p-1)	- (5h58)	- (~4818 sec.)
Fodor	0	-	-

First place and FLoC Olympic Games medals to team Bule

Jean Christoph Jung, Universität Hildesheim, Germany
Valentin Mayer-Eichberger, Universität Potsdam, Germany
Abdallah Saffidine, University of New South Wales, Sydney, Australia

Questions

Ask directly to the Contest Chairs

Slack Workspace: scan the QR code

Email: lpcp2022@easychair.org