

# TCG 2018 HW. 1 Result

Yunghsien Chung

November 7, 2018

# Grading Policy: Overall

- The homework is composed of 3 parts. Suppose you get  $S_i$  points in part  $i$  and receive  $P$  penalties throughout the homework, your raw score  $S_0$  is defined as

$$S_0 := \max\{S_1 + S_2 + S_3 - P, 0\}.$$

- Suppose you submit your homework  $D$  days late, your score  $S$  is given by

$$S := LS_0,$$

where  $L := \llbracket D \leq 7 \rrbracket (0.9^{\lceil D \rceil})$  denotes the lateness coefficient.

# Grading Policy: Part I

- Suppose your Sokoban solver solves a puzzle file  $F$  correctly within 1 minute. Let
  - $\nu_i$  denote the optimal number of moves of a solution to puzzle  $i$ , and
  - $n_i$  denote the number of moves of your solution to puzzle  $i$ .

Then the basic score is defined as

$$\sigma_1(F) := 1 + \frac{1}{1000} \sum_{i=1}^{10} \lfloor \frac{100\nu_i}{n_i} \rfloor$$

- Suppose it takes  $t_1$  and  $t_2$  seconds for your solver to solve `large.in` and `large2.in` respectively. Then the time bonus is given by

$$\tau_1 := \llbracket t_1 \leq 1 \rrbracket + \llbracket t_2 \leq 1 \rrbracket.$$

- You get

$$S_1 := \min\left\{\sum_F \sigma_1(F) + \tau_1, 8\right\}$$

points in this part.

# Grading Policy: Part II

- You get

$$S_2 := 2\llbracket\text{your puzzle passes verifier}\rrbracket \\ + \llbracket\text{your puzzle is considered complex}\rrbracket$$

points in this part.

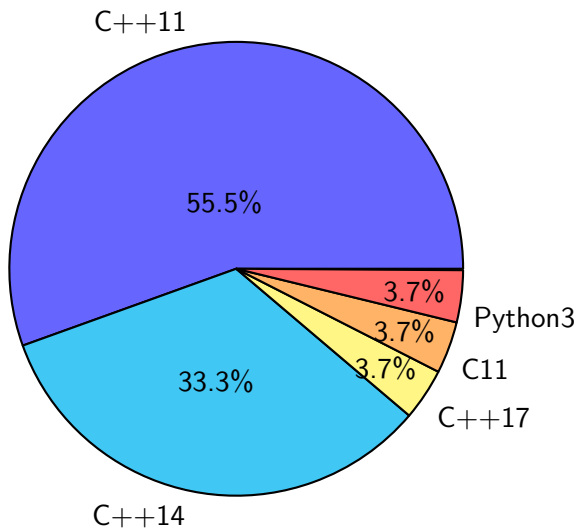
# Grading Policy: Part III

- To get the full score, your report should contain
  - how to compile/run your code,
  - your algorithm,
  - your experiment, and
  - complexity analysis of both Sokoban and your algorithms.

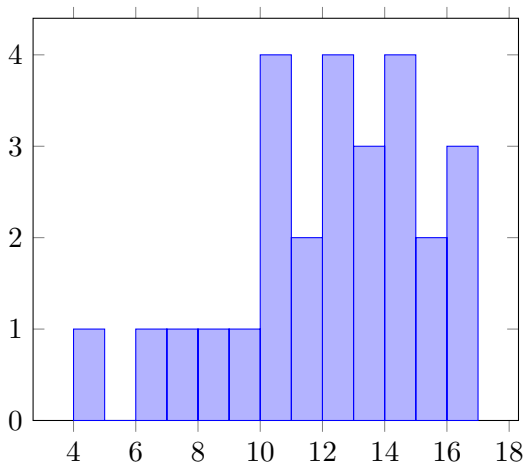
# Grading Policy: Penalty

- You'll receive some penalties if you don't follow `hw1_spec.pdf`.
  - Your solver doesn't read from `stdin`.
  - Your solver doesn't read until the EOF.
  - The EOL of your puzzle is `"\r\n"` instead of `"\n"`.
- If your directory hierarchy is wrong, you won't receive any penalty in this homework.

# Languages



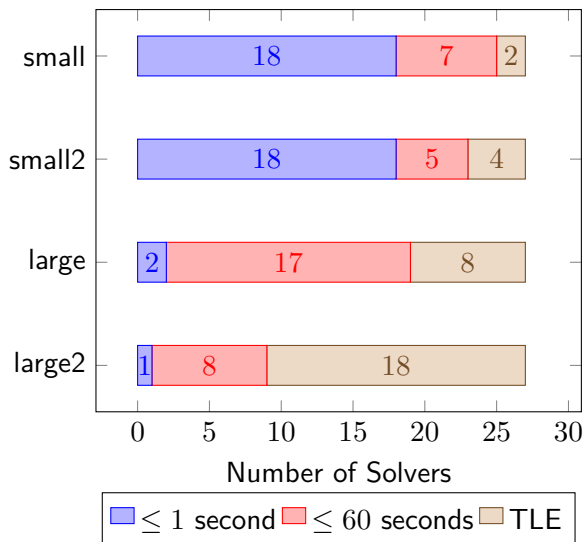
# Score Distribution



Min: 4.8, Max: 16, Avg: 12.26, Median: 12.97, Stdev: 3.00



# Part I Execution Times



# Part I Solution Optimality

