

# Theory of Computer Games (Fall 2020)

## Homework 1 - Result

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November 19, 2020

# Outline

1 Grading Policy

2 Results

# Grading Policy: Overall

- The homework is composed of 3 parts. Suppose you get  $S_i$  points in part  $i$  and receive  $P$  penalties, 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  $L := \llbracket D \leq 7 \rrbracket (0.9)^{\lceil D \rceil}$

# Grading Policy: Part I

- Suppose your Sokoboru solver solves  $n$  testcases in puzzle file  $F$  correctly within 1 minute.

$$\sigma(F) := \sum_{i=1}^n s + \frac{s}{100} \lfloor \frac{100K_0}{K} \rfloor$$

where  $K_0$  denotes the optimal penalty,  $K$  denotes your penalty to solve puzzle  $i$ , and  $s = 0.05, 0.1, 0.1, 0.15$  for tiny, small, medium, and large respectively.

# Grading Policy: Part II

- You get

$$S_2 := \llbracket \text{your input puzzle passes verifier} \rrbracket \\ + \llbracket \text{your input and output puzzle pass verifier} \rrbracket$$

points in this part

# Grading Policy: Part III

- To get full score, your report should contain
  - how to compile/run
  - your algorithm
  - your experiment (including **execution time**)
  - complexity analysis of Sokoboru, your algorithm and your puzzle

# Grading Policy: Penalty

- You'll get some penalties if you don't follow `hw1_spec.pdf`
  - Your solver doesn't read from `stdin` (-0.5)
  - Your output file format is invalid (-0.5)
- If your directory hierarchy is wrong, you won't receive any penalty in this homework.

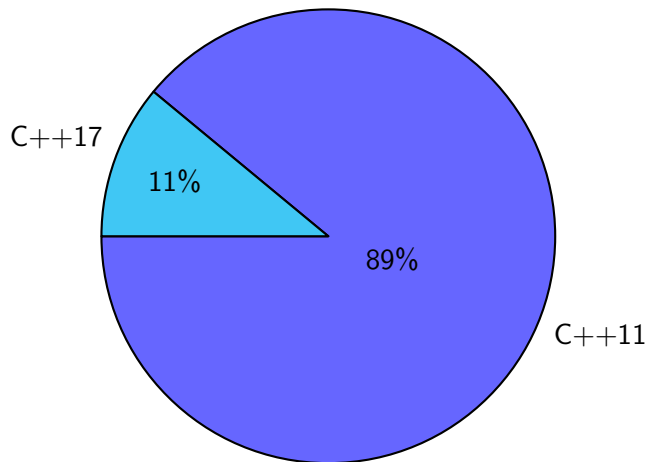
# Outline

1 Grading Policy

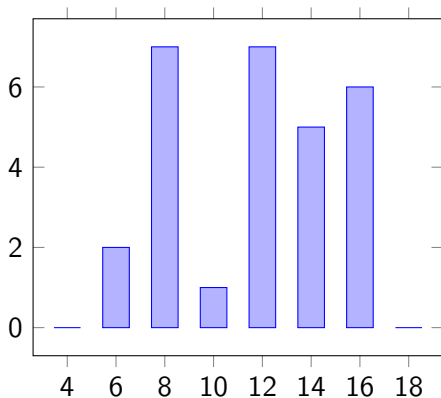
2 Results



# Languages

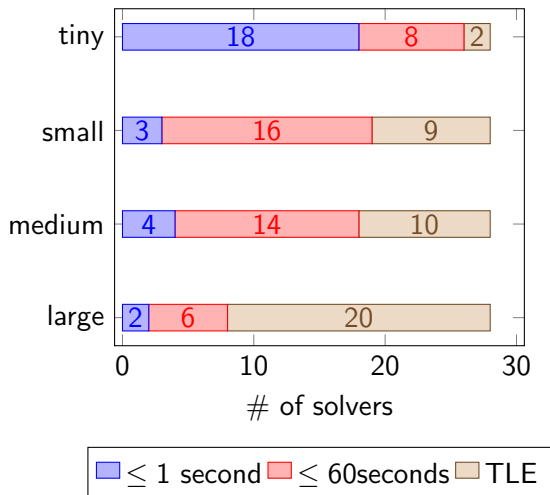


# Score Distribution

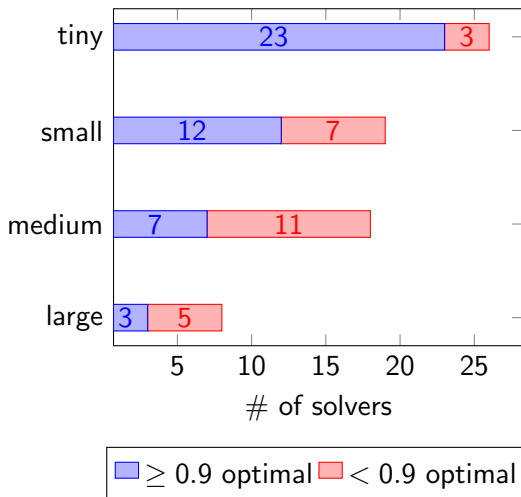


Min: 4.5, Max: 15.75, Avg: 10.64, Median: 11.56, Stdev: 3.35

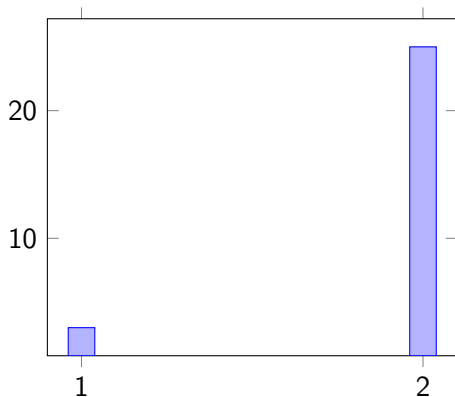
# Part I Execution Times



# Part I Solution Optimality

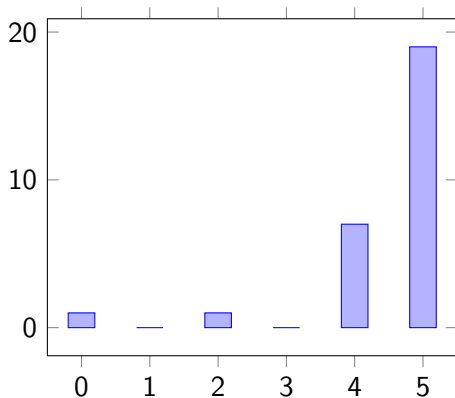


# Part II Score Distribution



Min: 1.0, Max: 2.0, Avg: 1.89, Median: 2.0, Stdev: 0.32

# Part III Score Distribution



Min: 0.0, Max: 5.0, Avg: 4.7, Median: 5.0, Stdev: 0.64