Competition Rule

1. Only for colleagues in Hangzhou TC. Join competition as individual.
2. Online running and submitting is supported.
3. C/C++ 14， JAVA 8， PYTHON 3.5+ are allowed, and there are different limitations for different languages, please refer to score criterion.
4. The submission will be closed at deadline.
5. All codes and results will be published after the contest finish.
6. The answer will be evaluated from 2 perspectives, including correctness, performance. Please refer to score criterion.
7. Plagiarism is prohibited.
8. Hacking website is prohibited, if you hack, you will have no score.
9. The organizing committee reserves the right of interpretation of the rules.

Score Criterion

24hour will be one submission duration. One submission duration starts from 12:00 midday, ends to next day 12:00 midday. After 12:00 midday, all submitted programs will be snapshot and executed to record results.

Program execution will be limited to one core and no network.

Program execution time limit for each program:

C/C++, JAVA8 Program run time limit is 10 minutes.

Python3.10.0 Program run time limit is 200 minutes.

Each program will be executed 3 times, the worst result will be recorded as results. (Avoid some random algorithm to get best result randomly.)

Point Calculation:

Maze:

M = median room count in one submission duration

H = Highest room count in one submission duration

L = Lowest room count in one submission duration

Y = Your room count in one submission duration

If your room count equal to M,

Your Maze Score = 51

If your room count larger than M,

Your Maze Score = $\left(\frac{Y-M}{H-M}\right)^4 \times 50 + 51$

If your room count smaller than M,

Your Maze Score = $\left(\frac{Ys-L}{M-L}\right)^4 \times 50 + 1$

If you get 0 score, then your program either your program failed or timeout.

Office Move:

M = median step count in one submission duration

H = Highest step count in one submission duration

L = Lowest step count in one submission duration

Y = Your step count in one submission duration

If your step count equal to M,

Your Office Move Score = 51

If your step count larger than M,

Your Office Move Score = = $\left(\frac{H-Y}{H-M}\right)^4 \times 50 + 1$

If your step count smaller than M,

Your Office Move Score = $\left(\frac{M-Y}{M-L}\right)^4 \times 50 + 51$

If you get 0 score, then your program either your program failed or timeout.

Your final score = Your Maze Score + Your Move Score

programming time:

Your Programming Time = Your Maze last commit time > Your Move last commit time ? Your Maze last commit time : Your Move last commit time

Your Programming Time is your last commit time in both Maze and Move.

Ranking

1. Score
2. If score is same, the programmer with less programming time will be ranked higher.
3. If score and programming time are same (which is a very rare case), then programming language score is considered. If you use python, you will get 3 points, if you use java, you will get 2 points, if you use C++, you will get 1 point. Higher points will be ranked higher.
4. If score and programming time and programming language score are all same, total program execution time will be compared, less execution time will be ranked higher.

5. If score and programming time and programming language score and total program execution time are same, total program peak memory(/proc/vmPeak) will be compared, less total memory consumption will be ranked higher.
6. If all the above is the same, code line count will be considered, less line count will be ranked higher.
7. If all the above is the same, we will award the pair with a special award.

（中文版）**大赛规则**

1. 个人参赛
2. 比赛支持在线提交代码，服务器运行代码
3. 比赛语言支持 C/C++ 14，JAVA 8，PYTHON 3.5+，针对不同语言有不同限制，请参考评分细则
4. 提交将在截止日志关闭
5. 所有提交代码和结果会在比赛后公开
6. 评分主要考虑正确性和性能，请参考评分细则
7. 禁止抄袭
8. 禁止针对比赛网站的黑客行为，一旦发现，取消成绩
9. 大赛组委会拥有最终解释权

评分细则

24 小时一个提交周期。提交周期从当天中午 12:00:00 开始，于次日中午 12:00:00 结束。所有在此期间提交的程序将被快照存储，并且执行获取成绩。

所有程序将在单核禁用网络的限制下运行。

每题程序执行时间限制：

C/C++, JAVA8 运行时间 10 分钟。

Python3.10.0 运行时间 200 分钟。

每个程序将被运行 3 次，最差结果将被作为结果记录。避免一些随机算法偶然获取最佳结果。

得分计算：

Maze:

M= 一个提交周期中的房间数中位数

H = 一个提交周期中的最高房间数

L = 一个提交周期中的最低房间数

Y = 一个提交周期中的你的房间数

如果你的房间数与 M 相等，则

你的 Maze 得分为 51

如果你的房间数大于 M，则

你的 Maze 得分 = $\left(\frac{Y-M}{H-M}\right)^4 \times 50 + 51$

如果你的房间数小于 M，则

你的 Maze 得分 = $\left(\frac{M-Y}{M-L}\right)^4 \times 50 + 1$

0 分表示你的程序结果错误或者运行超时

Office Move:

M= 一个提交周期中的步数中位数

H = 一个提交周期中的最高步数

L = 一个提交周期中的最低步数

Y = 一个提交周期中的你的步数

如果你的步数与 M 相等，则

你的 Office Move 得分为 51

如果你的房间数大于 M，则

你的 Office Move 得分 = $\left(\frac{H-Y}{H-M}\right)^4 \times 50 + 1$

如果你的房间数小于 M，则

你的 Maze 得分= $\left(\frac{M-Y}{M-L}\right)^4 \times 50 + 51$

0 分表示你的程序结果错误或者运行超时

你的得分 = 你的 Maze 得分 + 你的 Office Move 得分

编程时间:

你的编程时间 = 你的 Maze 最后提交时间 > 你的 Office Move 最后提交时间？ 你的 Maze 最后提交时间 : 你的 Office Move 最后提交时间

你的编程时间是你在两个题目中的最后提交时间

排名

1. 你的得分
2. 如果得分相同, 编程时间少者排在前
3. 如果得分、编程时间均相同（发生概率很低），考虑编程语言得分。Python 为 3 分，Java 为 2 分，C++为 1 分。编程语言分数高者排在前
4. 如果得分、编程时间、编程语言得分均相同，考虑总程序执行时间。总程序执行时间少者排在前
5. 如果得分、编程时间、编程语言、总程序执行时间均相同，比较总程序占用内存峰值(/proc/vmPeak)，总程序占用内存峰值少者排在前
6. 如果以上条件所有都相同，比较代码行数，代码行数少者排在前
7. 如果以上条件所有都相同，恭喜你们，组委会将颁发特别荣誉奖