Problem Solving Techniques 문제해결

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Homework 2b

- 50 points for coding evaluation
  - Submission format
    - You file should work on skku.goorm.io with gcc 11.1.0 complier
  - Submission site: https://skku.goorm.io
    - [Homework] 2b (code)
- 5 points for report
  - The report is not evaluated in detail but evaluated as Pass/Fail
  - Submission format: [Template] Report for exercise/homework
    - File name: yourid_HW2b.pdf
      - Example: 2000123456_HW2b.pdf
  - Submission site: https://icampus.skku.edu/
    - Week 6: [Homework] 2b (report)
- Due date: 4/12 23:59 (no late submission accepted)

Rules for homework

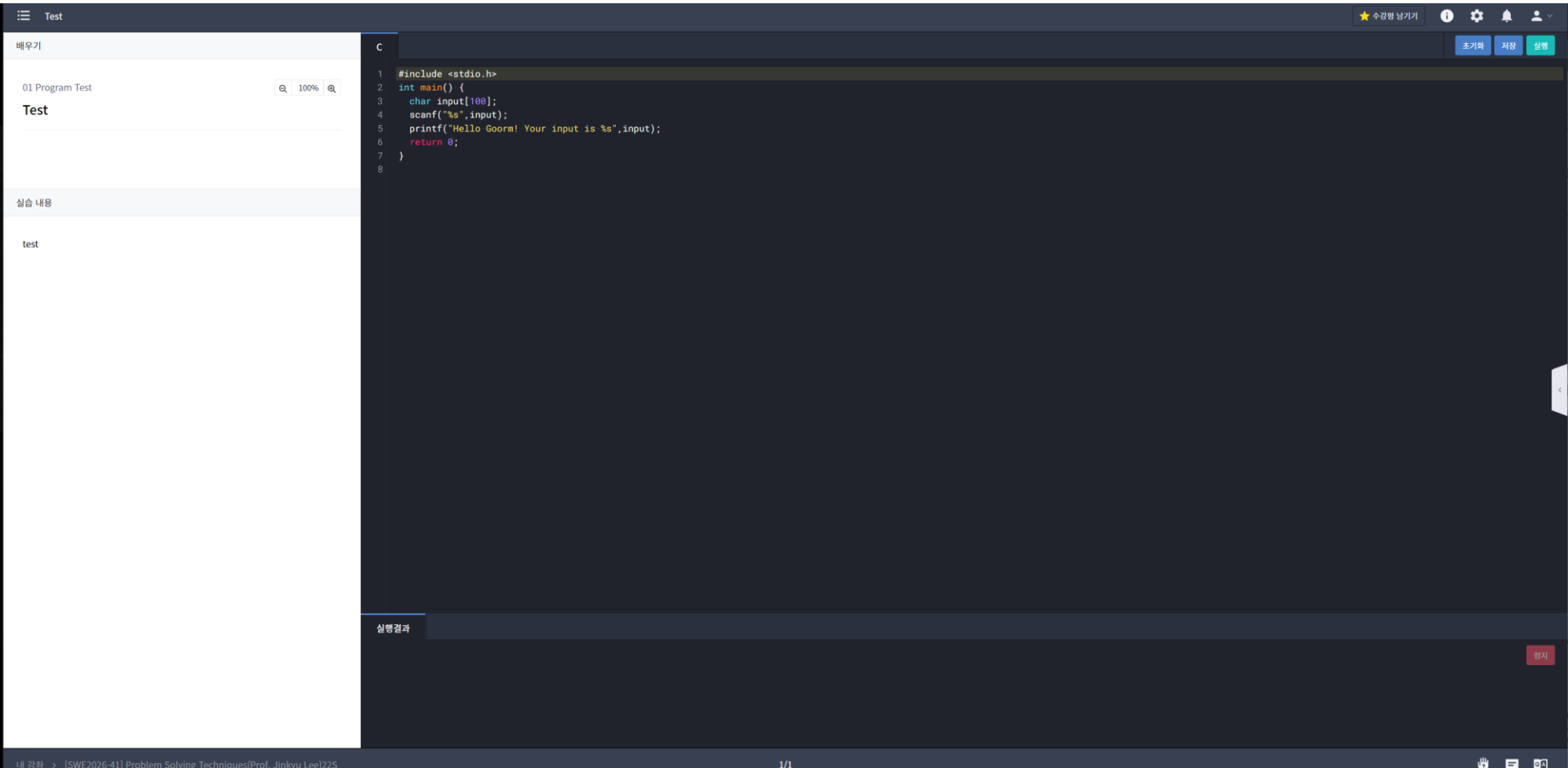
- You should follow instructions.
  - Complier
    - You will get no/less point if your program cannot be complied with the specified complier
  - Input/output format
    - You will get no/less point if TA's automatic evaluation program cannot parse your input or output.
  - Permitted modification scope
    - You will get no/less point if you modify code outside of the permitted modification scope
  - All other rules
    - You will get severe penalty or no/less point if you violate the given rules.

Complier for homework

- Complier
  - skku.goorm.io -> gcc 11.1.0

C language, not C++ language

  - Your program will be correctly evaluated *only if* your program works on skku.goorm.io with gcc 11.1.0 complier



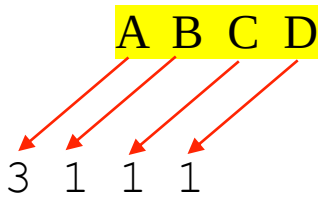
Problem

- Points for soccer teams
  - A soccer league has 20 teams, and each team plays 19 games—once with all other teams. Each team gets
    - A points when it wins, represented by “W” (win),
    - B points when it ties, represented by “T” (tie), and
    - 0 points when it is defeated, represented by “L” (lose),
    - where A and B are integers satisfying $0 < B < A < 10$.
  - For given A and B, we want to know all the game results that yield the maximum OR minimum points (D) of a team with the Cth largest scores.

    - A and B: $0 < B < A < 10$ (integer)
    - C: target ranking (1~20, integer)
    - D: 0 (minimum) or 1 (maximum)

Input/Output Format

- Input



In this case, we want to maximize (D=1) the team with the highest score (C=1).

- Output

There could be many different solutions. Print only one of them.

```
XWWWWWWWWWWWWWWWWWWW
LXTTTTTTTTTTTTTTTTTT
LTXTTTTTTTTTTTTTTTTT
LTTXTTTTTTTTTTTTTTTT
LTTTXTTTTTTTTTTTTTTT
LTTTTXTTTTTTTTTTTTTT
LTTTTTXTTTTTTTTTTTTT
LTTTTTTXTTTTTTTTTTTT
LTTTTTTTXTTTTTTTTTTT
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LTTTTTTTTTTTTXTTTTTT
LTTTTTTTTTTTTTXTTTTT
LTTTTTTTTTTTTTTXTTTT
LTTTTTTTTTTTTTTTXTTT
LTTTTTTTTTTTTTTTTXTT
LTTTTTTTTTTTTTTTTTXT
LTTTTTTTTTTTTTTTTTTX
```
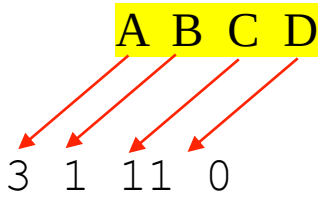

- (n,n) should be “X”.
- If (i,j) is “W”, (j,i) should be “L”.
- If (i,j) is “T”, (j,i) should be “T”.

Input/Output Format

- Input



- Output

Try to make the output result!

In this case, we want to minimize (D=0) the team with the eleventh-largest score (C=2).
Warning: Not minimizing the score of the eleventh team, but minimizing the score of the team that has the eleventh-largest score.

Template

- Template
  - No C code template

Evaluation

- Evaluation
  - TA will test several cases.
  - For each test case,
    - If your C code results in an answer within 10 seconds on skku.goorm.io with gcc 11.1.0 complier,
      - If your answer is valid, meaning that
        - (n,n) should be “X”.
        - If (i,j) is “W”, (j,i) should be “L”.
        - If (i,j) is “T”, (j,i) should be “T”.
        - Every print format is correct.
        - You get 20%.
        - In addition, for 80%, we will rank the students’ score. In the class, I will explain.
      - Else,
        - You get 0%.
    - Else,
      - You get 0%.

Before submission, test your program on skku.goorm.io with gcc 11.1.0 complier! Otherwise, you may get zero point although your program works on your environment.

Evaluation

- Evaluation
  - For 80%, we will rank the students' score. In the class, I will explain in detail.
    - For example, suppose that there are 50 students with a valid answer for a testcase.

Unique rank

Rank	Score
1	80%
2	78.4%
…	
25	40%
26	38.4%
…	
50	0%

Non-unique rank

Rank	Score
25	40%
25	40%
…	
25	40%
26	38.4%
…	
50	0%

    - This means, your score gets degraded as the number of students with the same score becomes largers.