Problem Solving Techniques 문제해결

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Homework 1b

- 50 points for coding evaluation
  - Submission format
    - File name: yourid_HW1b.c
      - Example: 2000123456_HW1b.c
    - File type: Not .cpp but .c
  - Submission site: https://skku.goorm.io
    - [Homework] 1b (code) *To be created*
- 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_HW1b.pdf
      - Example: 2000123456_HW1b.pdf
  - Submission site: https://icampus.skku.edu/
    - Week 3: [Homework] 1b (report)
- Due date: 3/22 23:59 (no late submission accepted)

Rules for homework

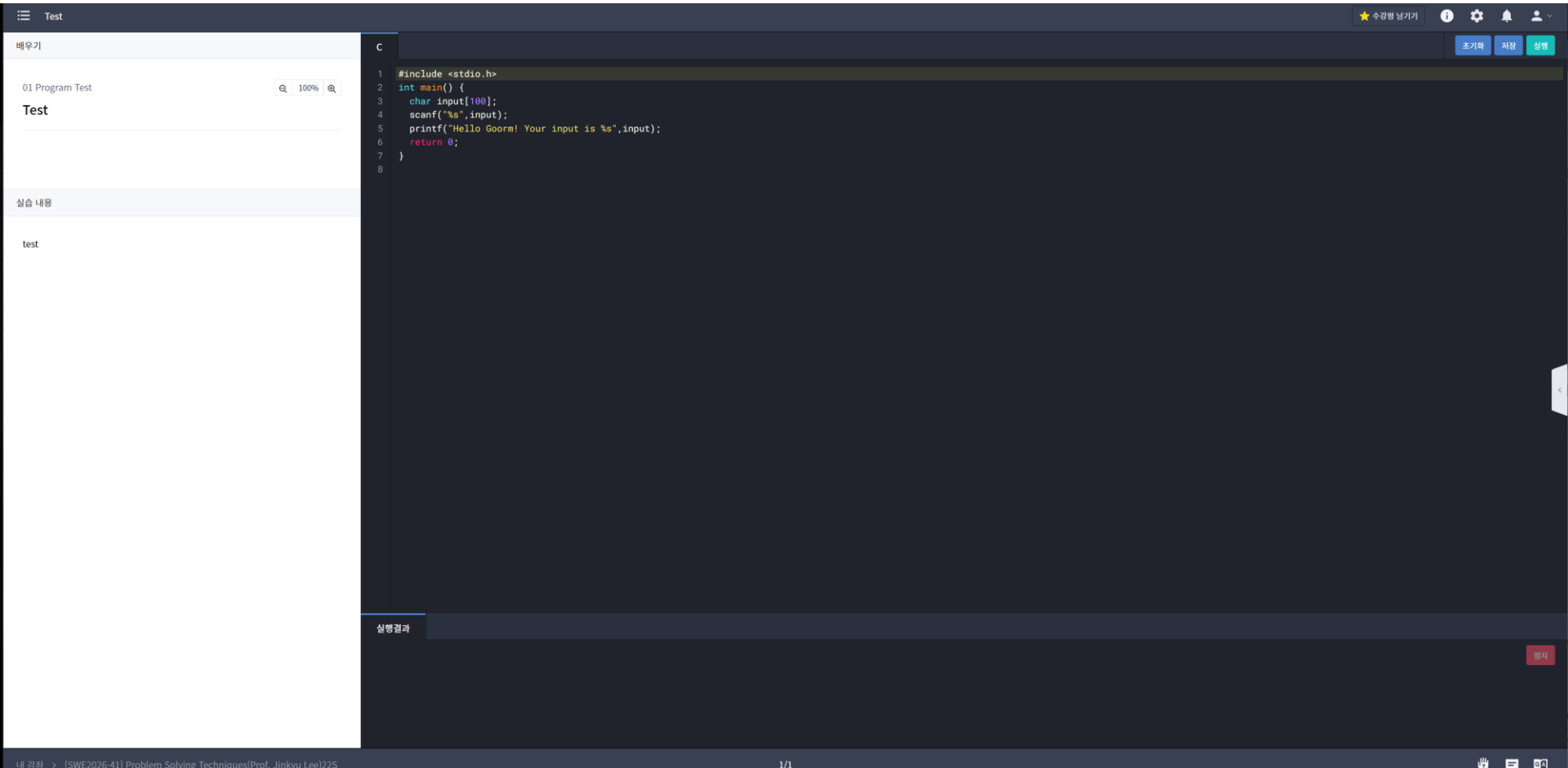
- You should follow instructions.
  - Complier
    - You will get no/less point if your program cannot be complied with the specified complier
  - Input/output format
    - You will get no/less point if TA's automatic evaluation program cannot parse your input or output.
  - Permitted modification scope
    - 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

- Finding k Test Program
  - Recall Exercise A – Finding k. You are going to make test cases for the problem.
  - Input: n, D1, D2, …, Dn, A1, A2, …, An
    - n is the size of matrix (n by n). ($2 \leq n \leq 10$)
    - D1, D2, …, Dn are *diagonal* entries. (See Sample Result1.)
    - A1, A2, …, An are *antidiagonal* entries. (See Sample Result1.)
  - Output: n by n matrix, each of whose column and row is sorted in an ascending order. Also, each element should be a *unique* integer value (meaning that all elements should be different numbers). If such a matrix is not feasible, print “infeasible”.
    - Each entry (number) is an integer from 1 to 1000.

Problem

- Finding k Test Program
  - Sample Result1
    - Input: 4 5 11 30 46 20 21 22 23
      - This means that n=4, D1=5, D2=11, D3=30, D4=46, A1=20, A2=21, A3=22, A4=23
      - Note that D1 is the leftmost & uppermost number, and Dn is the rightmost & undermost number. A1 is the leftmost & undermost number, and An is the rightmost & uppermost number.
    - Sample output (there are many possible outputs, each number should be separated by one space):

      5 10 15 23
      6 11 22 35
      7 21 30 45
      20 25 40 46

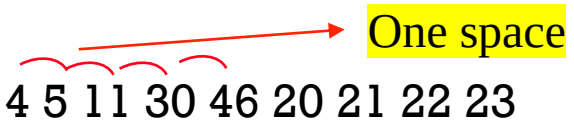
  - Sample Result2
    - Input: 4 10 12 25 28 20 21 22 23
      - This means that n=4, A1=10, A2=12, A3=25, A4=28, D1=20, D2=21, D3=22, D4=23
    - Output **Infeasible**

Why infeasible?

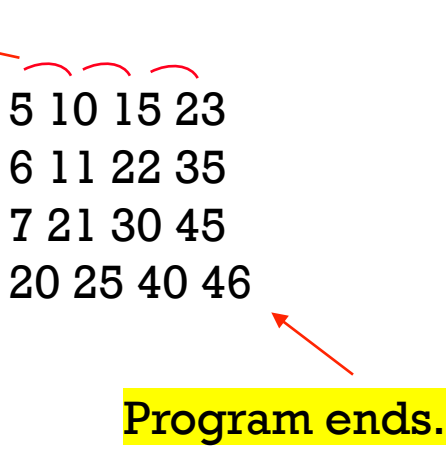
10 ? ? 23
? 12 22 ?
? 21 25 ?
20 ? ? 28

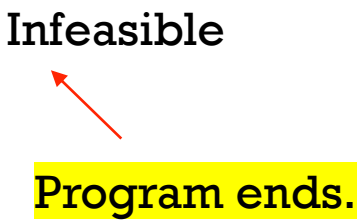
Input/Output Format

- Input



- Output





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 correct,
        - You get 100%.
      - 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.