

Programming Assignment Tutorial

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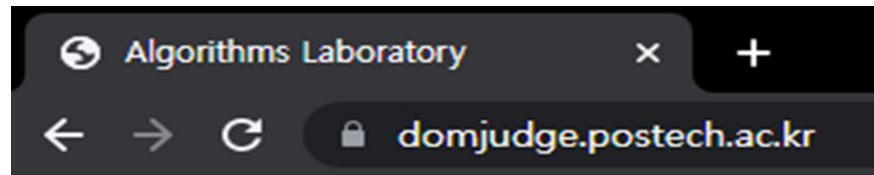
Office: B2-208

Programming Assignment

- Assignments are related to lecture contents
- You will take 7-8 programming assignments
 - 3-5 problems for each assignment
 - You will have 1 week per assignment
- Programming language
 - C/C++ gcc/g++ 9.4.0
 - Python 3.8.10
- We also have offline programming mid-term and final exam
 - You can use all the materials on domjudge site at exam

Introduction of Domjudge

- Domjudge system
 - <https://domjudge.postech.ac.kr>
 - Submit your code at here
 - Real-time evaluation
- Enter the domjudge site and click "Domjudge"



Sitemap

[Domjudge](#)

[Intro](#)

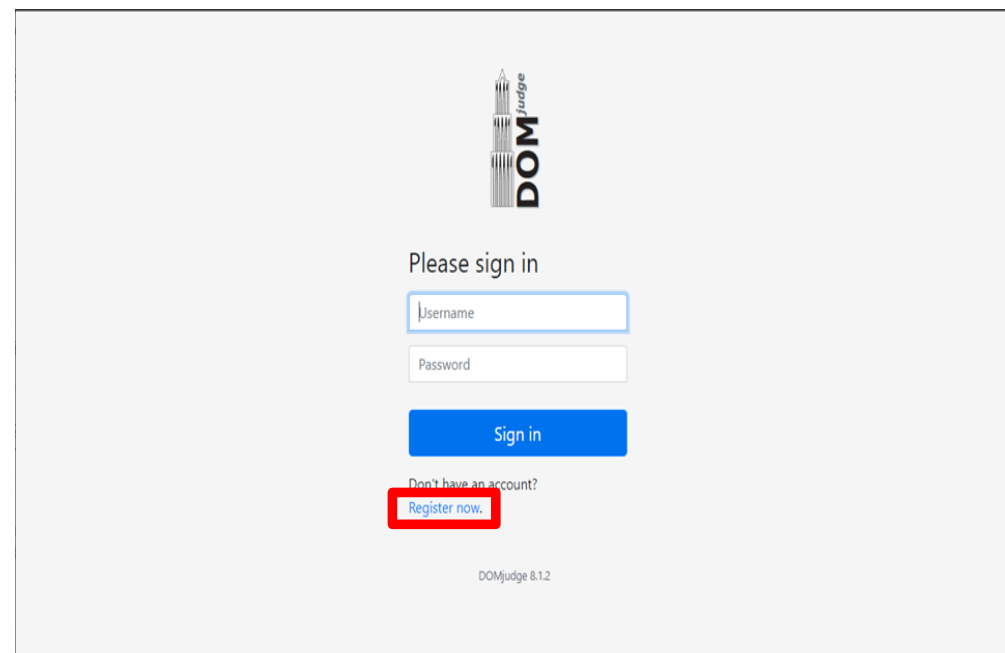
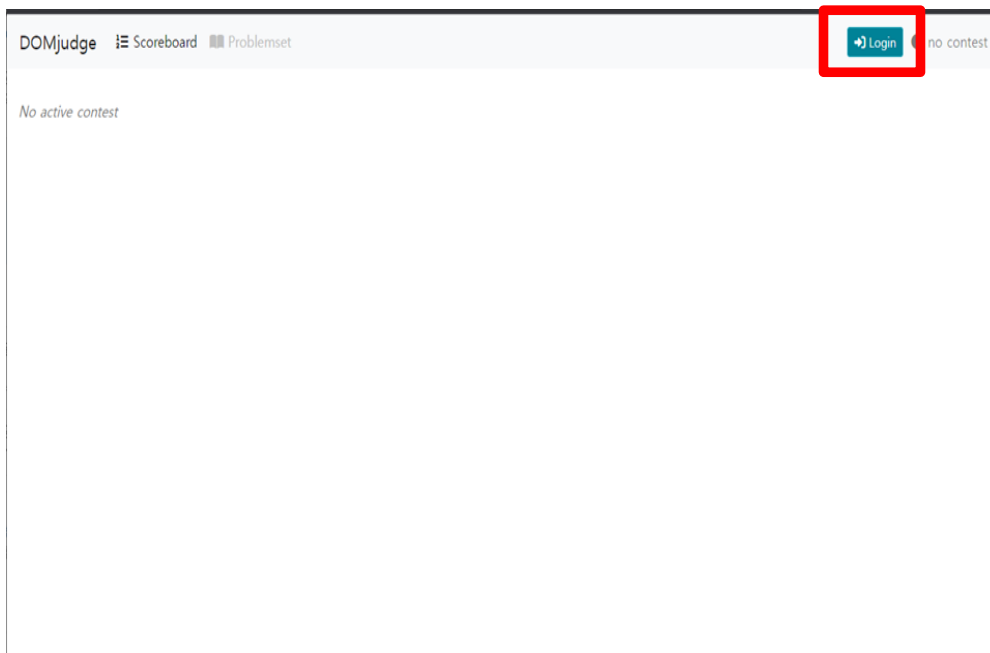
[Python Document](#)

[C++ Document](#)

[Python / IDE download link](#)

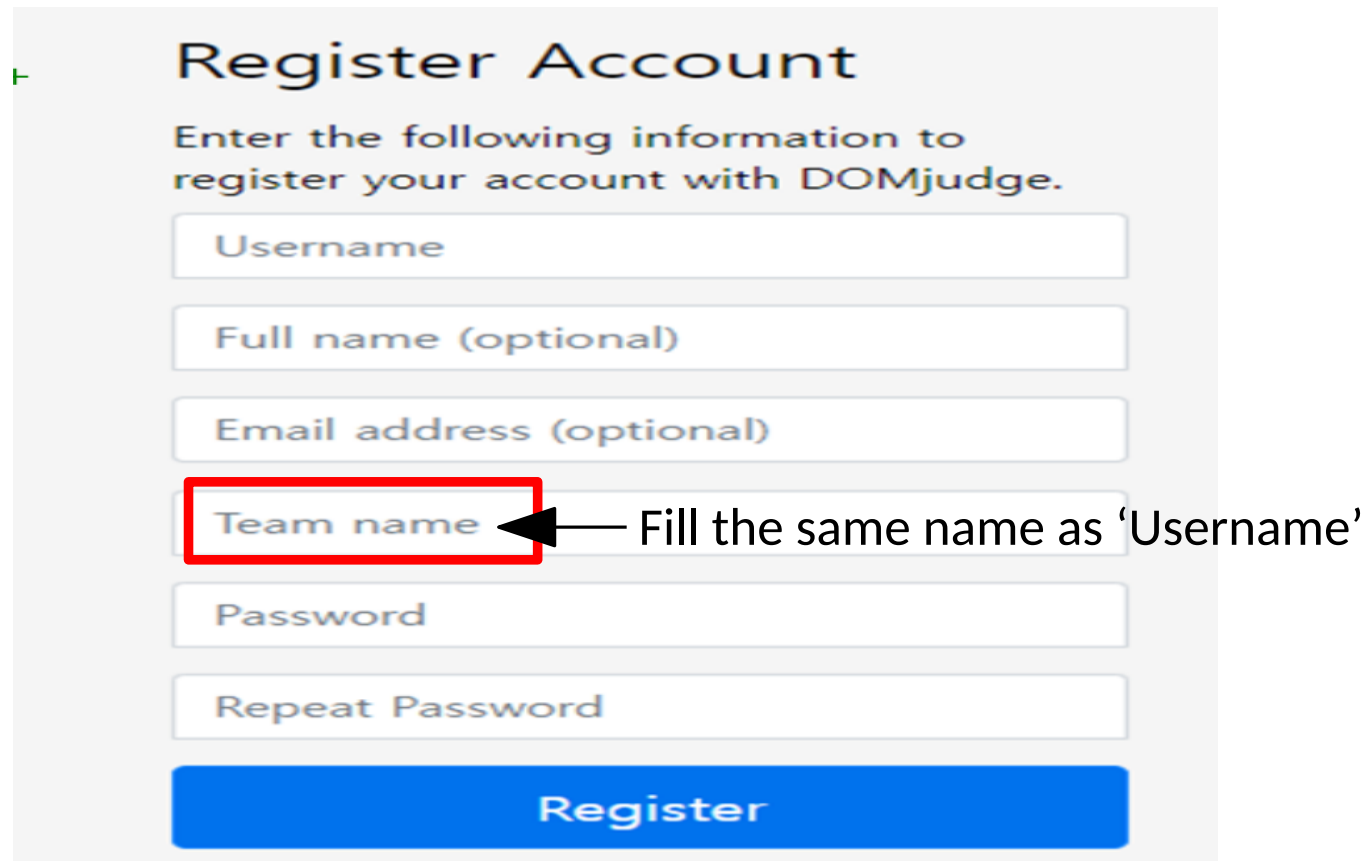
Registration

- Click "Login" and "Register now"



Registration

- Register your own ID
 - You don't have to fill 'Full name' and 'Email address'
 - After registration, please answer the Goolge sheet <https://forms.gle/xF7wiRvmMMzz2pLj7>



The image shows a registration form titled "Register Account" for DOMjudge. The form includes several input fields: "Username", "Full name (optional)", "Email address (optional)", "Team name", "Password", and "Repeat Password". A blue "Register" button is at the bottom. A red box highlights the "Team name" field, with an arrow pointing to it from the text "Fill the same name as 'Username'".

Register Account

Enter the following information to register your account with DOMjudge.

Username

Full name (optional)

Email address (optional)

Team name ← Fill the same name as 'Username'

Password

Repeat Password

Register

Domjudge Home

- After logging in

- ①: Links to main page of Domjudge
- ②: You can select assignments

Now you will face sample contest 'assn0'

DOMjudge Home Problemset Scoreboard Submit Logout assn0 11d 5:45:19

①

RANK	TEAM	SCORE	A+B	HELLO, WORLD!
1	jagunlee	0	0	

②

Submissions

No submissions

Clarifications

No clarifications.

Clarification Requests

No clarification request.

request clarification

Problem Text

- Access problem text

- ①: 'Problemset' button will lead you to this page
- ②: You can access each problem text here

The screenshot shows the DOMjudge web interface. At the top, the navigation bar includes 'DOMjudge', 'Home', 'Problemset' (highlighted with a red box and circled 1), and 'Scoreboard'. On the right, there are 'Submit' and 'Logout' buttons, along with a user profile 'assn0' and a clock showing '11d 5:43:48'. The main content area is titled '23_01_assn0 problems' and displays two problem cards. The first card is for 'A+B (EN)' with a limit of '1 second* / 512 MB'. The second card is for 'Hello, World!' with the same limit. Both cards feature a 'text' button (highlighted with a red box and circled 2) and a 'Submit' button. A footer note states '* language time factors apply'.

Read Problem Carefully!

- Otherwise, you might be solve WRONG problem.
- Or, you will solve the problem in wrong way.
 - Problem statement guides time complexity you should achieve.
- Also, you should keep the input/output statement.

A+B

Description

Write a program that takes two integers A and B from the standard input (stdin) and print an integer $A + B$ to the standard output (stdout).

Input Statement

- First line contains T which indicates the number of test cases.
- Each following T lines contains a test case consisting of two integers A and B ($-2^{31} \leq A, B < 2^{31}$).

Output Statement

The program should print $A + B$ for each input. Each output should be separated by empty line.

Input Example

```
4
1 2
3 4
5 6
7 8
```

Output Example

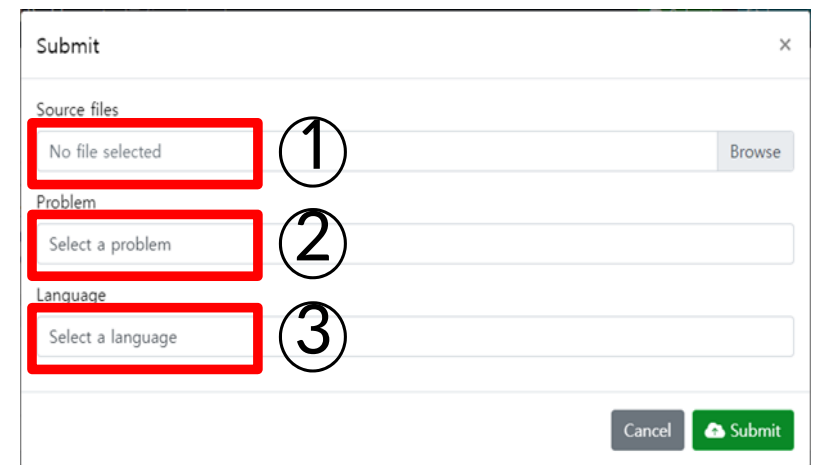
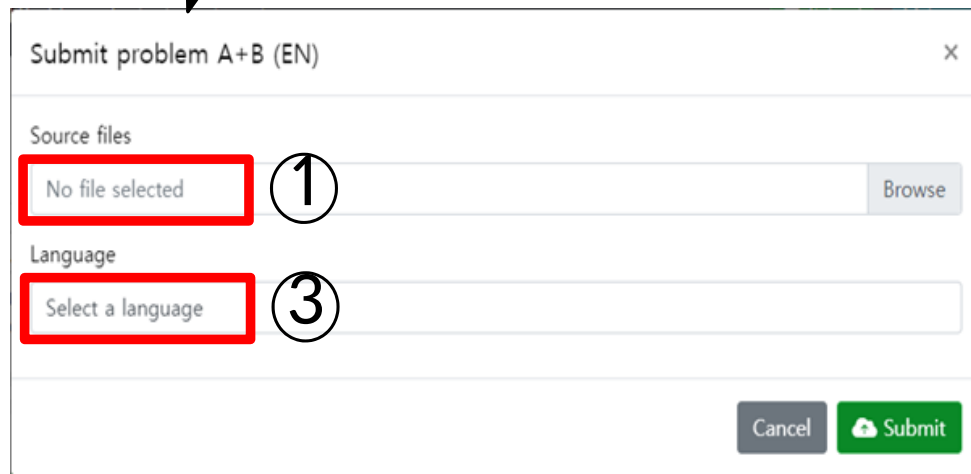
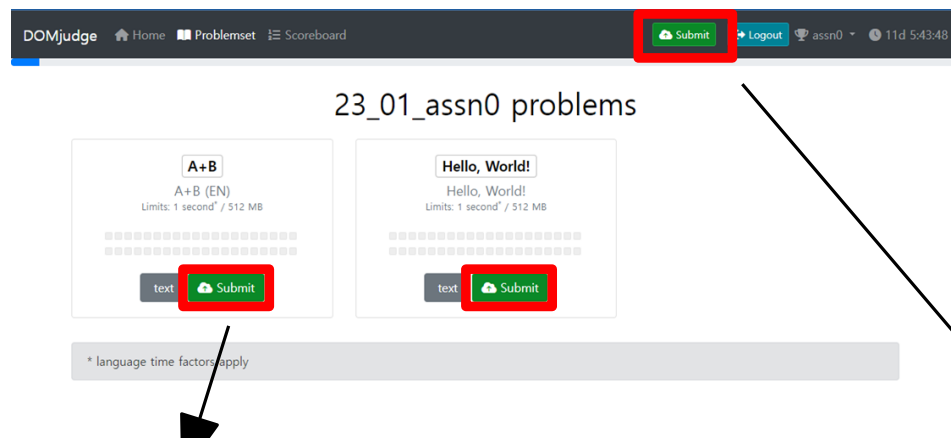
```
3
7
11
15
```

Time Limit: 1 second

Submit Code

- Submit button will show you the submission pop-up window
 - ①: Select source file in your computer
 - ②: Select problem
 - ③: Select language

The file name must be English without spacing!



Submission Results

- You can check your submission results from homepage
- You can submit your code infinitely many times until the due date
- The number of submissions is not included in your grade

The screenshot shows the DOMjudge interface. At the top, there are navigation links for Home, Problemset, and Scoreboard, along with a Submit button, a Logout button, and user information (assn0, 11d 7:17:32). The main content area displays the problem name 'A+B' and the code 'HELLO, WORLD!'. Below this, a table shows the submission results for the team 'jglee' with a score of 52 and 3 tries. A green notification bar indicates 'Submission done! Watch for the verdict in the list below.' Below the notification, there are two sections: 'Submissions' and 'Clarifications'. The 'Submissions' section is highlighted with a red box and contains a table with the following data:

time	problem	lang	result
16:42	A+B	PY3	PENDING
16:41	A+B	PY3	CORRECT
16:41	A+B	PY3	COMPILER-ERROR
16:38	A+B	PY3	RUN-ERROR
16:37	A+B	PY3	WRONG-ANSWER

The 'Clarifications' section shows 'No clarifications.' and 'Clarification Requests' shows 'No clarification request.' with a 'request clarification' button.

Submission Results

PENDING : The system is evaluating your program. Wait and press F5 to check your result. If it takes too long, ask us.

COMPILER-ERROR : There was an error during compilation of your code.

RUN-ERROR : There was an error during running your program. You should check whether there was index out of range, stack overflow, wrong input format, etc.

NO-OUTPUT : There was no output from your program.

WRONG-ANSWER : Output of your program doesn't match with the answer.

TIMELIMIT : Your program failed to be terminated in timelimit. Write more efficient program.

TOO-LATE : Your submission was posted after the end of deadline.

CORRECT : Correct answer! Congratulations!!

Usual Errors

- Compiler version: gcc/g++ 9.4.0, python 3.8.10
- Index out of range: check the size of array(list)
- Memory exceed: you cannot use memory larger than 512MB
- Segmentation fault: similar to 'index out of range'
 - Occurred in dynamic memory allocation
- (Python3) Maximum recursion depth exceed: add below code
 - `import sys`
 - `sys.setrecursionlimit([number])`
- Domjudge does not support external libraries
 - ex) numpy
- Exception handling for degenerate cases
 - We cannot give you test case files.

Time Complexity Tip

- Time complexity in problem solving
 - The maximum size of input gives you the hint of the time complexity to get correct
 - Table shows the scale of computation corresponding to time complexity and size of input.

input size (n)	time complexity		
	$O(n^3)$	$O(n^2)$	$O(n \log n)$ approx.
100	1,000,000	10,000	1,650
1,000	1,000,000,000	1,000,000	16,500
10,000	1e+12	100,000,000	165,000
100,000	1e+15	10,000,000,000	1,650,000

3GHz = 3,000,000,000 instructions / second

Notice about Grading

- Assn0 is not scored. It is just a tutorial. sorry :)
- Each correct problem, you get 1 point!
- There is no partial score. sorry :)
 - 1 CORRECT, 1 POINT
 - Otherwise, 0 POINT

Notice about Plagiarism (Copy Checking)

- **DO NOT COPY** code from your friend, senior or internet!
- We will use copy checker program to detect plagiarism. We can ask you some explanation if your implementation has high similarity with any other implementation.
- Note that cheating is great violation according to POSTECH regulation!
- **WE DON'T CARE WHO IS SOURCE AND WHO IS RECEIVER.**

Let's Practice! :)

- Click problem 1 in 'assn0' contest.
- It defines the goal of program, input/output style and time limit.
- You should satisfy all described statements.
- Luckily, we provide you a solution for this tutorial problem.

A+B

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Input Example

```
4
1 2
3 4
5 6
7 8
```

Output Example

```
3
7
11
15
```

Time Limit: 1 second

Let's Practice! :)

- Copy the solution and paste it to your local file and save
- Then, submit the file to Domjudge system!

(Note that we used 'long long' type in C/C++ for this problem.

Do not make a mistake using small data type that doesn't cover the given input range)

```
#include <stdio.h>

int main() {
    int t;
    long long a, b;
    int i;
    scanf("%d", &t);
    for (i = 0; i < t; i++) {
        scanf("%lli%lli", &a, &b);
        printf("%lli\n", a + b);
    }
}
```

C

```
#include <iostream>

using namespace std;

int main() {
    int t;
    cin >> t;
    for (int i = 0; i < t; i++) {
        long long a, b;
        cin >> a >> b;
        cout << a + b << endl;
    }
}
```

C++

```
t = int(input())
for _ in range(t):
    a, b = map(int, input().split())
    print(a+b)
```

Python3

Clarification

- You will encounter numerous problems during the assignment.
- You can leave question to TAs at the domjudge system.
- You can ask any topic related to the programming assignments.
- But, do not ask us about any specific test case!

Clarification

- Click 'request clarification'
- Select the problem to ask and write your question.
- If your question is not for a specific problem, Choose 'General issue'.

The screenshot shows a coding platform interface. On the left, there is a 'Submissions' table with columns for time, problem, language, and result. The table contains five rows of submission data. To the right of the table is a 'Clarifications' section with a 'request clarification' button highlighted in a red box. An arrow points from this button to a 'Send clarification request' dialog box on the right. The dialog box has a 'Recipient' field with 'Jury' selected, a 'Subject' dropdown menu with 'A+B: A+B (EN)' selected, and 'Cancel' and 'Send' buttons at the bottom, with the 'Send' button highlighted in a red box.

time	problem	lang	result
16:42	A+B	py3	PENDING
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16:41	A+B	py3	COMPILER-ERROR
16:38	A+B	py3	RUN-ERROR
16:37	A+B	py3	WRONG-ANSWER

Clarifications

No clarifications.

Clarification Requests

No clarification request.

request clarification

Send clarification request

Recipient

Jury

Subject

A+B: A+B (EN)

General issue

Technical issue

A+B: A+B (EN)

Hello, World!: Hello, World!

Cancel Send

Notice about Handwriting Homework

- Answer must be written by hand in English.
 - Using tablet is also allowed.
 - You get 0 points for the problem if you write the answer in Korean.
- Please, submit your homework in pdf format with a single file.
- No late submission.