Graded Assignment 1

1 Submission Details

1.1 Introduction to Moodle VPL

This assignment will be evaluated on Virtual Programming Lab (VPL) on Moodle. Follow the following steps to access the assignment on Moodle.

1. Visit https://moodle.iitd.ac.in/

2. Enter your *kerberos* userid and password along with captcha to login.

3. From the list of courses select '1801-COL100'.

4. You would see 'Graded Assignment 1 - Question 1', 'Graded Assignment 1 - Question 2' and 'Graded Assignment 1 - Question 3'. (see figure 1)

5. Clicking on any one of them shows 3 tabs:

   - Description: shows important information about the assignment including the questions and the submissions date.
   - Edit: Allows creating and editing of c++ program.
   - Submission: Shows submission details included submission scores.

Figure 1: List of activities

Figure 2: Code Editor

PLEASE NOTE:

- You would not be able to use the moodle VPL from outside IIT. You would have to be connected to the IIT lan.

- Moodle VPL may not work on chrome browser. Firefox browser is preffered.

1.2 Editing a c++ program on Moodle VPL

- Go to the 'edit' tab.

- Create a new file with .cpp extension.

- Write your program and save the file.

- After saving the program, 3 options 'run', 'debug' and 'evaluate' become visible. (see figure 2)

- 'run' option shows the output.

- 'evaluate' option evaluates the program and generates a score based on your program's performance.

On the first attempt of evaluation you would have to add exception for moodle security certificate. Read 'Adding security exception for Moodle.pdf' for details.

2 Assignment Questions

Question 1 - Compute the nth power of 2

PROBLEM

Write a C++ program to compute the powers of 2.
The program must take a single integer number 'n' as input and print the value of 2 raised to the power 'n'.

INPUT FORMAT

A single line containing an integer ranging from 0 to 30 (Both Inclusive)

CONSTRAINTS

$0 \leqslant n \leqslant 30$

OUTPUT FORMAT

Output a single integer denoting the value of 2 raised to the power n

EXAMPLE

input - 4
output - 16 (computed as $2^4 = 2*2*2*2$)

Question 2 - Compute n!

PROBLEM

Write a C++ program to compute the factorial of a number 'n'.
The program must take 1 integer number 'n' as input and print the value of factorial of 'n'.

INPUT FORMAT

A single line containing an integer ranging from 0 to 12 (Both Inclusive)

CONSTRAINTS

$0 \leqslant n \leqslant 12$

OUTPUT FORMAT

Output a single integer denoting the value of n!

EXAMPLE

input - 4
output - 24 (computed as 1*2*3*4)

Question 3 - Compute the sum of even numbers between 1 to n

PROBLEM

Write a C++ program to compute the sum of even numbers between 1 to n.
The program must take 1 integer number 'n' as input and print the sum of all even numbers between 1 and 'n'.

INPUT FORMAT

A single line containing an integer ranging from 1 to 1000 (Both Inclusive)

CONSTRAINTS

$1 \leqslant n \leqslant 1000$

OUTPUT FORMAT

Output a single integer denoting the sum of even numbers

SAMPLE EXAMPLE

input - 10
output - 30 (computed as sum of 2+4+6+8+10)