Experiment 1

Arithmetic Operations and Conditional Statements

(Duration: 105 min)

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Submission Deadline**: 12.30**

Purpose: The aim of this experiment is to implement some functions that need to be constructed by using combinations of basic arithmetic operations and conditional statements.

Lab Procedure

Your source code should consist of following parts:

1. Your program should receive two inputs **from the user** in a **float** data type. (10 pt.)
   Note: In the rest of the document the first and the second inputs will be represented with variable **x** and **y** respectively.
2. After receiving the inputs from the user, your program should implement following functions: (90 pt.)
   Note: You can directly implement the following functions inside the main block. You do not need to create separate C function blocks.
   - $k = x \blacksquare y = \begin{cases} x^2 + y, & x + y \leq 0 \\ x - y, & x + y > 0 \end{cases}$ (25 pt.)
   - $l = x \otimes y = \begin{cases} x + \frac{1}{3}, & x + y \leq 0 \\ \frac{x+y}{xy+1}, & 0 < x + y \leq 10 \\ y + \frac{1}{3}, & x + y > 10 \end{cases}$ (25 pt.)
   - $m = x \triangle y = \begin{cases} 7x + 5, & x = y \\ 3y + 6, & x \neq y \end{cases}$ (25 pt.)
   - $n = \max(k, l, m)$ (15 pt.)

You should **print the values of k, l, m and n** on the screen.

Outputs:

The outputs of your program should be as follows:

<table>
<tr>
<td>For $x = 2$ and $y = 1$:

```
Please enter the inputs x and y:
2
1
k=1.000000
l=1.000000
m=9.000000
n=9.000000
```

</td>
<td>For $x = -3$ and $y = -3$:

```
Please enter the inputs x and y:
-3
-3
k=6.000000
l=-2.666667
m=-16.000000
n=6.000000
```

</td>
</tr>
<tr>
<td>For $x = -2$ and $y = -0.3$

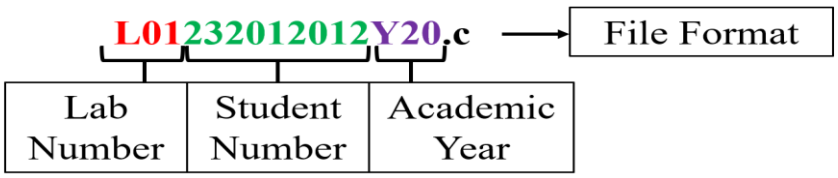
```
Please enter the inputs x and y:
-2
-0.3
k=3.700000
l=-1.666667
m=5.100000
n=5.100000
```

</td>
<td>For $x = -1$ and $y = -3$:

```
Please enter the inputs x and y:
-1
-3
k=-2.000000
l=-0.666667
m=-3.000000
n=-0.666667
```

</td>
</tr>
</table>

Four outputs above are given to students so that they can test their program quickly. In order to get the full score, the program should work for all possible input values (not just for the examples above).



- If you are unable to submit your code to CMS you can send an e-mail with your attached C file to eelab204@gmail.com (Code submissions via e-mail have the same deadline)