

**CS69011: Computing Lab**  
**Task : Linear Programming and Integer Programming**

**September 4, 2023**

=====Instructions=====

1. In the case of user input, assume only valid values will be passed as input.
2. Regarding submission: Create a separate Python file for each task : **<RollNo>\_T1.py**  
**<RollNo>\_T2.py** **<RollNo>\_T3.py**
3. Create a zipped file of all these Python files with the name:  
**<RollNo>\_LP\_TS.zip** and submit it to Moodle.

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**T2 (25 - 35 mins).** Using Python OR-Tools(pywraplp) find the maximum value of  $ax + by$  subject to some user defined constraints:-

constraints format =  $\langle n1 \rangle x + \langle n2 \rangle y \langle condition \rangle \langle n3 \rangle$ .

where  $\langle n1 \rangle$ ,  $\langle n2 \rangle$ ,  $\langle n3 \rangle$  are numbers and  $\langle condition \rangle \in \{“g”, “ge”, “l”, “le”, “eq”\}$

“g” = greater, “ge” = greater than and equals to, “l” = less than, “le” = less than and equals to, “eq” = equals to

Sample Input - (for  $a = 3, b = 4$ )

```
3 4
1 2 le 14
3 -1 ge 0
1 -1 e 2
```

Sample Output -

Solution of T1