Optional Exercise - 2.

1. Submission: write down your answers, and send it to yqtian@ust.hk
    a. The name of the PDF file must be: **COMP1021-EX2_FirstName_LastName.pdf**
    b. Answers will be released at https://github.com/yqtianust/COMP1021_2024F_L13 on 10rd Oct 2024.
2. The first student (by the timestamp of your email is received) whose score is 100% correct of this exercise will receive a chocolate from USA!
3. The students of which scores are 2nd to 5th highest over all submissions will receive some sugars from Canada.
4. Students, who finished and submitted all optional exercises in one week after each exercise is released, are eligible for a lucky draw at the end of term! (5 gifts in total.)
5. Students whose total scores of all exercises are ranked top 5 in entire class will receive extra gifts.

Question 0 (7pts):

Write down the results of the following operations.

Variables	Operations
A = 19 B = 10	A % B = 9
A = 19 B = 10	A / B = 1.9
A = 9 B = 8	A % B = 1
A = 199 B = 0	A / B = error
A = 201 B = 1	A % B = 0
A = 19 B = 100	A / B = 0.19
A = 19 B = 100	A % B = 19

Question 1 (14pts):

Given this function:

```
def f(num):
    if num:
        print("hello",end="!!")
    if num % 2:
        print("it is an even number")
```

```
    if num % 3:
        print("it can also be divided by 3")
    elif num % 6 == 1:
        print("I am lucky!")
```

After defining the above function, what is the output of the following function calls?

f(0)	
f(1)	hello!!it is an even number it can also be divided by 3
f(2)	hello!!it can also be divided by 3
f(3)	hello!!it is an even number
f(4)	hello!!it can also be divided by 3
f(5)	hello!!it is an even number it can also be divided by 3
f(6)	hello!!
g(7)	Error g is not defined

Question 2 (30pts):

Please define a function that:

1. Ask three numbers from users,
    a. If the first number is the same as the second one, print a message1 (defined by you), exit
    b. If the third number is not between 2 and 10, print a message2 (defined by you), exit
    c. Add a check here so that the step 2 will at least prints two lines; otherwise, print a message3 (defined by you), exit.
2. Starting the first number, till the last one (include), print all the elements between them, separated by ‘,’, except that after printing every n numbers, a new line is printed. Note that n is the third number from users.
3. Print a message, saying that how many numbers are needed so that **the number of the numbers at the last line** is the same as **the number of the first line**.

For example, if the three number is 2, 8, 2

The output will be:

2,3

4,5

6,7

8,

1 number is needed.

For example, if the three number is 2, 8, 3

The output will be:

2,3,4

5,6,7

8,

2 numbers are needed.

For example, if the three number is 2, 8, 4

The output will be:

2,3,4,5

6,7,8

0 number are needed.

If anything is not specified by the above statements, write down your assumption clearly.

Your function (12pts):

See the ex2.py file

What is your function's output given the following inputs (2pts each)
3, 10, 2

0

3, 10, 3

1

3, 10, 5

2

3, 10, 7

6

10, 4, 4

1

10, 4, 2

1

Write an input (three numbers), so that your function can print message1 (2pts)

Write an input (three numbers), so that your function can print message2 (2pts)

Write an input (three numbers), so that your function can print message3 (2pts)