***Instructions:***

**You will have to log-in in your up.edu.ph account to be able to access the link given for the google meet or zoom. Once logged-in you have to share your desktop screen and also the camera and mic of your laptop or desktop should be turned on so that I can see and hear you while you are taking the exam.**

**- Good Luck and God Bless -**

APPLICATION/CODING:

1. The sum of the squares of the first ten natural numbers is,

   $$1^2 + 2^2 + \ldots + 10^2 = 385$$

   The square of the sum of the first ten natural numbers is,

   $$(1 + 2 + \ldots + 10)^2 = 55^2 = 3025$$

   Hence, the difference between the sum of the squares of the first ten natural numbers and the square of the sum is **3025 – 385 = 2640**.

   Find the difference between the sum of the squares of the first ***n*** natural numbers and the square of the sum.

```
1
2   def sum_of_sqr (a): #First, finds the sum of squares
3
4       sum_sqr = 0
5       for i in range(1, a + 1):
6           sum_sqr = sum_sqr + (i*i)
7       return sum_sqr
8
9   a = 10
10  print(sum_of_sqr(a))
11
12  def sqr_of_sum (b): #second, finds the square of the sum
13
14      sqr_sum = 0
15      for i in range(1, b + 1):
16          sqr_sum = sqr_sum + (i*i)
17      return sqr_sum
18
19  b = 10**2 #exponent used for finding square of sum
20  print(sqr_of_sum(b))
21
22  print(sqr_of_sum(b) - sum_of_sqr(a)) #Calculates the difference between the two returned values
23
```

2. Create a bar graph given ***N*** integers.

   Sample output:

```
Enter number of input: 8
8
Enter 8 numbers: 10 5 4 3 2 12 9 6
The bar graph based on the 8 numbers you entered:
            *
            *
    *       *
    *       * *
    *       * *
    *       * *
    *       * * *
    * *     * * *
    * * *   * * *
    * * * * * * *
    * * * * * * *
10 5 4 3 2 12 9 6
>
```

```python
x = int(input("Enter number of input: "))
print (x)
y = list[x-1](map(int, input("Enter the numbers: ").split()))

print("The bar graph based on the the numbers you entered:")

for i in range (x,y):
    for j in range(i):
        print('*', end="")
    print()
```