

# CS 1510: Intro to Computing - Fall 2017

## Assignment 3: Working with repetition statements

**Due: Friday, September 21, 2017, by 11:59 p.m.**

### Customer Request #1 (summation.py)

You are contacted by Dr. Matt Matic who teaches mathematics at Whatsamatta U. He wants to be able to consider the idea of summation.

Recall that a summation adds a sequence of numbers, and the result is the total. For example, if we were finding the summation of 5 starting at the value 1, we would find the total is  $1+2+3+4+5=15$ .

Let's always assume that our starting value is 1.

He asks you to write a program that:

- prompts the user for a positive number
  - continuing to prompt the user if they give you a 0 or negative integer
- then prints out ALL of the sum values from 1 through the number the user entered

For example:

```
Please enter a positive number to sum: 0
Please enter a positive number to sum: -1
Please enter a positive number to sum: 6
sum of 1 is 1
sum of 2 is 3
sum of 3 is 6
sum of 4 is 10
sum of 5 is 15
sum of 6 is 21
>>>
```

### Customer Request #2 (calculator.py)

You are cleaning up in the Hall of Justice the morning after a huge Super Friends bash when a call comes in....

"This is the League of Doom!"

"We are going to blow up Aquaman with one billion pounds of TNT, if you don't give us a bazillion dollars!!!"



"We have Batman, too"

Now something has to be done, but there is no one around. It is all up to you.

Just then a batarang crashes through the window with a message from Batman:

**The code to defuse the bomb is taking all the numbers of the geometric sequence of 3 under 4,000,000 and adding them together.**

## Assignment

You must find the sum of all the numbers in the geometric sequence of 3 less than 4 million. You will use python loops to accomplish this.

The geometric sequence of 3 looks like this: **1, 3, 9, 27, 81, 243, ...** where you start with the number one and multiply the previous number by 3 to get the next number.

Remember to actually print out the final answer!

## Notes and requirements:

Make sure that you save your programs in the correctly named files

1. Use meaningful variable names with the proper style (use\_snake\_casing)
2. Use meaningful constants and names where appropriate and use proper style (ALL\_CAPS\_AND\_UNDERSCORES)
3. Every file containing python code that you submit should contain a header comment block containing three pieces of information as shown below:

```
"""  
File: filename  
Author: your-name  
Description: one-line description of the file  
"""
```

## Submit your work

Submit both files **summation.py** and **disarm.py** to eLearning.

Remember, **no late work will be accepted**. Start early!



