

## proj02: Iteration

### Part I:

Open proj02\_01.py.

Write a program that prompts the user to enter numbers, one per line, ending with a line containing 0, and keep a running sum of the numbers. Only print out the sum after all the numbers are entered (at least in your final version). Each time you read in a number, you can immediately use it for your sum, and then be done with the number just entered.

Example:

```
Enter a number to sum, or 0 to indicate you are finished: 4
Enter a number to sum, or 0 to indicate you are finished: 5
Enter a number to sum, or 0 to indicate you are finished: 2
Enter a number to sum, or 0 to indicate you are finished: 10
Enter a number to sum, or 0 to indicate you are finished: 0
```

The sum of your numbers is: 21

### Part II:

Open proj02\_02.py

Write a program that asks the user how many Fibonacci numbers to generate and then generates them.

The Fibonacci sequence is a sequence of numbers where the next number in the sequence is the sum of the previous two numbers in the sequence. The sequence looks like this: 1, 1, 2, 3, 5, 8, 13 ...

Extensions:

- Use the other type of loop
- Instead of Fibonacci numbers, generate powers of 2
- Instead of Fibonacci numbers, generate all divisors of a number (*Hint*: % gives the remainder of two numbers, so  $8\%4 = 0$ , and  $8\%5 = 1$ ).

Example:

How many Fibonacci numbers would you like to generate? 8

```
1
1
2
3
5
8
13
21
```