CMPSC-132: Programming and Computation II
Fall 2018

Lab #14

Due Date: 12/07/2018, 11:59PM

Instructions:

- The work in this lab must be completed alone and must be your own. Do not copy code from online sources. That is considered plagiarism.
- Use the starter code provided on this CANVAS assignment. Do not change the function names or given started code on your script
- The file name must be LAB14.py (incorrect name files will get a -1 point deduction)
- **A doctest is provided as an example of code functionality. Getting the same result as the doctest does not guarantee full credit. You are responsible for testing your code with enough data as possible.**
- Each function must return the output (Do not use print in your final submission otherwise, you will get a -1 pt deduction)
- Do not include test code outside any function in the upload. Remove all your testing code before uploading your file. Do not include the input() function in your submission.

Goal

[5 pts] Write the function *makingSound*(*n*,*sound*) that takes a positive integer number *n* and a string and **returns** a function that takes in a positive integer number *k* which will **return** a list with all numbers from 0 to *k*-1 but adding the string *sound* instead for all the numbers that are divisible by *n*.

EXAMPLE:

```
>>> catSound=makingSound(6, 'Meow')
>>> catSound(10)
['Meow', 1, 2, 3, 4, 5, 'Meow', 7, 8, 9]
>>> makingSound(6, 'Meow')(10)
['Meow', 1, 2, 3, 4, 5, 'Meow', 7, 8, 9]
```

[5 pts] Write the function *vectorizing*(*term*) that takes a function to apply and **returns** a function that takes in a list *aList* which will run *term* on each item in *aList* and **returns** a list containing [term(item 1), term(item 2), ... , term(item n)]

EXAMPLE:

```
def square(x):
    return x*x
>>> x=[1,2,3,4,5,6]
>>> vectorizing(square)(x)
[1, 4, 9, 16, 25, 36]
>>> y=['Hello','world',[],[8,9,7],[[1],[2],[3]]]
>>> vectorizing(len)(y)
[5, 5, 0, 3, 3]
>>> vectorizing(type)(y)
[<class 'str'>, <class 'str'>, <class 'list'>, <class 'list'>, <class
'list'>]
>>> vectorizing(lambda w:w>3)(x)
[False, False, False, True, True, True]
```

Deliverables:

- Submit your script file named LAB14.py to the Lab14 CANVAS assignment before the due date