# Python – Problem Set One

*Who are you who can summon fire without flint or tinder?*

Unless otherwise specified, please include screen shot and a text file copy of your source, please, in addition to a MS Word file for the full problem set.

1. Leap years occur in years whose number is divisible by four but not by 100 unless it is divisible by four hundred. So 1992, 1996, 2000 are leap years, but 1993 and 1900 were not.

*Write a Python3 program that states if a year is a leap year or not.*

Input: A year (####)

Output: Answer the question – is the given year a leap year?

Example output:

Enter year: 1997

1997 is not a leap year.

1. *Existing* *functions/built in tools*

What is happening with each of these, or why do we get an error with Python?

int("3")

int(3.7)

int("3.7")

int(float("3.7"))

**We are type casting each of the variables to int. In other words, we are changing their object type to and object type of int. The only line I received an error for was the “**int("3.7")**” at which the reason was because it was an invalid literal for int with base 10. However every other line of code worked out perfectly fine in changing the variables to ints, even in the third line starting with 3.7 it was changed right into a 3. Or in other words, the third line of code is the only line to produce an error after running the program, meaning that the typing must be dynamic.**

1. Try this out…. What happens? (Add comments to explain steps!)

x = [4]

def antioch():

x.append(3)

def maynard():

x = [1, 2]

x.append(3)

print(x)

antioch()

print(x)

maynard()

print(x)

Hint: scope – what is happening?