Composit.py code:

import sys

#

# Separate a list of numbers into primes and composites.

# Primes are identified using sieve of Eratosthenes

#

# Usage: ./composite 15 17 101 189 ...

# It will print:

# Composite: [15, 189]

# Prime: [17, 101]

#

#-------------------------------------------

#

# sieve(lo, hi) returns list of primes from lo to hi, computed by sieving.

#

# lo and hi are further proof of the dislike of full-word-typing: think low and high

#

def sieve(lo,hi):

#You will need to implement the Sieve of Eratosthenes

#which finds all the primes in a range of numbers

# https://en.wikipedia.org/wiki/Sieve\_of\_Eratosthenes explains it

# A good way to start is to build a list of all the numbers

# tip: "range" is a tool in python/Google is an OK resource for the language!

#ANSWER: below and

# FILL IN THIS SECTION!!!!!!!!!! of code.

primes = []

nums = range(lo, hi+1)

for x in nums:

prime = True

for y in range(2, int(hi/2)):

if(x % y == 0 and x!=y):

prime = False

break

if(prime):

primes.append(x)

return primes

# The goal is to:

# separate a set of numbers into primes and composites

#

# given (set-of-numbers)

#

# return ( set-of-composites, set-of-primes )

#

def separate(numbs):

primes = set(sieve(min(numbs), max(numbs)))

return (numbs.difference(primes), numbs.intersection(primes))

#--------------------------------------------

#

# Main program:

#

# Extract numbers from argument list.

# Use lowest and highest ones as argument to seive

# Must be at least 1 number in the arguments (arguments are passed at the command line!)

#

if len(sys.argv)>=2:

#Uhoh What is that Strange 1: action?

#Answer: it is only taking the items from index 1 onwards, instead of capturing the file name in index 0 as well

numbs = sys.argv[1:]

# QUESTION FOR YOU: What sort of thing is "numbs"?

#ANSWER: an array of the input arguments (as strings) from the command line

numbs = [int(x) for x in numbs if x.isdigit()]

if len(numbs)>0:

comp, prim = separate(set(numbs))

#So why does this print work?

#TODO: ANSWER:

print("Composite: ", sorted(comp))

print("Prime: ", sorted(prim))

sys.exit()

#

# usage

#

print("Prints which numbers are prime and which are composite.")

print("Usage: composite n1 n2 n3 ...")

print("example: composite 3 5 7 9 11 13 15")