WEEK 1: Ruby Basics

-- General --

1. Define the following terms:

Dynamic Typing
Implicit Declaration

2. Circle the terms that best describe the ruby language:

Scripting **Functional** **Object Oriented**

3. What are the structural and physical equality / inequality operators in ruby?

-- Top Level --

Look up functions for how to do the following tasks in ruby using either Google or ".methods" as shown in class and test them out in irb:

Strings
(a) Convert a string to an integer
(b) Make a string all uppercase
(c) Trim leading and trailing whitespace of a string
(d) Concatenate two strings
(e) Obtain the first character of a string
(f) Obtain a substring of the first three characters of a string
(g) Find the length of a string
(h) Convert the string to a character array
(i) Find the ASCII value of a length 1 string
(j) Determine whether a string contains a given substring

Arrays
(a) Convert an array to its printable format
(b) Remove duplicates from an array
(c) Append an array to the end of another array
(d) Sort an array
(e) Find the length of an array
(f) Determine whether an array contains a given element
(g) Reverse an array
(h) Look up push, pop, <<. >>, shift, unshift

Hashes

(a) Add a key-value pair to a hash
(b) Determine whether a hash contains a given key
(c) Determine whether a hash contains a given value
(d) Find the number of mappings in a hash
(e) Combine two hashes into one

Integers

(a) Raise an integer to an exponent
(b) Do modulus division with a pair of integers
(c) Take the absolute value of an integer
(d) Find the greatest common divisor between two integers

-- Common Statements --

Try the following in irb!

If two values x and y are equal, print “success”:

```
if x==y then puts “success” end
puts “success” if x==y
unless x!=y then puts “success” end
puts “success” unless x!=y
```

Repeat the action of printing “success” three times:

```
i=1                                for i in 1..3 do puts “success” end
while i <= 3 do                    3.times do puts “success” end
     puts “success”
     i += 1                        # fun fact: i++ is illegal in ruby!
End
```

-- Challenge --

Write a method that given a string, returns a list of characters that appear more than 2 times in the string. There should be no duplicates in the list. Try to be efficient and do this in O(N) time where N is the length of the string.

EX: “supercalifragilisticexpialidocious” => [“s”, “c”, “a”, “l”, “i”]