Task 1:

Write your own implementation of this algorithm preferably in Ruby or in your favourite programming language.

We have two rules that may be applied to a number n:

n = n/2 (n is even)
n = 3n + 1 (n is odd)

Applying these rules to a given starting number x, the sequence will eventually reach 1. For example, starting with 13:

13– 40 – 20 – 10 – 5 – 16 – 8 – 4 – 2 – 1

There are 9 steps in this example:
Step 1:13 * 3 + 1 = 40
Step 2:40 / 2 = 20
Step 3:20 / 2 = 10
….
Step 9: 2 / 2 = 1

Input: A positive starting number

Output: The number of steps required to reach 1.

Please pay special attention to producing clean, maintainable and well tested code.

Task 2:

Write a program (preferably in Ruby) to add up every non-duplicate number in that array.

Let's say you have an array of integers called 'arr' of length 100.

arr = [1,6,3,9,3,4,5,2,6 …]

Input: An array of integers

Output: The sum of every non-duplicate number in the given array

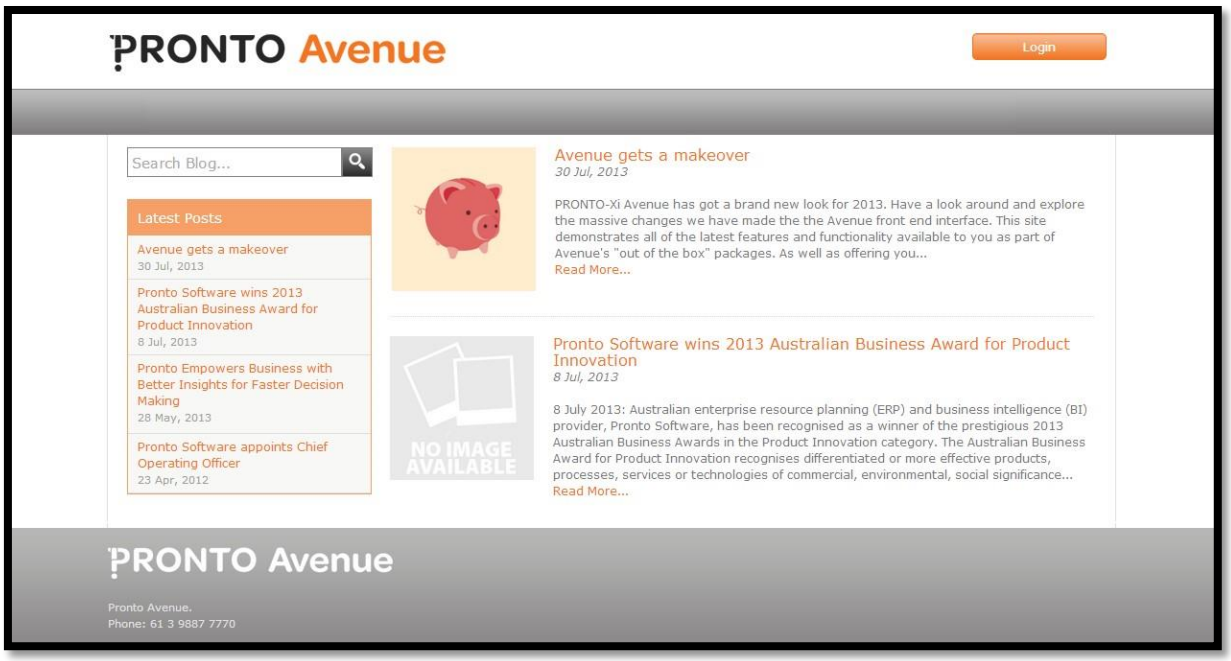
Please pay special attention to producing clean, maintainable and well tested code.

Task 3:

HTML

Write some html code to recreate the following page (i.e. “Image – A”). Don’t worry too much about the content, focus on the layout and placement of elements. It doesn’t need to be pixel perfect. Extra points for being responsive.

Image - A



Task 4:

JavaScript

Refer “Image – A” listed above.

Write some JavaScript code (feel free to use libraries) to remove all but the first news post when the title ‘Latest Posts’ is clicked.