Assignment 4 INFORMATION ARCHITECTURE, FALL 2019

DUE : 10:00 AM SATURDAY, OCTOBER 19

Problem 1. We want to write a Python class named Rectangle constructed by a length and width and a method which will compute the area of a rectangle. Please complete the commented lines.

```
class Rectangle():
  def __init__(self, l, w):
    # please complete this line

  def rectangle_area(self):
    # please complete this line
```

Problem 2. Perform an experimental analysis to measure the size of `array` and `list`. Visualize the sizes of used memory as a function of the input size. You may reuse the code shown in the lecture.

Problem 3. Create a list called `myList` with the following six items: `76, 92.3, 'hello', True, 4, 76`. Write Python statements to do the following:

1. Append `'apple'` and `76` to the list.
2. Insert the value `'cat'` at position 3.
3. Insert the value `99` at the start of the list.
4. Find the index of `'hello'`.
5. Count the number of `76`s in the list.
6. Remove `True` from the list using `pop` and `index`.

Problem 4. Write a function that takes three arguments `(r, c, v)` and returns a list containing `r` sublists (e.g. `[[], [], []]`), each containing `c` number of `v` items.

- `r` : Number of sublists contained within the main list.

- `c` : Number of items contained within each sublist.
- `v` : Item contained within each sublist.

Example :

- `fun(4, 2, 7) -> [[7,7],[7,7],[7,7],[7,7]]`
- `fun(3, 1, 'hello') -> [['hello'],['hello'],['hello']]`