

Taller 4

Métodos Computacionales para Políticas Públicas - URosario

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Instrucciones:

- Guarde una copia de este *Jupyter Notebook* en su computador, idealmente en una carpeta destinada al material del curso.
- Modifique el nombre del archivo del *notebook*, agregando al final un guión inferior y su nombre y apellido, separados estos últimos por otro guión inferior. Por ejemplo, mi *notebook* se llamaría: mcpp_taller4_santiago_mataallana
- Marque el *notebook* con su nombre y e-mail en el bloque verde arriba. Reemplace el texto "[Su nombre acá]" con su nombre y apellido. Similar para su e-mail.
- Desarrolle la totalidad del taller sobre este *notebook*, insertando las celdas que sea necesario debajo de cada pregunta. Haga buen uso de las celdas para código y de las celdas tipo *markdown* según el caso.
- Recuerde salvar periódicamente sus avances.
- Cuando termine el taller:
 1. Descárguelo en PDF.
 2. Suba los dos archivos (.pdf y .ipynb) a su repositorio en GitHub antes de la fecha y hora límites.

(Todos los ejercicios tienen el mismo valor.)

Zelle, Exercises 6.8 (p. 159):

- True/False: 1-10
- Multiple choice: 2, 3, 6, 7, 10
- Programming Exercises: 1, 3, 4, 11, 12, 13

True/False

Respuestas: 1. False 2. False 3. True 4. True 5. False 6. False 7. False 8. True 9. True 10. False

Multiple choice

Respuestas: 2. a) def 3. a) return 6. a) by value 7. d) to demonstrate intellectual superiority 10 a) mutable

Programming Exercises

1.

```
In [1]: animales=[["cow","moo"],["horse","ho"],["chicken","pio"], ["pig","ugh"],["dog","guau"]]
for i, x in animales:
    x = x + ", " + x
    print( "Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!")
    print( "And on that farm he had a", i + " "+ "Ee-igh, Ee-igh, Oh!" )
    print( "With a"+" " + x + " here, and a " + x + " there")
    print( "Here a"+" " + x + " there " + x +
           " everywhere a " + x + "!" )
    print( "Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!" )
    print()
```

Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!
 And on that farm he had a cow Ee-igh, Ee-igh, Oh!
 With a moo, moo here, and a moo, moo there
 Here a moo, moo there moo, moo everywhere a moo, moo!
 Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!

Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!
 And on that farm he had a horse Ee-igh, Ee-igh, Oh!
 With a ho, ho here, and a ho, ho there
 Here a ho, ho there ho, ho everywhere a ho, ho!
 Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!

Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!
 And on that farm he had a chicken Ee-igh, Ee-igh, Oh!
 With a pio, pio here, and a pio, pio there
 Here a pio, pio there pio, pio everywhere a pio, pio!
 Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!

Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!
 And on that farm he had a pig Ee-igh, Ee-igh, Oh!
 With a ugh, ugh here, and a ugh, ugh there
 Here a ugh, ugh there ugh, ugh everywhere a ugh, ugh!
 Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!

Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!
 And on that farm he had a dog Ee-igh, Ee-igh, Oh!
 With a guau, guau here, and a guau, guau there
 Here a guau, guau there guau, guau everywhere a guau, guau!
 Old MacDonald had a farm, Ee-igh, Ee-igh, Oh!

3.

```
In [2]: PI = 3.141592653

def sphereArea(radius):
    return 4*PI*radius**2

def sphereVolume(radius):
    return 4/3 *PI*radius**3
```

```
In [3]: sphereArea(2)
```

```
Out[3]: 50.265482448
```

```
In [4]: sphereVolume(2)
```

```
Out[4]: 33.510321632
```

4.

```
In [21]: def sumN(n):
          numero=0
          for i in range(n+1):
              numero=numero+i
          return numero
```

```
In [22]: sumN(5)
```

```
Out[22]: 15
```

```
In [7]: def sumNCubes(n):
         numero=0
         for i in range(n+1):
             numero=numero+(i**3)
         return numero
```

```
In [8]: sumNCubes(2)
```

```
Out[8]: 9
```

11.

```
In [23]: num=[1,2,3,4,5]
def squareEach(nums):
    for i in range(len(nums)):
        nums[i] = nums[i] ** 2
    print (nums)
```

```
In [24]: squareEach(num)

[1, 4, 9, 16, 25]
```

12.

```
In [17]: num=[1,2,3,4,5,5]
def sumList(nums):
    numero=0
    for i in nums:
        numero= numero + i
    return numero
```

```
In [18]: sumList(num)
```

```
Out[18]: 20
```

13.

```
In [19]: def toNumbers(strList):
        return [int(i) for i in strList]
a=['1','2','3']
```

```
In [20]: toNumbers(a)
```

```
Out[20]: [1, 2, 3]
```