NumerosPseudoAleatorios

January 24, 2021

1 NOMBRE: Alex Benavidez

2 MATERIA: Simulacion

3 PROFESOR: Ing Diego Quisi

```
[3]: !pip install wmi
```

```
Collecting wmi
  Downloading WMI-1.5.1-py2.py3-none-any.whl (28 kB)
Requirement already satisfied: pywin32 in
c:\users\alex-\anaconda3\envs\simulacion\lib\site-packages (from wmi) (300)
Installing collected packages: wmi
Successfully installed wmi-1.5.1
```

```
[21]: import wmi
      import cpuinfo
      import psutil
```

```
[22]: w = wmi.WMI(namespace="root\wmi")
      temp=w.MSAcpi_ThermalZoneTemperature()[0].CurrentTemperature
      0xC = 16
      nproc = float(cpuinfo.get_cpu_info()['count'])
      vel = float(cpuinfo.get_cpu_info()['hz_advertised_friendly'].split(" ")[0])
      flops = nproc*vel*0xC
      m_flops=int(flops*1024)
      cpu_en_uso=psutil.cpu_percent()
      ram=psutil.virtual_memory().total
      ram_en_uso=psutil.virtual_memory().used
```

```
[23]: vals =[temp, m_flops, cpu_en_uso, ram, ram_en_uso,185925, 21041, 8265, 261119,␣
      →20127]
```

```
[24]: #Obtener adecuadamente los cortes
      def obtener_cortes(dgs):
          vl1 =0
          vl2 =0
          if digs%2 !=0:
```

```python
            vl1 = int(dgs/2)
            vl2 = int(dgs/2)+1
        else:
            vl1 = int(dgs/2)
            vl2 = int(dgs/2)
        return val1,val2
def cal_numeros(itrs, vl, dgs):
    sem = int(val)
    aum = obtener_cortes(dgs)
    print("Iteracion", "Xn", "Xn*Xn", "Longitud","Ui","Rn")
    for i in range(itrs):
        xn2= sem**2
        lon = len(str(xn2))
        ui = str(xn2)[int(lon/2)-aum[0]:int(lon/2)+aum[1]]
        rn = int(ui)/10**dgs
        print(i, " ", sem," ",xn2, " ", lon, " ",ui, " ", rn)
        sem=int(ui)
    print("")
```

[20]:
```python
itrs = 16
digs = 4
for i in vals:
    print("i: ", i)
    cal_numeros(itrs, i, digs)
    print("  ")
```

```
i:  3162
ITERACIÓN Xn Xn*Xn Longitud Ui Rn
0    3162    9998244    7    9982    0.9982
1    9982    99640324    8    6403    0.6403
2    6403    40998409    8    9984    0.9984
3    9984    99680256    8    6802    0.6802
4    6802    46267204    8    2672    0.2672
5    2672    7139584    7    1395    0.1395
6    1395    1946025    7    9460    0.946
7    9460    89491600    8    4916    0.4916
8    4916    24167056    8    1670    0.167
9    1670    2788900    7    7889    0.7889
10    7889    62236321    8    2363    0.2363
11    2363    5583769    7    5837    0.5837
12    5837    34070569    8    0705    0.0705
13    705    497025    6    9702    0.9702
14    9702    94128804    8    1288    0.1288
15    1288    1658944    7    6589    0.6589


i:  235929
ITERACIÓN Xn Xn*Xn Longitud Ui Rn
```

```
0    235929    55662493041    11    6249    0.6249
1    6249    39050001    8    0500    0.05
2    500    250000    6    5000    0.5
3    5000    25000000    8    0000    0.0
4    0    0    1    0    0.0
5    0    0    1    0    0.0
6    0    0    1    0    0.0
7    0    0    1    0    0.0
8    0    0    1    0    0.0
9    0    0    1    0    0.0
10    0    0    1    0    0.0
11    0    0    1    0    0.0
12    0    0    1    0    0.0
13    0    0    1    0    0.0
14    0    0    1    0    0.0
15    0    0    1    0    0.0


i:    10.9
ITERACIÓN Xn Xn*Xn Longitud Ui Rn
0    10    100    3    0    0.0
1    0    0    1    0    0.0
2    0    0    1    0    0.0
3    0    0    1    0    0.0
4    0    0    1    0    0.0
5    0    0    1    0    0.0
6    0    0    1    0    0.0
7    0    0    1    0    0.0
8    0    0    1    0    0.0
9    0    0    1    0    0.0
10    0    0    1    0    0.0
11    0    0    1    0    0.0
12    0    0    1    0    0.0
13    0    0    1    0    0.0
14    0    0    1    0    0.0
15    0    0    1    0    0.0


i:    12711006208
ITERACIÓN Xn Xn*Xn Longitud Ui Rn
0    12711006208    161569678819814539264    21    8819    0.8819
1    8819    77774761    8    7747    0.7747
2    7747    60016009    8    0160    0.016
3    160    25600    5    2560    0.256
4    2560    6553600    7    5536    0.5536
5    5536    30647296    8    6472    0.6472
6    6472    41886784    8    8867    0.8867
7    8867    78623689    8    6236    0.6236
```

3

```
8    6236    38887696    8    8876    0.8876
9    8876    78783376    8    7833    0.7833
10   7833    61355889    8    3558    0.3558
11   3558    12659364    8    6593    0.6593
12   6593    43467649    8    4676    0.4676
13   4676    21864976    8    8649    0.8649
14   8649    74805201    8    8052    0.8052
15   8052    64834704    8    8347    0.8347


i:  7610388480
ITERACIÓN Xn Xn*Xn Longitud Ui Rn
0    7610388480    57918012816516710400   20   8165   0.8165
1    8165    66667225    8    6672    0.6672
2    6672    44515584    8    5155    0.5155
3    5155    26574025    8    5740    0.574
4    5740    32947600    8    9476    0.9476
5    9476    89794576    8    7945    0.7945
6    7945    63123025    8    1230    0.123
7    1230    1512900     7    5129    0.5129
8    5129    26306641    8    3066    0.3066
9    3066    9400356     7    4003    0.4003
10   4003    16024009    8    0240    0.024
11   240     57600       5    5760    0.576
12   5760    33177600    8    1776    0.1776
13   1776    3154176     7    1541    0.1541
14   1541    2374681     7    3746    0.3746
15   3746    14032516    8    0325    0.0325


i:  185925
ITERACIÓN Xn Xn*Xn Longitud Ui Rn
0    185925    34568105625    11   6810    0.681
1    6810    46376100    8    3761    0.3761
2    3761    14145121    8    1451    0.1451
3    1451    2105401     7    1054    0.1054
4    1054    1110916     7    1109    0.1109
5    1109    1229881     7    2298    0.2298
6    2298    5280804     7    2808    0.2808
7    2808    7884864     7    8848    0.8848
8    8848    78287104    8    2871    0.2871
9    2871    8242641     7    2426    0.2426
10   2426    5885476     7    8854    0.8854
11   8854    78393316    8    3933    0.3933
12   3933    15468489    8    4684    0.4684
13   4684    21939856    8    9398    0.9398
14   9398    88322404    8    3224    0.3224
15   3224    10394176    8    3941    0.3941
```

```
i:  21041
ITERACIÓN Xn Xn*Xn Longitud Ui Rn
0    21041    442723681   9    2723    0.2723
1    2723     7414729     7    4147    0.4147
2    4147     17197609    8    1976    0.1976
3    1976     3904576     7    9045    0.9045
4    9045     81812025    8    8120    0.812
5    8120     65934400    8    9344    0.9344
6    9344     87310336    8    3103    0.3103
7    3103     9628609     7    6286    0.6286
8    6286     39513796    8    5137    0.5137
9    5137     26388769    8    3887    0.3887
10   3887     15108769    8    1087    0.1087
11   1087     1181569     7    1815    0.1815
12   1815     3294225     7    2942    0.2942
13   2942     8655364     7    6553    0.6553
14   6553     42941809    8    9418    0.9418
15   9418     88698724    8    6987    0.6987


i:  8265
ITERACIÓN Xn Xn*Xn Longitud Ui Rn
0    8265     68310225    8    3102    0.3102
1    3102     9622404     7    6224    0.6224
2    6224     38738176    8    7381    0.7381
3    7381     54479161    8    4791    0.4791
4    4791     22953681    8    9536    0.9536
5    9536     90935296    8    9352    0.9352
6    9352     87459904    8    4599    0.4599
7    4599     21150801    8    1508    0.1508
8    1508     2274064     7    2740    0.274
9    2740     7507600     7    5076    0.5076
10   5076     25765776    8    7657    0.7657
11   7657     58629649    8    6296    0.6296
12   6296     39639616    8    6396    0.6396
13   6396     40908816    8    9088    0.9088
14   9088     82591744    8    5917    0.5917
15   5917     35010889    8    0108    0.0108


i:  261119
ITERACIÓN Xn Xn*Xn Longitud Ui Rn
0    261119   68183132161  11   8313    0.8313
1    8313     69105969    8    1059    0.1059
2    1059     1121481     7    1214    0.1214
3    1214     1473796     7    4737    0.4737
```

```
4    4737    22439169    8    4391    0.4391
5    4391    19280881    8    2808    0.2808
6    2808    7884864     7    8848    0.8848
7    8848    78287104    8    2871    0.2871
8    2871    8242641     7    2426    0.2426
9    2426    5885476     7    8854    0.8854
10   8854    78393316    8    3933    0.3933
11   3933    15468489    8    4684    0.4684
12   4684    21939856    8    9398    0.9398
13   9398    88322404    8    3224    0.3224
14   3224    10394176    8    3941    0.3941
15   3941    15531481    8    5314    0.5314


i:  20127
ITERACIÓN Xn Xn*Xn Longitud Ui Rn
0    20127   405096129   9    5096    0.5096
1    5096    25969216    8    9692    0.9692
2    9692    93934864    8    9348    0.9348
3    9348    87385104    8    3851    0.3851
4    3851    14830201    8    8302    0.8302
5    8302    68923204    8    9232    0.9232
6    9232    85229824    8    2298    0.2298
7    2298    5280804     7    2808    0.2808
8    2808    7884864     7    8848    0.8848
9    8848    78287104    8    2871    0.2871
10   2871    8242641     7    2426    0.2426
11   2426    5885476     7    8854    0.8854
12   8854    78393316    8    3933    0.3933
13   3933    15468489    8    4684    0.4684
14   4684    21939856    8    9398    0.9398
15   9398    88322404    8    3224    0.3224
```

[ ]: