

NumeroPseudoAleatorio

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0.1.1 Generacion de numeros pseudoaleatorios.

Importacion de librerias necesarias.

```
[21]: import cpuinfo
import psutil

temp=56
OxC = 16
nproc = float(cpuinfo.get_cpu_info()['count'])
vel = float(cpuinfo.get_cpu_info()['hz_advertised_friendly'].split(" ")[0])
flops = nproc*vel*OxC
mflops=int(flops*1024)
cpu_uso=psutil.cpu_percent()
ram=psutil.virtual_memory().total
ram_uso=psutil.virtual_memory().used
valores =[temp, mflops, cpu_uso, ram, ram_uso, 185925, 21041, 8265, 261119,
→20127]
```

Declaracion de metodos necesarias.

```
[22]: def get(digs):
    val1 =0
    val2 =0
    if digs%2 !=0:
        val1 = int(digs/2)
        val2 = int(digs/2)+1
    else:
        val1 = int(digs/2)
        val2 = val1
    return val1,val2

def calcular(iters, val, digs):
    x0_semilla = int(val)
    aum = get(digs)
    print("iteracion: ", "xn", "xn*xn", "longitud","ui","rn")
    for i in range(iters):
        xn2= x0_semilla**2
```

```

lon = len(str(xn2))
ui = str(xn2)[int(lon/2)-aum[0]:int(lon/2)+aum[1]]
rn = int(ui)/10**digs
print(i, " ", x0_semilla," ",xn2, " ", lon, " ",ui, " ", rn)
x0_semilla=int(ui)
print(" ")

```

Variables necesarias e implementacion.

```

[23]: iters = 16
digs = 4
for i in valores:
    print("i: ", i)
    calcular(iters, i, digs)
    print(" ")

```

```

i: 56
iteracion:  xn xn*xn longitud ui rn
0  56  3136  4  3136  0.3136
1  3136  9834496  7  8344  0.8344
2  8344  69622336  8  6223  0.6223
3  6223  38725729  8  7257  0.7257
4  7257  52664049  8  6640  0.664
5  6640  44089600  8  0896  0.0896
6  896  802816  6  0281  0.0281
7  281  78961  5  7896  0.7896
8  7896  62346816  8  3468  0.3468
9  3468  12027024  8  0270  0.027
10  270  72900  5  7290  0.729
11  7290  53144100  8  1441  0.1441
12  1441  2076481  7  0764  0.0764
13  764  583696  6  8369  0.8369
14  8369  70040161  8  0401  0.0401
15  401  160801  6  6080  0.608

```

```

i: 367001
iteracion:  xn xn*xn longitud ui rn
0  367001  134689734001  12  8973  0.8973
1  8973  80514729  8  5147  0.5147
2  5147  26491609  8  4916  0.4916
3  4916  24167056  8  1670  0.167
4  1670  2788900  7  7889  0.7889
5  7889  62236321  8  2363  0.2363
6  2363  5583769  7  5837  0.5837
7  5837  34070569  8  0705  0.0705
8  705  497025  6  9702  0.9702

```

9	9702	94128804	8	1288	0.1288
10	1288	1658944	7	6589	0.6589
11	6589	43414921	8	4149	0.4149
12	4149	17214201	8	2142	0.2142
13	2142	4588164	7	5881	0.5881
14	5881	34586161	8	5861	0.5861
15	5861	34351321	8	3513	0.3513

i: 23.5

iteracion: xn xn*xn longitud ui rn

0	23	529	3	9	0.0009
1	9	81	2	1	0.0001
2	1	1	1	1	0.0001
3	1	1	1	1	0.0001
4	1	1	1	1	0.0001
5	1	1	1	1	0.0001
6	1	1	1	1	0.0001
7	1	1	1	1	0.0001
8	1	1	1	1	0.0001
9	1	1	1	1	0.0001
10	1	1	1	1	0.0001
11	1	1	1	1	0.0001
12	1	1	1	1	0.0001
13	1	1	1	1	0.0001
14	1	1	1	1	0.0001
15	1	1	1	1	0.0001

i: 17134493696

iteracion: xn xn*xn longitud ui rn

0	17134493696	293590874218263740416	21	4218	0.4218
1	4218	17791524	8	7915	0.7915
2	7915	62647225	8	6472	0.6472
3	6472	41886784	8	8867	0.8867
4	8867	78623689	8	6236	0.6236
5	6236	38887696	8	8876	0.8876
6	8876	78783376	8	7833	0.7833
7	7833	61355889	8	3558	0.3558
8	3558	12659364	8	6593	0.6593
9	6593	43467649	8	4676	0.4676
10	4676	21864976	8	8649	0.8649
11	8649	74805201	8	8052	0.8052
12	8052	64834704	8	8347	0.8347
13	8347	69672409	8	6724	0.6724
14	6724	45212176	8	2121	0.2121
15	2121	4498641	7	4986	0.4986

i: 7260712960

iteracion: xn xn*xn longitud ui rn

0	7260712960	52717952687511961600	20	6875	0.6875
1	6875	47265625	8	2656	0.2656
2	2656	7054336	7	0543	0.0543
3	543	294849	6	9484	0.9484
4	9484	89946256	8	9462	0.9462
5	9462	89529444	8	5294	0.5294
6	5294	28026436	8	0264	0.0264
7	264	69696	5	6969	0.6969
8	6969	48566961	8	5669	0.5669
9	5669	32137561	8	1375	0.1375
10	1375	1890625	7	8906	0.8906
11	8906	79316836	8	3168	0.3168
12	3168	10036224	8	0362	0.0362
13	362	131044	6	3104	0.3104
14	3104	9634816	7	6348	0.6348
15	6348	40297104	8	2971	0.2971

i: 185925

iteracion: 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

iteracion: 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

iteracion:	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

iteracion:	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

iteracion:	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

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