Nombre: Jorge Arévalo

Docente: Ing. Diego Quisi

Materia: Simulación

In [14]:

```
import wmi
w = wmi.WMI(namespace="root\wmi")
temp=w.MSAcpi_ThermalZoneTemperature()[0].CurrentTemperature
```

In [15]:

```
OxC = 8
import cpuinfo
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)

import psutil
cpu_uso=psutil.cpu_percent()
ram=psutil.virtual_memory().total
ram_uso=psutil.virtual_memory().used
```

In [16]:

```
valores =[temp, mflops, cpu_uso, ram, ram_uso,  175934, 31541, 7356, 742118, 11427]

def obtener_pos(digs):
    valor1 =0
    valor2 =0
    if digs%2 !=0:
        valor1 = int(digs/2)
        valor2 = int(digs/2)+1
    else:
        valor1 = int(digs/2)
        valor2 = int(digs/2)
    return valor1,valor2

def calcular_num(iters, val, digs):
    x0_semilla = int(val)
    aum = obtener_pos(digs)
    print(" Iteración ", " 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("   ")

iters = 16
digs = 4
for i in valores:
    print("i: ", i)
    calcular_num(iters, i, digs)
    print("  ")
```

```
i:  3522
 Iteración   Xn   Xn*Xn  Longitud   Ui   Rn
0   3522   12404484   8   4044   0.4044
1   4044   16353936   8   3539   0.3539
2   3539   12524521   8   5245   0.5245
3   5245   27510025   8   5100   0.51
4   5100   26010000   8   0100   0.01
5   100   10000   5   1000   0.1
6   1000   1000000   7   0000   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:  216268
 Iteración   Xn   Xn*Xn  Longitud   Ui   Rn
0   216268   46771847824   11   7184   0.7184
1   7184   51609856   8   6098   0.6098
2   6098   37185604   8   1856   0.1856
```

3	1856	3444736	7	4447	0.4447
4	4447	19775809	8	7758	0.7758
5	7758	60186564	8	1865	0.1865
6	1865	3478225	7	4782	0.4782
7	4782	22867524	8	8675	0.8675
8	8675	75255625	8	2556	0.2556
9	2556	6533136	7	5331	0.5331
10	5331	28419561	8	4195	0.4195
11	4195	17598025	8	5980	0.598
12	5980	35760400	8	7604	0.7604
13	7604	57820816	8	8208	0.8208
14	8208	67371264	8	3712	0.3712
15	3712	13778944	8	7789	0.7789

i: 10.3

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: 34279542784

Iteración	Xn	Xn*Xn	Longitud	Ui	Rn
0	34279542784	1175087053480086470656	22	3480	0.348
1	3480	12110400	8	1104	0.1104
2	1104	1218816	7	2188	0.2188
3	2188	4787344	7	7873	0.7873
4	7873	61984129	8	9841	0.9841
5	9841	96845281	8	8452	0.8452
6	8452	71436304	8	4363	0.4363
7	4363	19035769	8	0357	0.0357
8	357	127449	6	2744	0.2744
9	2744	7529536	7	5295	0.5295
10	5295	28037025	8	0370	0.037
11	370	136900	6	3690	0.369
12	3690	13616100	8	6161	0.6161
13	6161	37957921	8	9579	0.9579
14	9579	91757241	8	7572	0.7572
15	7572	57335184	8	3351	0.3351

i: 10325004288

Iteración	Xn	Xn*Xn	Longitud	Ui	Rn
0	10325004288	106605713547218386944	21	3547	0.3547
1	3547	12581209	8	5812	0.5812
2	5812	33779344	8	7793	0.7793
3	7793	60730849	8	7308	0.7308

4	7308	53406864	8	4068	0.4068
5	4068	16548624	8	5486	0.5486
6	5486	30096196	8	0961	0.0961
7	961	923521	6	2352	0.2352
8	2352	5531904	7	5319	0.5319
9	5319	28291761	8	2917	0.2917
10	2917	8508889	7	5088	0.5088
11	5088	25887744	8	8877	0.8877
12	8877	78801129	8	8011	0.8011
13	8011	64176121	8	1761	0.1761
14	1761	3101121	7	1011	0.1011
15	1011	1022121	7	0221	0.0221

i: 175934

Iteración	Xn	Xn*Xn	Longitud	Ui	Rn
0	175934	30952772356	11	5277	0.5277
1	5277	27846729	8	8467	0.8467
2	8467	71690089	8	6900	0.69
3	6900	47610000	8	6100	0.61
4	6100	37210000	8	2100	0.21
5	2100	4410000	7	4100	0.41
6	4100	16810000	8	8100	0.81
7	8100	65610000	8	6100	0.61
8	6100	37210000	8	2100	0.21
9	2100	4410000	7	4100	0.41
10	4100	16810000	8	8100	0.81
11	8100	65610000	8	6100	0.61
12	6100	37210000	8	2100	0.21
13	2100	4410000	7	4100	0.41
14	4100	16810000	8	8100	0.81
15	8100	65610000	8	6100	0.61

i: 31541

Iteración	Xn	Xn*Xn	Longitud	Ui	Rn
0	31541	994834681	9	4834	0.4834
1	4834	23367556	8	3675	0.3675
2	3675	13505625	8	5056	0.5056
3	5056	25563136	8	5631	0.5631
4	5631	31708161	8	7081	0.7081
5	7081	50140561	8	1405	0.1405
6	1405	1974025	7	9740	0.974
7	9740	94867600	8	8676	0.8676
8	8676	75272976	8	2729	0.2729
9	2729	7447441	7	4474	0.4474
10	4474	20016676	8	0166	0.0166
11	166	27556	5	2755	0.2755
12	2755	7590025	7	5900	0.59
13	5900	34810000	8	8100	0.81
14	8100	65610000	8	6100	0.61
15	6100	37210000	8	2100	0.21

i: 7356

Iteración	Xn	Xn*Xn	Longitud	Ui	Rn
0	7356	54110736	8	1107	0.1107
1	1107	1225449	7	2254	0.2254
2	2254	5080516	7	0805	0.0805
3	805	648025	6	4802	0.4802
4	4802	23059204	8	0592	0.0592

5	592	350464	6	5046	0.5046
6	5046	25462116	8	4621	0.4621
7	4621	21353641	8	3536	0.3536
8	3536	12503296	8	5032	0.5032
9	5032	25321024	8	3210	0.321
10	3210	10304100	8	3041	0.3041
11	3041	9247681	7	2476	0.2476
12	2476	6130576	7	1305	0.1305
13	1305	1703025	7	7030	0.703
14	7030	49420900	8	4209	0.4209
15	4209	17715681	8	7156	0.7156

i: 742118

Iteración	Xn	Xn*Xn	Longitud	Ui	Rn
0	742118	550739125924	12	3912	0.3912
1	3912	15303744	8	3037	0.3037
2	3037	9223369	7	2233	0.2233
3	2233	4986289	7	9862	0.9862
4	9862	97259044	8	2590	0.259
5	2590	6708100	7	7081	0.7081
6	7081	50140561	8	1405	0.1405
7	1405	1974025	7	9740	0.974
8	9740	94867600	8	8676	0.8676
9	8676	75272976	8	2729	0.2729
10	2729	7447441	7	4474	0.4474
11	4474	20016676	8	0166	0.0166
12	166	27556	5	2755	0.2755
13	2755	7590025	7	5900	0.59
14	5900	34810000	8	8100	0.81
15	8100	65610000	8	6100	0.61

i: 11427

Iteración	Xn	Xn*Xn	Longitud	Ui	Rn
0	11427	130576329	9	0576	0.0576
1	576	331776	6	3177	0.3177
2	3177	10093329	8	0933	0.0933
3	933	870489	6	7048	0.7048
4	7048	49674304	8	6743	0.6743
5	6743	45468049	8	4680	0.468
6	4680	21902400	8	9024	0.9024
7	9024	81432576	8	4325	0.4325
8	4325	18705625	8	7056	0.7056
9	7056	49787136	8	7871	0.7871
10	7871	61952641	8	9526	0.9526
11	9526	90744676	8	7446	0.7446
12	7446	55442916	8	4429	0.4429
13	4429	19616041	8	6160	0.616
14	6160	37945600	8	9456	0.9456
15	9456	89415936	8	4159	0.4159