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CSE 5441 – Lab# 1 Report

Test Cases

Test Case 1

File – testgird_1, Learning Rate = 0.1, Affect Rate = 0.1

```
*****
dissipation converged in 52 iterations,
    with max DSV = 118.918450 and min DSV = 107.278672
    affect rate = 0.100000    epsilon = 0.100000
elapsed convergence loop time (clock) : 0
elapsed convergence loop time (time) : 0
elapsed convergence loop time (chrono) : 9.9
*****

real  0m0.018s
user  0m0.000s
sys   0m0.002s
```

Test Case 2

File – testgird_2, Learning Rate = 0.1, Affect Rate = 0.1

```
*****
dissipation converged in 245 iterations,
    with max DSV = 55.835885 and min DSV = 50.266851
    affect rate = 0.100000    epsilon = 0.100000

elapsed convergence loop time (clock) : 0
elapsed convergence loop time (time) : 0
elapsed convergence loop time (chrono) : 240.5
*****

real  0m0.013s
user  0m0.002s
sys   0m0.001s
```

Test Case 3

File – testgird_50_78, Learning Rate = 0.1, Affect Rate = 0.1

dissipation converged in 1508 iterations,
with max DSV = 23.369508 and min DSV = 21.035843
affect rate = 0.100000 epsilon = 0.100000

elapsed convergence loop time (clock) : 0
elapsed convergence loop time (time) : 0
elapsed convergence loop time (chrono) : 2732.4

real 0m0.016s
user 0m0.004s
sys 0m0.001s

Test Case 4

File – testgird_50_201, Learning Rate = 0.1, Affect Rate = 0.1

dissipation converged in 2286 iterations,
with max DSV = 4.788754 and min DSV = 4.309887
affect rate = 0.100000 epsilon = 0.100000

elapsed convergence loop time (clock) : 10000
elapsed convergence loop time (time) : 0
elapsed convergence loop time (chrono) : 11380.8

real 0m0.025s
user 0m0.012s
sys 0m0.002s

Test Case 5

File – testgird_200_116, Learning Rate = 0.1, Affect Rate = 0.1

dissipation converged in 14458 iterations,
with max DSV = 0.812728 and min DSV = 0.731459
affect rate = 0.100000 epsilon = 0.100000

elapsed convergence loop time (clock) : 480000
elapsed convergence loop time (time) : 1
elapsed convergence loop time (chrono) : 488108.8

real 0m0.499s
user 0m0.485s
sys 0m0.001s

Test Case 6

File – testgird_400_1636, Learning Rate = 0.1, Affect Rate = 0.1

dissipation converged in 22280 iterations,
with max DSV = 1.181786 and min DSV = 1.063610
affect rate = 0.100000 epsilon = 0.100000

elapsed convergence loop time (clock) : 1130000
elapsed convergence loop time (time) : 1
elapsed convergence loop time (chrono) : 1165851.4

real 0m1.202s
user 0m1.142s
sys 0m0.000s

Test Case 7

File – testgrid_400_12206, Learning Rate = 0.1, Affect Rate = 0.1

dissipation converged in 75197 iterations,
with max DSV = 0.086671 and min DSV = 0.078004
affect rate = 0.100000 epsilon = 0.100000

elapsed convergence loop time (clock) : 33080000
elapsed convergence loop time (time) : 33
elapsed convergence loop time (chrono) : 33545557.3

real 0m33.605s
user 0m33.114s
sys 0m0.027s

Test Case 8 – running for more than 3 minutes

File – testgrid_400_12206, Learning Rate = 0.03, Affect Rate = 0.03

dissipation converged in 434142 iterations,
with max DSV = 0.084946 and min DSV = 0.082397
affect rate = 0.030000 epsilon = 0.030000

elapsed convergence loop time (clock) : 191100000
elapsed convergence loop time (time) : 193
elapsed convergence loop time (chrono) : 192843549.0

real 3m12.902s
user 3m11.030s
sys 0m0.132s

Summary of Timing Results

I have used here four different types of timing modules. **Clock** timing provides the number of clock ticks taken by the program to run to execution. It is equivalent to the 'user' time given by the UNIX 'time' utility and is not useful for profiling programs that may incur latencies due to the bus or network communication. **Time** provides the number of seconds taken by the program to execute and is not ideal for profiling program performance due to higher granularity. It is like 'real' time output of the UNIX 'time' utility. With **Chrono**, I have used real time and hence it outputs the execution time in milliseconds.