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REPORT FOR PROGRAM-1

5441 is output file
0.01 is Epsilon
0.01 is affectrate
testgrid1 is input file.(Path /program)

1) For testgrid_1:

[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$ ./5441 0.01 0.1 < /program/testgrid_1

****

dissipation converged in 536 iterations, with max DSV = 119.105012 and min DSV = 107.215249

affectrate =0.010000 ;   epsilon=0.100000

Elapsed converged loop-time (clock) : 0

Elapsed converged loop-time (time) : 0

Elapsed converged loop-time (chrono) : 1506481112000000
****

[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$

2) For testgrid_2:

[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$ ./5441 0.01 0.1 < /program/testgrid_2

****

dissipation converged in 2456 iterations, with max DSV = 55.831883 and min DSV = 50.248946

affectrate =0.010000 ;   epsilon=0.100000

Elapsed converged loop-time (clock) : 0

Elapsed converged loop-time (time) : 0

Elapsed converged loop-time (chrono) : 1506481315000000
****

[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$

3) For testgrid_50_78:

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[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$ ./5441 0.01 0.1 < /program/testgrid_50_78

****

dissipation converged in 15091 iterations, with max DSV = 23.371246 and min DSV = 21.034281
affectrate =0.010000 ;   epsilon=0.100000

Elapsed converged loop-time (clock) : 30000

Elapsed converged loop-time (time) : 0

Elapsed converged loop-time (chrono) : 1506481430000000
****

[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$

4) For testgrid_50_201:

[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$ ./5441 0.01 0.1 < /program/testgrid_50_201

****

dissipation converged in 22870 iterations, with max DSV = 4.788707 and min DSV = 4.309853

affectrate =0.010000 ;   epsilon=0.100000

Elapsed converged loop-time (clock) : 130000

Elapsed converged loop-time (time) : 0

Elapsed converged loop-time (chrono) : 1506481475000000
****
[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$

5) For testgrid_200_1166:

[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$ ./5441 0.01 0.1 < /program/testgrid_200_1166

****

dissipation converged in 144586 iterations, with max DSV = 0.812727 and min DSV = 0.731455
affectrate =0.010000 ;   epsilon=0.100000

Elapsed converged loop-time (clock) : 5070000

Elapsed converged loop-time (time) : 5

Elapsed converged loop-time (chrono) : 1506481582000000
****
[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$

6) For testgrid_400_1636:

[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$ ./5441 0.01 0.1 < /program/testgrid_400_1636

****

dissipation converged in 222804 iterations, with max DSV = 1.181782 and min DSV = 1.063604

affectrate =0.010000 ;   epsilon=0.100000

Elapsed converged loop-time (clock) : 11090000

Elapsed converged loop-time (time) : 12

Elapsed converged loop-time (chrono) : 1506481690000000
****

7) For testgrid_400_12206:

[naveentumkurrameshbabu.1@sl3 cse5441_lab1]$ ./5441 0.01 0.1 < /program/testgrid_400_12206

****

dissipation converged in 751978 iterations, with max DSV = 0.086671 and min DSV = 0.078004

affectrate =0.010000 ;   epsilon=0.100000

Elapsed converged loop-time (clock) : 286090000

Elapsed converged loop-time (time) : 288

Elapsed converged loop-time (chrono) : 1506482021000000
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Summary of Timing Results:
The timings for testgrid_400_12206 for epsilon=0.1 affect-rate=0.01 is 288 sec while timing for testgrid_400_12206 for epsilon=0.1 and affect-rate=0.05 is 57 sec .

Timing table:-

Test Grid	Affect Rate	Epsilon	Iteration	Converged loop time
testgrid_1	0.01	0.1	536	0 sec
testgrid_2	0.01	0.1	2456	0 sec
testgrid_50_78	0.01	0.1	15091	0 sec
testgrid_50_201	0.01	0.1	22870	0 sec
testgrid_200_1166	0.01	0.1	144586	5 sec
testgrid_200_1636	0.01	0.1	222804	12 sec
testgrid_400_12206	0.01	0.1	751978	288 sec

When the data set is large, small increment of epsilon causes huge impact in time and iteration.