```
run:
Enter 1 for PSO, Enter 2 for random: 2
Enter how many runs you would like to perform: 10
Best Random Fitness of run 0: 378.20463207331574
Best Random Fitness of run 1: 345.1138961036599
Best Random Fitness of run 2: 360.85971495548046
Best Random Fitness of run 3: 352.85755334233875
Best Random Fitness of run 4: 365.42491807883874
Best Random Fitness of run 5: 416.3172456360467
Best Random Fitness of run 6: 397.2683587045096
Best Random Fitness of run 7: 407.40435889024326
Best Random Fitness of run 8: 360.2352198006024
Best Random Fitness of run 9: 366.9462419874186
Global Best Random Fitness: 345.1138961036599
Mean: 375.0632139572454
Standard Deviation: 22.850001150110252
Median: 366.9462419874186
BUILD SUCCESSFUL (total time: 4 seconds)

run:
Enter 1 for PSO, Enter 2 for random: 1
Enter how many runs you would like to perform: 10
Enter your w value: 0.729844
Enter your c1 value: 1.496180
Enter your c2 value: 1.496180
Calculating, please wait...
Best Fitness of run 1: 82.58125298985848
Calculating next run...
Best Fitness of run 2: 60.69234590021202
Calculating next run...
Best Fitness of run 3: 37.80841394263109
Calculating next run...
Best Fitness of run 4: 59.697427419447195
Calculating next run...
Best Fitness of run 5: 73.62681387076267
Calculating next run...
Best Fitness of run 6: 65.66709071724244
Calculating next run...
Best Fitness of run 7: 74.62177292789627
Calculating next run...
Best Fitness of run 8: 80.59147661845282
Calculating next run...
Best Fitness of run 9: 63.67729900342795
Calculating next run...
Best Fitness of run 10: 67.65704418640743
After 5000 iterations and 10 runs:
Mean: 66.66209375763384
Standard Deviation: 12.193766518073614
Median: 67.65704418640743
BUILD SUCCESSFUL (total time: 2 minutes 19 seconds)

run:
Enter 1 for PSO, Enter 2 for random: 1
Enter how many runs you would like to perform: 10
Enter your w value: 0.4
Enter your c1 value: 1.2
Enter your c2 value: 1.2
Calculating, please wait...
Best Fitness of run 1: 168.49387059221732
Calculating next run...
Best Fitness of run 2: 98.88158194778183
Calculating next run...
Best Fitness of run 3: 92.96826155820992
Calculating next run...
Best Fitness of run 4: 117.06880887941716
Calculating next run...
Best Fitness of run 5: 123.07880955581624
Calculating next run...
Best Fitness of run 6: 109.88082906440422
```

```
 70    Calculating next run...
 71    Best Fitness of run 7: 119.7952882286038
 72    Calculating next run...
 73    Best Fitness of run 8: 160.37070476566208
 74    Calculating next run...
 75    Best Fitness of run 9: 136.7944060824446
 76    Calculating next run...
 77    Best Fitness of run 10: 163.91134590196873
 78    After 5000 iterations and 10 runs:
 79    Mean: 129.1243906576526
 80    Standard Deviation: 25.79995262661139
 81    Median: 123.07880955581624
 82    BUILD SUCCESSFUL (total time: 2 minutes 12 seconds)
 83
 84    run:
 85    Enter 1 for PSO, Enter 2 for random: 1
 86    Enter how many runs you would like to perform: 10
 87    Enter your w value: 1.0
 88    Enter your c1 value: 2.0
 89    Enter your c2 value: 2.0
 90    Calculating, please wait...
 91    Best Fitness of run 1: 359.78581331566244
 92    Calculating next run...
 93    Best Fitness of run 2: 356.8450674828842
 94    Calculating next run...
 95    Best Fitness of run 3: 394.9105255564654
 96    Calculating next run...
 97    Best Fitness of run 4: 398.6422063892476
 98    Calculating next run...
 99    Best Fitness of run 5: 379.33522627107396
100    Calculating next run...
101    Best Fitness of run 6: 393.2413704355466
102    Calculating next run...
103    Best Fitness of run 7: 397.1499620473908
104    Calculating next run...
105    Best Fitness of run 8: 347.2810872046364
106    Calculating next run...
107    Best Fitness of run 9: 380.2450870686988
108    Calculating next run...
109    Best Fitness of run 10: 310.0643731244039
110    After 5000 iterations and 10 runs:
111    Mean: 371.75007188960103
112    Standard Deviation: 26.954559870932165
113    Median: 380.2450870686988
114    BUILD SUCCESSFUL (total time: 1 minute 30 seconds)
115
116    run:
117    Enter 1 for PSO, Enter 2 for random: 1
118    Enter how many runs you would like to perform: 10
119    Enter your w value: -1.0
120    Enter your c1 value: 2.0
121    Enter your c2 value: 2.0
122    Calculating, please wait...
123    Best Fitness of run 1: 377.9117843116953
124    Calculating next run...
125    Best Fitness of run 2: 375.0393002457795
126    Calculating next run...
127    Best Fitness of run 3: 429.74664136226727
128    Calculating next run...
129    Best Fitness of run 4: 382.7203550782384
130    Calculating next run...
131    Best Fitness of run 5: 393.18103455811706
132    Calculating next run...
133    Best Fitness of run 6: 339.78674463036003
134    Calculating next run...
135    Best Fitness of run 7: 385.5999629194927
136    Calculating next run...
137    Best Fitness of run 8: 402.8193987503847
138    Calculating next run...
```

```
Best Fitness of run 9: 355.8089460399636
Calculating next run...
Best Fitness of run 10: 361.52409316165534
After 5000 iterations and 10 runs:
Mean: 380.41382610579535
Standard Deviation: 24.039304635540642
Median: 382.7203550782384
BUILD SUCCESSFUL (total time: 1 minute 38 seconds)
```