OBJECTIVE : To be able to generate new solution using firefly algorithm operator

OUTPUT : Source code and Short-Write ups with screenshots

TYPE OF PROJECT: Individual or Pair only

PROGRAM SPECIFICATIONS

1. Use the griewank function with dimension 5 as test function for this lab exercise.
2. Generate 10 fireflies as a population of solutions using pseudorandom number generator. After sorting, only try to compare the attractive (xj) and the least attractive firefly (xi) like what was done in the lecture notes/video. You may use the source code as presented in the lecture video.
3. Implement the Firefly Algorithm operator using the following parameter values. Please note that you will need to run the algo for EACH parameter setting below.

   Test for β_0

	Param Setting 1	Param Setting 2
T	1.0	1.0
Attractiveness param (β_0)	1.0	10.0
Levy Flight Param λ	2.0	2.0
Light absorption coeff (γ)	1.0	1.0

   Test for γ

	Param Setting 1	Param Setting 2
T	1.0	1.0
Attractiveness param (β_0)	2.0	2.0
Levy Flight Param λ	2.0	2.0
Light absorption coeff (γ)	1.0	5.0

   Test for λ

	Param Setting 1	Param Setting 2
T	1.0	1.0
Attractiveness param (β_0)	2.0	2.0
Levy Flight Param λ	2.0	10.0
Light absorption coeff (γ)	1.0	1.0

4. Provide analysis for the various parameter settings above. All answers below SHOULD be saved in the pdf file with the ff filename specs <familyname>_firefly.pdf (e.g. gamot_ firefly.pdf).
   a. Run Test for β_0 Param Setting 1 for 5 times. Observe the fitness value of the old and the new firefly. Make a generalization on its performance based on the 5 runs that you conducted. Does increasing the Attractiveness parameter generally improve performance? Include the screenshots of old and new positions and fitness values for each of the 5 runs per parameter setting. Please see time 5:03

of the lecture video on what to screenshot. For the screenshot, you should have 10 screenshots in this section (5 per param setting)

b. Do the same experiment using the "Test for γ" table of parameters. Does increasing the light absorption coeff parameter generally improve performance? Provide screenshots as instructed above as well.
c. Do the same experiment using the "Test for λ" table of parameters. Does increasing the Levy Flight parameter generally improve performance? Provide screenshots as instructed above as well.

5. Submit the source code as well with the ff filename spec <familyname>_ firefly.py (e.g. gamot_firefly.py)
6. Zip the pdf and the python code in one file and submit in our LMS on or before the deadline date.