Prerequisite for Use:

1) Ensure that files GUIRunner.py and DLA.py are in the same directory, on the same level of the directory hierarchy.
    a. Generic file path might be: C:\Users\User\.spyder-py3\Project
2) Ensure that you are using a Windows system, if you are not using a windows system please comment out the following lines of code:
    a. 17
    b. 72
    c. 87
    d. 128
    e. 132
    f. 139
    g. 250
    h. 256
3) Open and run both files as administrator or grant both files the permissions to read, write and open files to/from the directory.

Directions for use:

Upon running the program, you will be greeted by the Graphical User Interface (GUI) that has been custom built for this application.

A) Background colour

B) Line/Walker colour.

C) Whether you would like a GIF of the aggregation to be recorded and saved to the directory or just an image to be made.

D) Various seed shape types

E) User can introduce a bias in the x-axis direction.

Max walkers refers to the max number of particles/random walkers you would like to be introduced into the system, when this number is reached the aggregation ends.

Bias Amount refers to the amount of bias you would like to introduce to the system. System only supports bias in the x-direction. Slider can vary between -0.5 and 0.5. By convention, the right-hand side is positive, so a bias of 0.5 means a bias of 100% towards the right-hand side, and a bias of -0.5 means a bias of 100% to the left-hand side. Important to note that this only comes into effect if you select the x-Axis bias option in column E.

Probability is always active but is initialised at 1 (100% chance), probability is the flocculation chance, i.e., the chance that a random walker will stick to a particle that it neighbours. Slider ranges from 0 to 1, meaning a sticking chance of 0% to a sticking chance of 100%

Radius is the maximum radius that the cluster can take, note that if there are not enough walkers to reach this, it will not be reached.

The Radio buttons in blue gives the user the choice between the system just producing a cluster with no analysis of fractional dimensionality or producing a series of clusters with increasing radius up to the maximum radius and then Fractional Dimensionality analysis is completed.