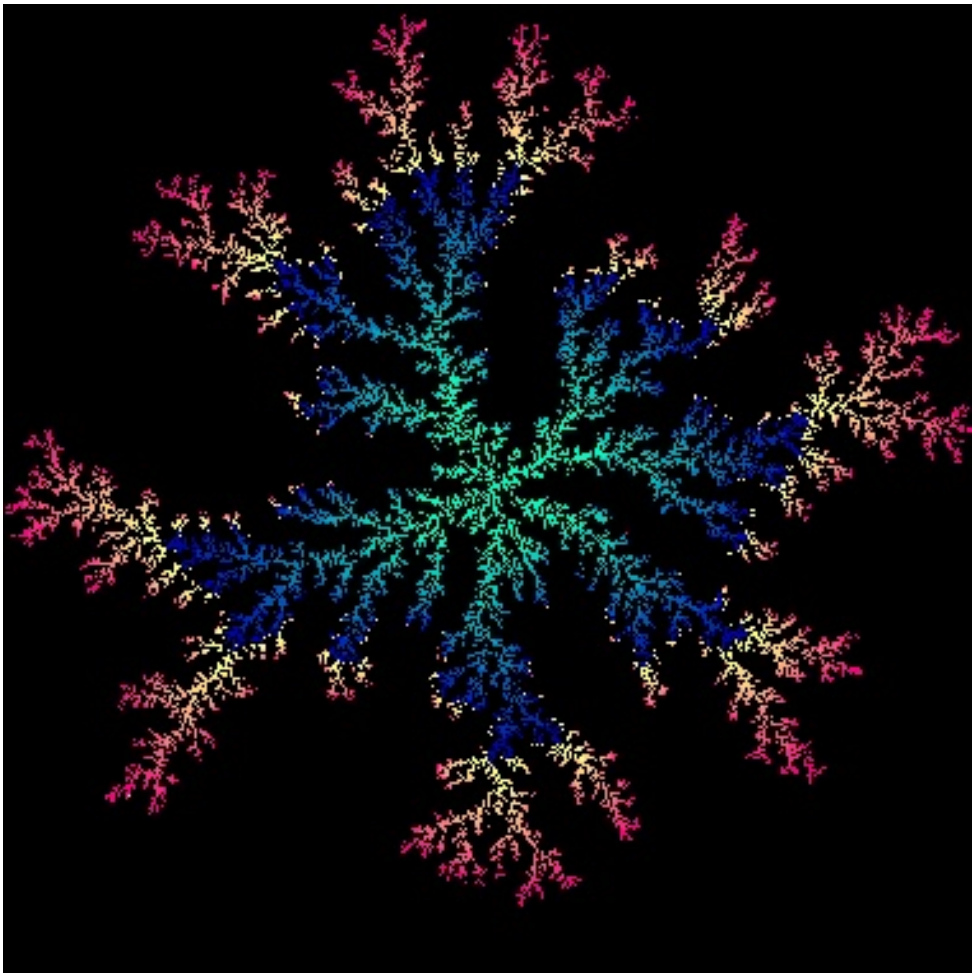
Apple Bread Challenge[2]

Challenge 3:
Due Date: March 30th, 2024 (via email)

This is an open ended challenge. We shall simulate Diffusion Limited Aggregation, a cluster growth model in $\mathbb{Z}^2$. Start with an initial seed 0 in $\mathbb{Z}^2$. Then, one by one, particles get released "at infinity" (say far away like distance "100" or "50") and perform nearest-neighbor random walks as in challenge 1, until they attach at the first site visited which is adjacent to the existing cluster.

1. Define the model precisely on $\mathbb{Z}^2$.
2. Either using your own and/or http://cfbrasz.github.io/DLA.html present an algorithm to simulate the model.
3. Can you reproduce the cluster's picture below ? (your best guess for the colours)



[2]This is last-part of the challenge. If I get a complete solution to the three-part challenge [From 5 students] by due dates then I will bake apple bread for everyone in class who has 90% attendance. The skill set developed in the previous two challenges will be useful, everyone who has not done the previous two is welcome to participate.