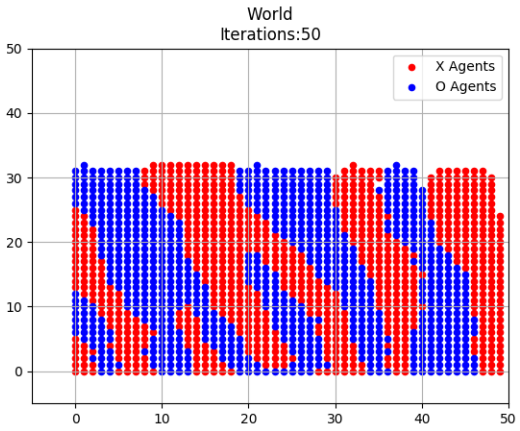
Demonstration of Homophily by Schelling's Segregation Model:

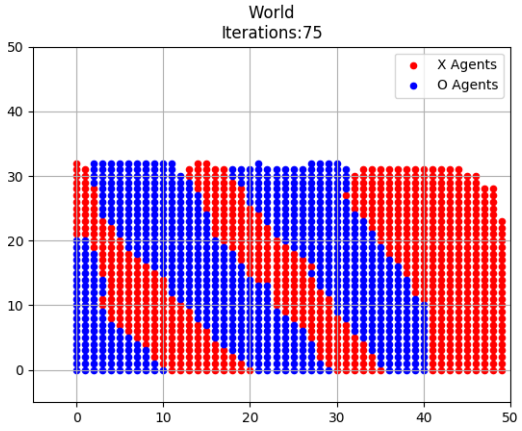
Theory and Importance:
In swarm intelligence, one part of the study is to understand how people in society behave in a specific way. One such concept of homophily is represented here. Homophily is the tendency of individuals to bond and connect with similar other people. A good example of this is the formation of geographical areas with similar race of people.

Method Used:
The world is assumed to be populated by 800 agents of two subclasses. There will be 8 neighbours to each agent. An agent is said to be unsatisfied if he is not surrounded by at least 3 people of his own kind. In other words, three-eighth of his neighbours should be of his kind, which seems pretty much reasonable. But even in this case we can see that clustering happens. This model explains why it is very hard to break homophily and clustering of people.

Sofwares Used:
The model is implemented in python 3.5.2
The version of numpy package is 1.14.0
The version of matplotlib package is 2.1.2

Results:





Conclusion:
The Successive iterations of the model shows the formation of clusters between the same group. If continued for more number of iterations, likely to form two big clusters. This shows that over time, we can see that formation of geographical locations with people of similar kind and this is very hard problem to solve in real life.