Run mainfunction.m to simulate the convergence of agents.

Green points are fault-free robots, they will achieve convergence; red points are faulty ones, they are stationary. Fault-free robots use a disk sensing range to identify neighbors, but they cannot distinguish faulty robots from fault-free ones. The algorithm is an improved one of ADRC-Sync algorithm.

Simulation will terminate in 20 stages, but you can terminate it anytime by pressing "ctrl+c".

n represents the number of fault-free robots, and nf is faults. You can change the magnitude of n and nf to be greater, but the simulation time will be increased. And also there is an assumption about the relationship between n and nf, please refer to the class report.

Some values you can choose:
(n = 10; nf = 2), (n = 20; nf = 4), (n = 30; nf = 8)

Also please note that the convergence may not be exactly one point, but may seem like this:  or this:  . It is not error, but the convergence compactness l set. You can set delta to be 0.002 so as to achieve perfect one-point rendezvous, but the price is 25 times longer simulation time. Currently, delta is set to be 0.01.