import random

import matplotlib

from matplotlib import pyplot as plt

import operator

# Set parameters

random.seed(0)

n\_agents = 10

n\_ite = 5

# Initialise agents list

agents = []

for i in range(n\_agents):

agents.append([random.randint(0, 99), random.randint(0, 99)])

print(agents)

for j in range(n\_ite):

# Move agents

for i in range(n\_agents):

rn = random.random()

#print("rn", rn)

if rn < 0.5:

agents[i][0] = agents[i][0] + 1

else:

agents[i][0] = agents[i][0] - 1

#print("x", agents[i][0])

rn = random.random()

#print("rn", rn)

if rn < 0.5:

agents[i][1] = agents[i][1] + 1

else:

agents[i][1] = agents[i][1] - 1

#print("y", agents[i][1])

print(agents)

# Plot

for i in range(n\_agents):

plt.scatter(agents[i][0], agents[i][1], color='black')

# Plot right red

r = max(agents, key=operator.itemgetter(0))

print(r)

plt.scatter(r[0], r[1], color='red')

# Plot left yellow

l = min(agents, key=operator.itemgetter(0))

print(l)

plt.scatter(l[0], l[1], color='yellow')

# Plot top green

t = max(agents, key=operator.itemgetter(1))

print(t)

plt.scatter(t[0], t[1], color='green')

# Plot bottom pink

b = min(agents, key=operator.itemgetter(1))

print(b)

plt.scatter(b[0], b[1], color='pink')

plt.show()