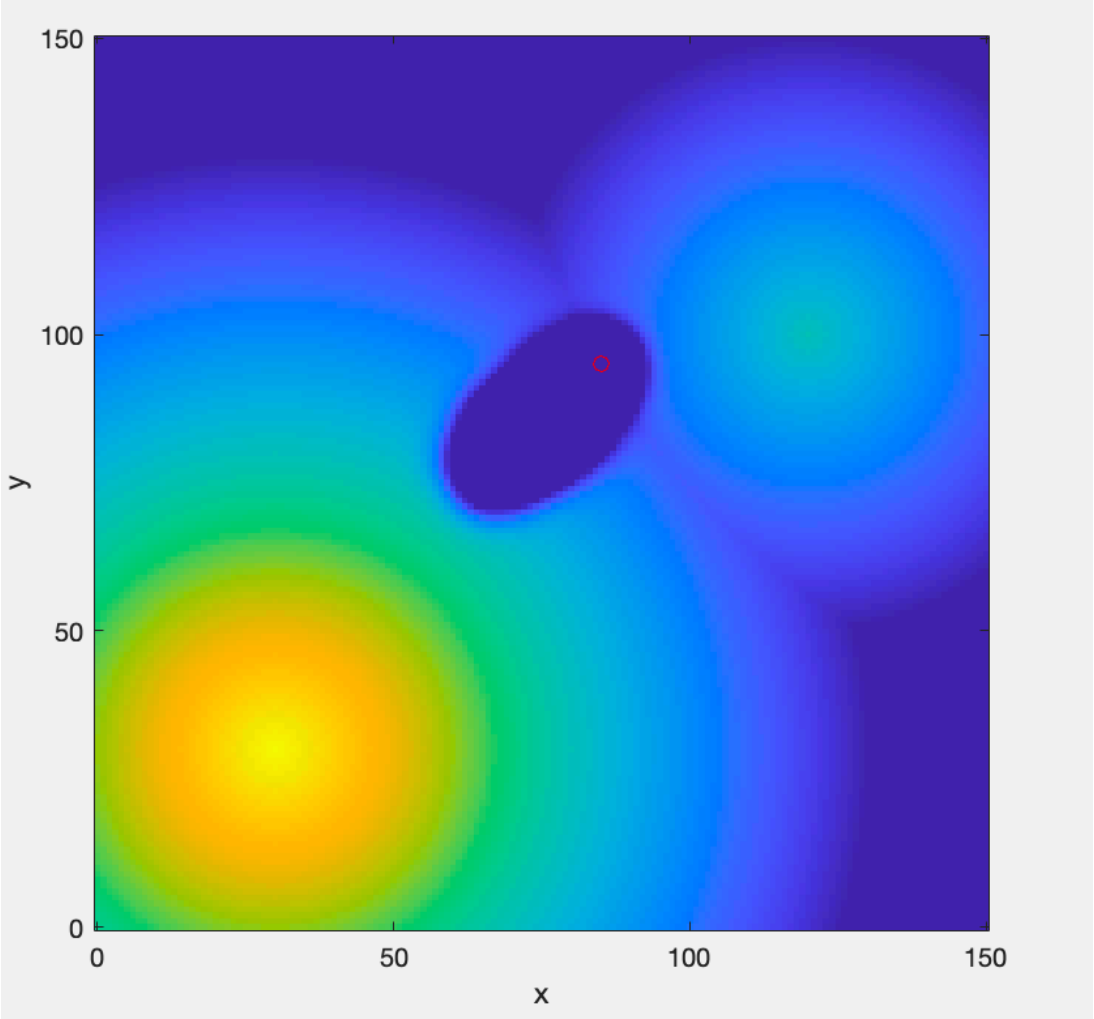
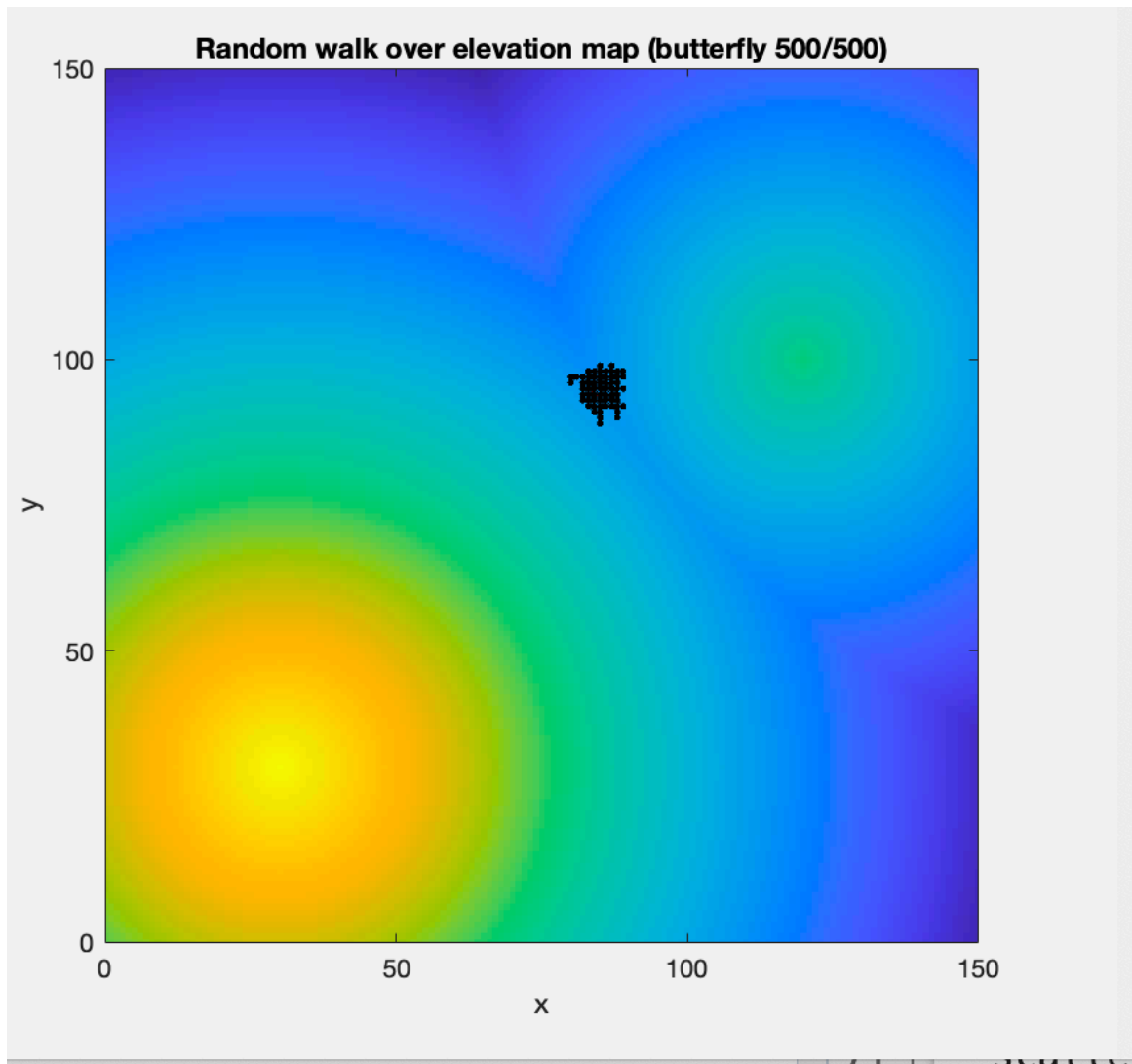


A) Output from the code:





B)

Figure 1A(path)

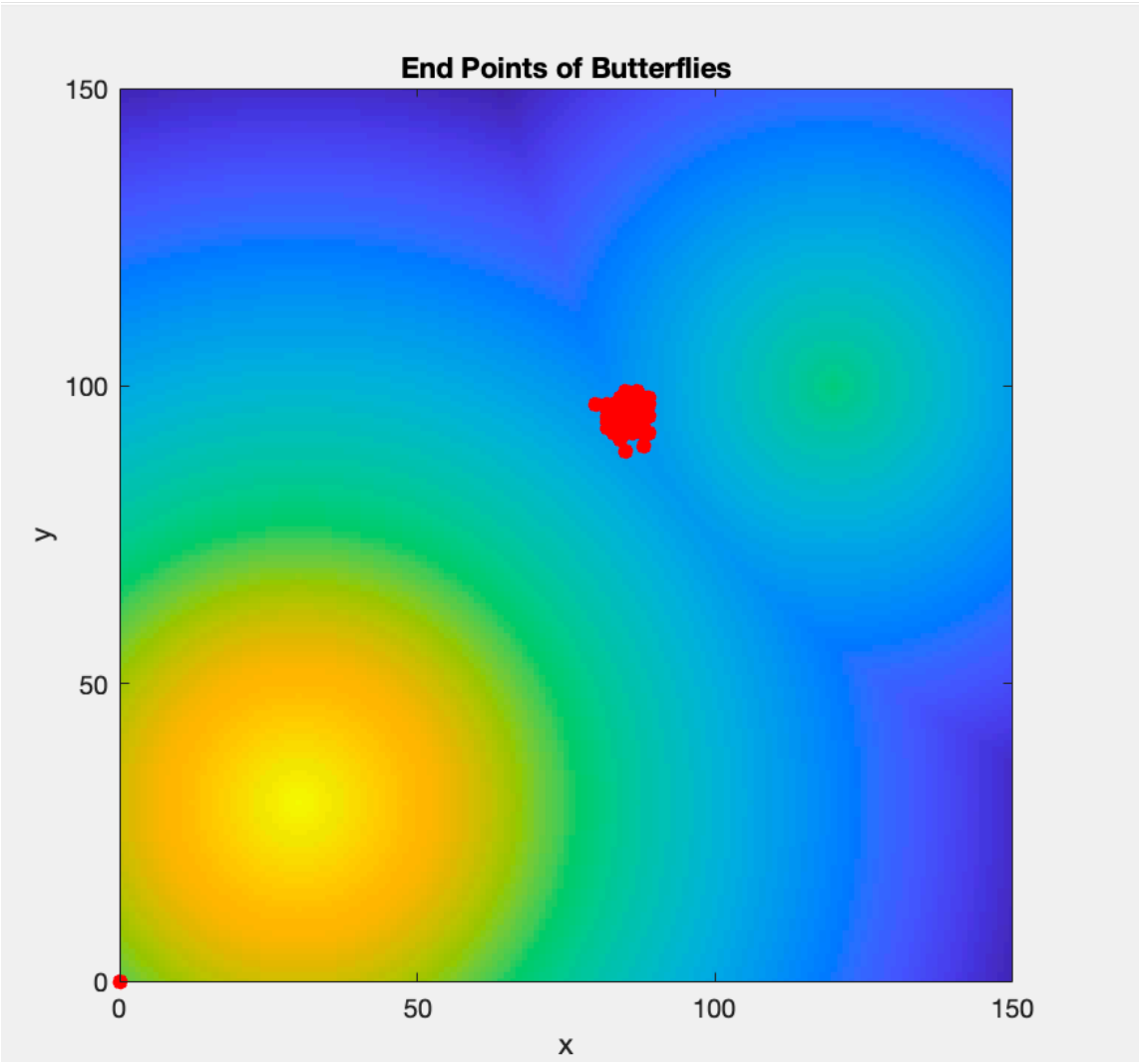


Figure1B(end point)

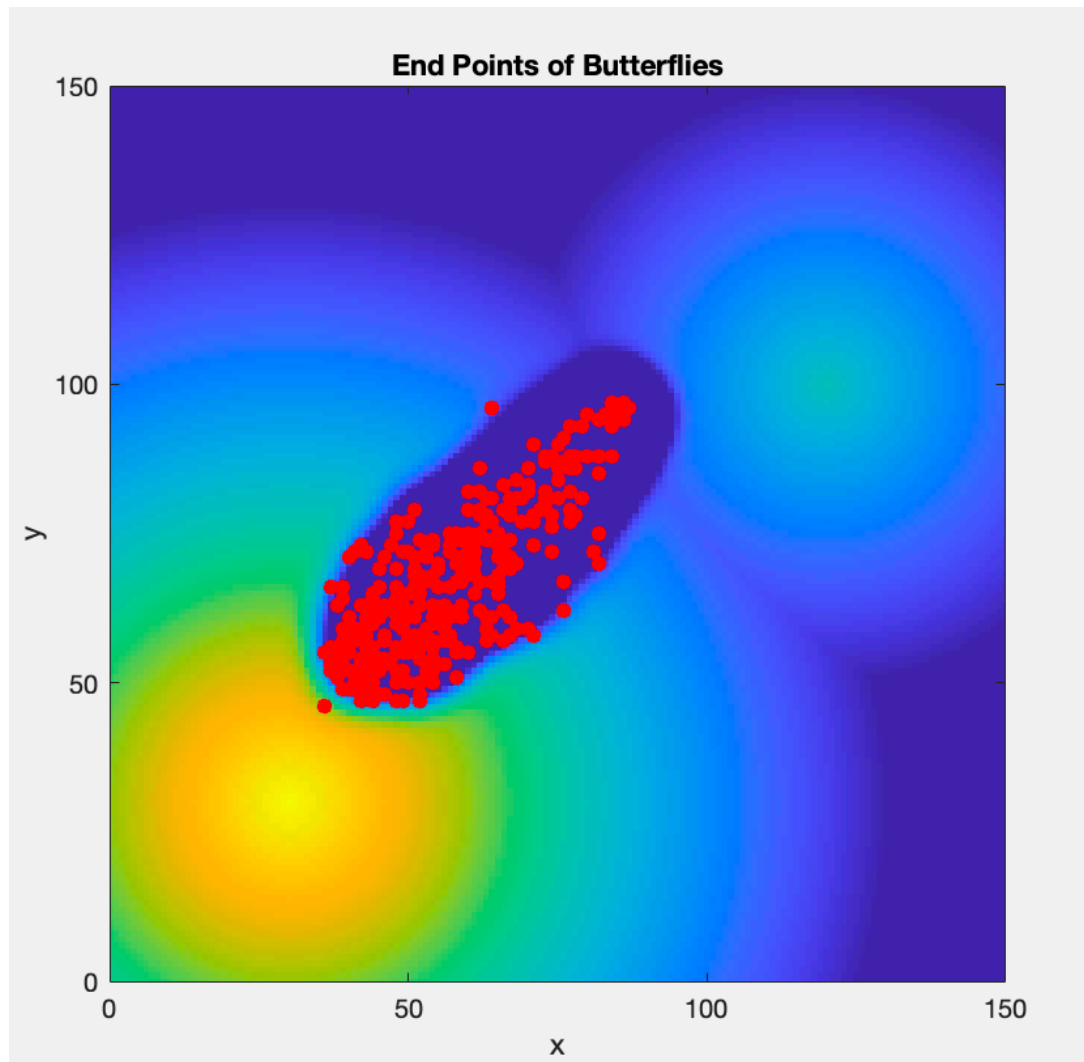


Figure2(path and endpoint)

Explanation: Figure 1 illustrates the scenario when the lowering ground feature is turned off (set to 0), while Figure 2 depicts the situation when the lowering ground feature is enabled (set to true). In both cases, 500 butterflies were used as agents.

The red dots in the figures represent the endpoint of each butterfly's path.

In the absence of the lowering ground feature (when it is false), the butterflies' concentration around the starting point is influenced by the elevation function and conditional statements in the code. If the starting point has a consistently higher elevation and meets the condition for stopping the random walk, butterflies tend to remain in proximity.

When the lowering ground feature is enabled (set to true), the butterflies lower the ground along their path, adhering to the condition that they stop when reaching a hilltop. Consequently, in Figure 2, the red dots (endpoints) progressively approach the orange/yellow area. This is because, as the butterflies move, the lowering of the ground causes the highest location to shift towards the orange/yellow region. As a result, the dots exhibit a linear-like shape, consistently moving towards the orange/yellow area.