# Tutorial 5

1. What is the difference between the Manhattan Distance and Euclidean Distance in Clustering?

2. Explain some cases where k-Means clustering fails to give good results.

3. Suppose we have 4 medicines and each medicine has 2 attributes (weight and ph). Result the final 2 groups using k-means algorithm.

| Object | Weight | Ph |
|---|---|---|
| A | 1 | 1 |
| B | 2 | 1 |
| C | 4 | 3 |
| D | 5 | 4 |

Q4. Suppose that the data mining task is to cluster points (with (x, y) representing location) into three clusters, where the points are A1(2,10), A2(2,5), A3(8,4), B1(5,8), B2(7,5), B3(6,4), C1(1,2), C2(4,9). The distance function is Euclidean distance. Suppose initially we assign A1, B1, and C1 as the center of each cluster, respectively. Use the k-means algorithm to show only (a) The three cluster centers after the first round of execution. (b) The final three clusters.