

Avik Bag  
Professor Matt Burlick  
CS 383 – Assignment 2  
1<sup>st</sup> February 2017

## Visualization for programming part (k-means Clustering)

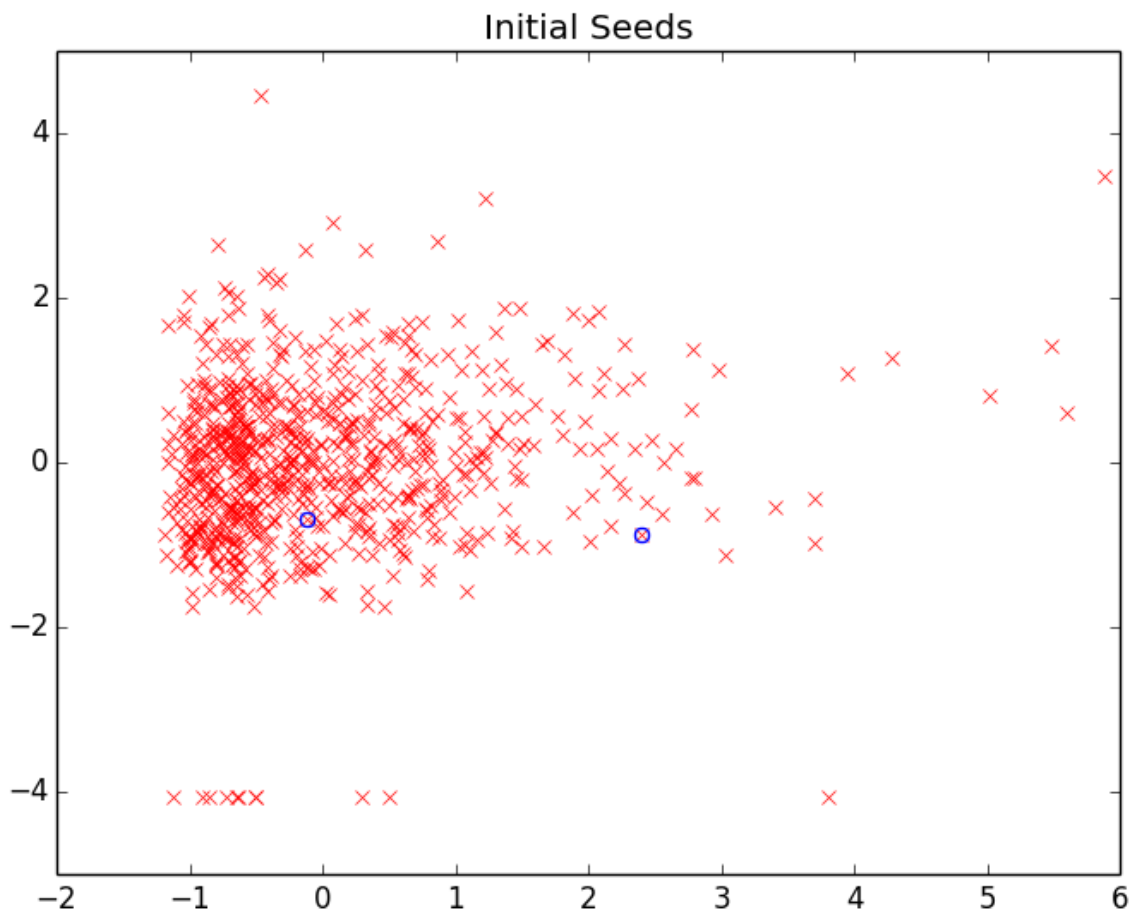


Figure 1: Seeds

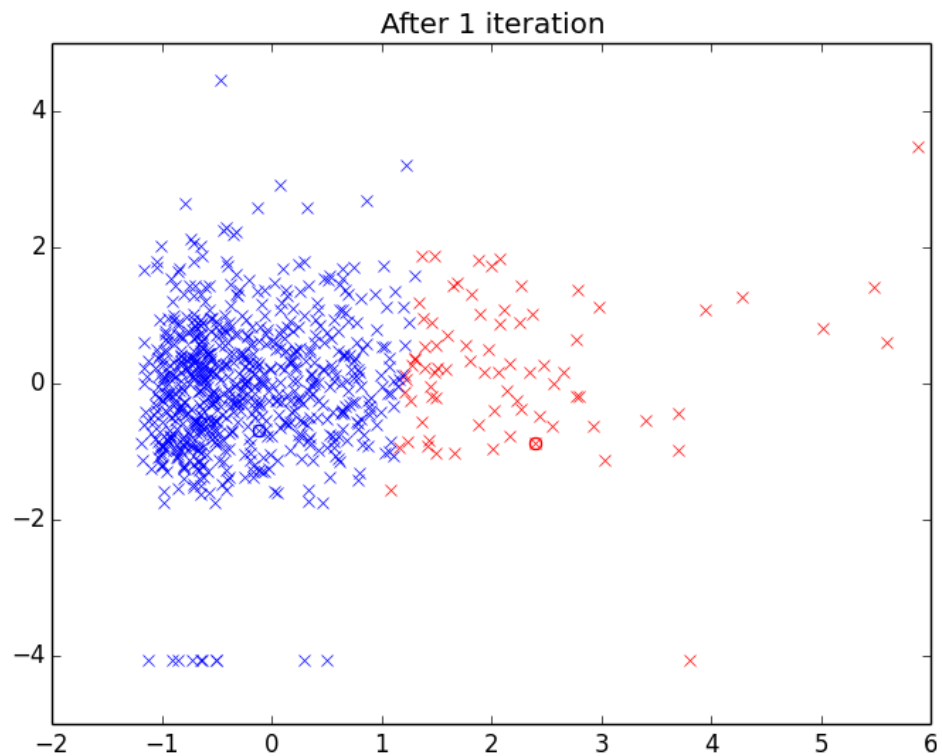


Figure 2: Initial Clustering

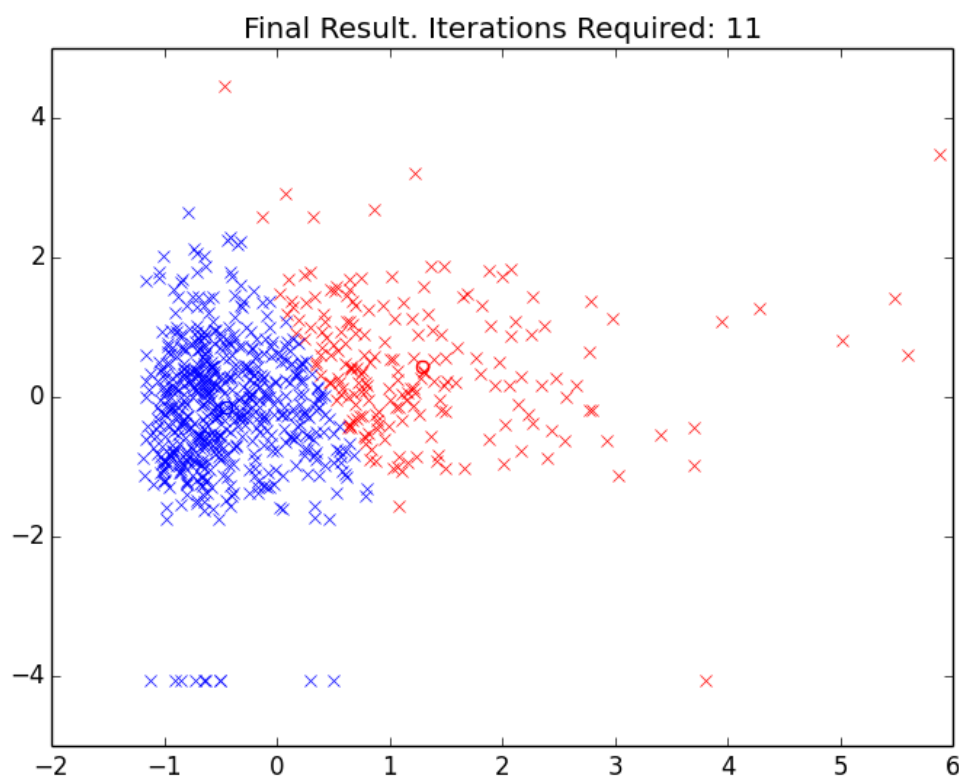


Figure 3: Final Clustering after meeting EM requirements

It shows that after 11 iterations, the break case for the Expectation Maximization is met. However, this is not a fixed variable. The number of iterations is highly dependent on where the initial random reference points are selected. One thing to note is that no matter how many iterations run or the randomness of the initial reference points, the end result tends to look very similar to each other after several test runs of the kmeans clustering.