

# Assignment

Implement k-means clustering. Your objects are weeks and your feature set is  $(\mu, \sigma)$  for your weeks. We will choose the optimal number of clusters using year 1 and year 2 data. We apply the classifier to our data and will examine the composition of your clusters

## Questions:

1. take  $k = 3$  and use k-means sklearn library routing for k-means (random initialization and use the defaults). Take  $k = 1, 2, \dots, 7, 8$  and compute the distortion vs.  $k$ . Use the "knee" method to find out the best  $k$ .
2. for this optimal  $k$ , examine your clusters and for each cluster compute the percentage of "green" and "red" weeks in that cluster.
3. does your  $k$ -means clustering find any "pure" clusters (percent of red or green weeks in a cluster is more than, say, 90% of all weeks in that cluster)?