

Iris

Algorithm	Silhouette score	Running time(seconds)
K means	0.5525919445499757	0.5129585266113281
Hierarchal - Scipy	0.5539343898551252	4.1815009117126465
Hierarchal - skleran	0.5133502348448076	0.5313003063201904

Shape- without classlabels- >(150, 4)

No.of iris-setosa rows-> 50

No.of iris-virginica rows-> 50

No.of iris-virginica rows-> 50

unique values of lastcolumn-> ['Iris-setosa' 'Iris-versicolor' 'Iris-virginica']

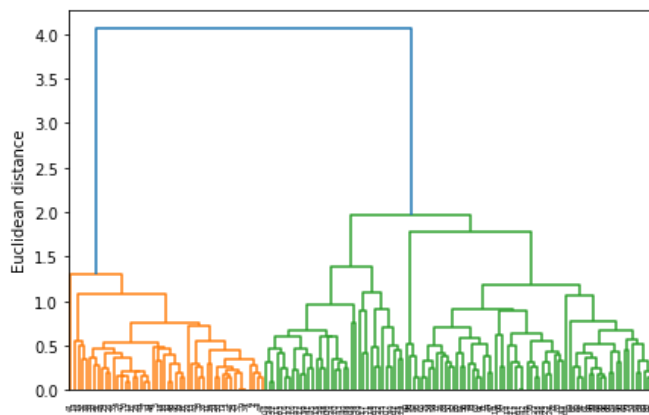
Class truth lables – y = [0-50,1-50,2-50]

K means-Clustering labels - =[0-50, 1-62, 2-38]

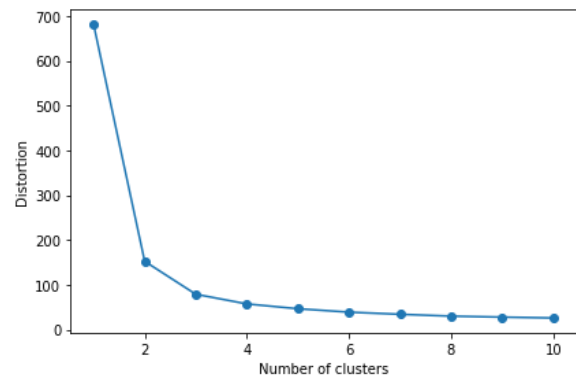
Sklearn – clustering labels = [1-51, 0-76,2-23]

Scipy – clustering labels =[1-50, 3-63, 2-37]

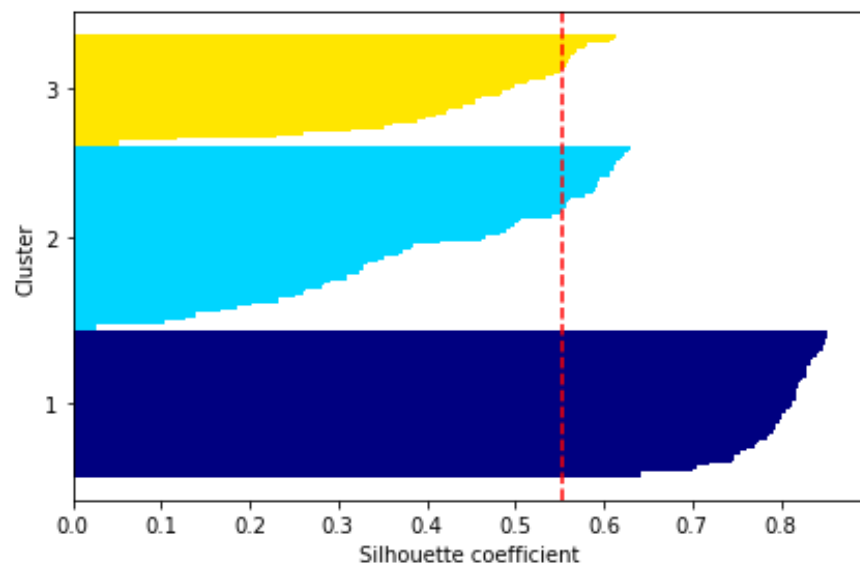
Dendoram



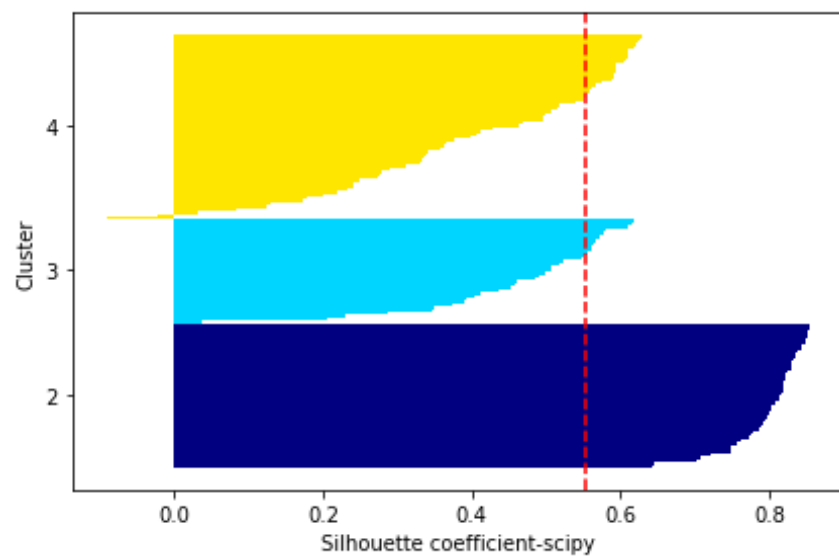
K = 3, k increase and the distortion decreased, and there plot looks like an elbow that's how we identify K. We took K at the point where graph is rapidly change and creates an elbow shape.



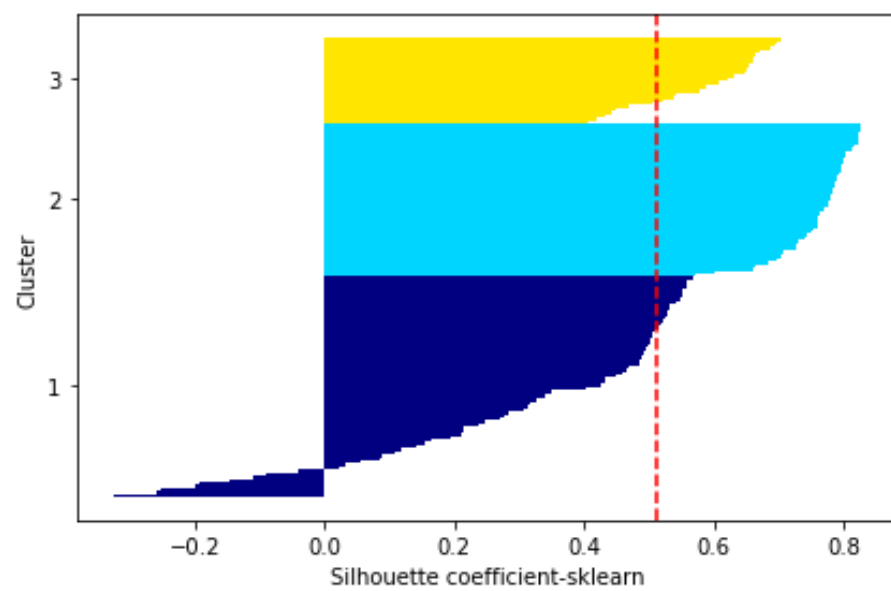
Silhouette coefficient: K means



Silhouette coefficient: Hierarcheal scipy



Silhouette coefficient: hierarcheal Sk learn



Mnist:

Algorithm	Silhouette score	Running time(seconds)
K means	0.04390445593256127	157.63589358329773
Hierarchal - Scipy	0.04725699954388846	235.6113224029541
Hierarchal - skleran	0.045105724134224916	198.3814091682434

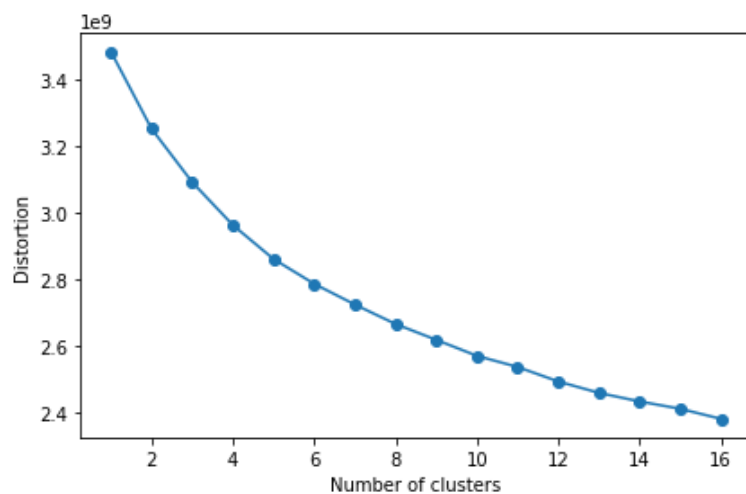
Subset shape : (1000, 784)

Target distinct variables :

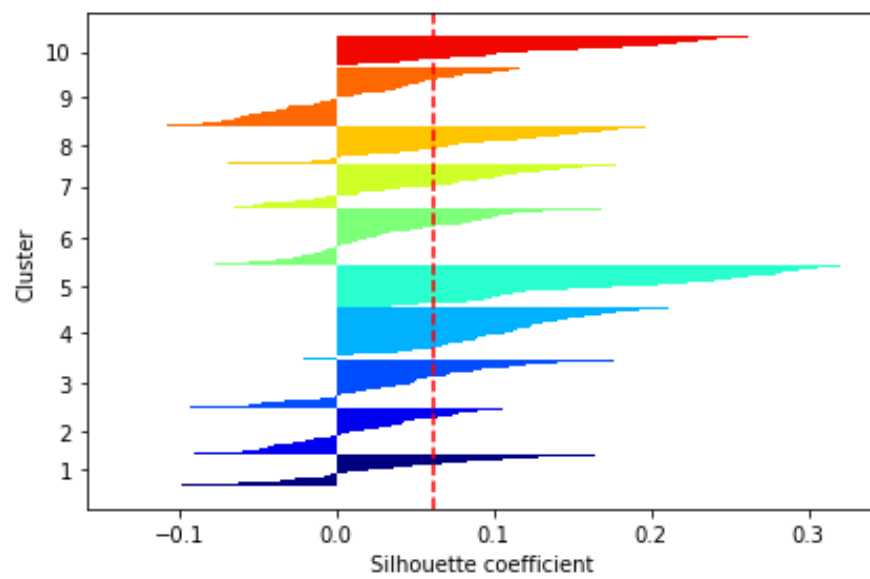
['0' '1' '2' '3' '4' '5' '6' '7' '8' '9']

K = 10

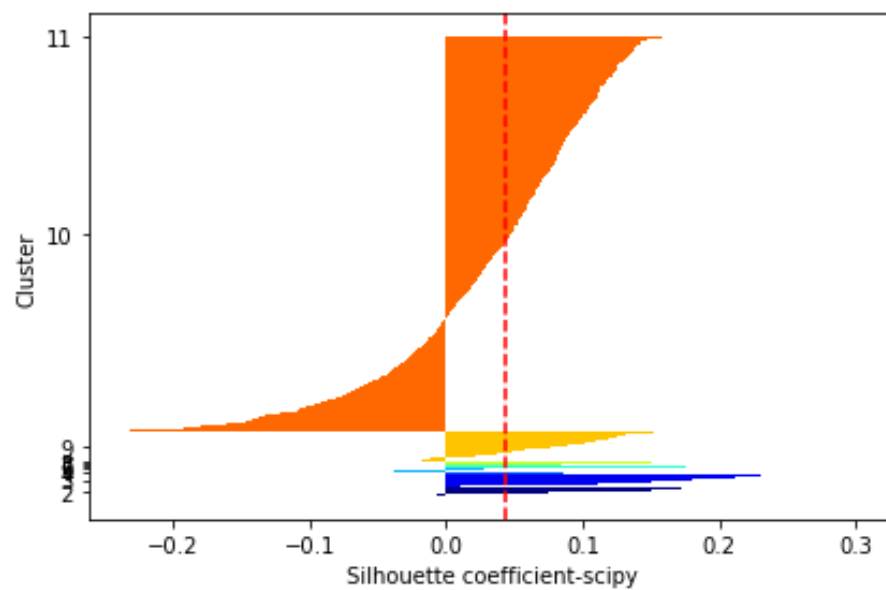
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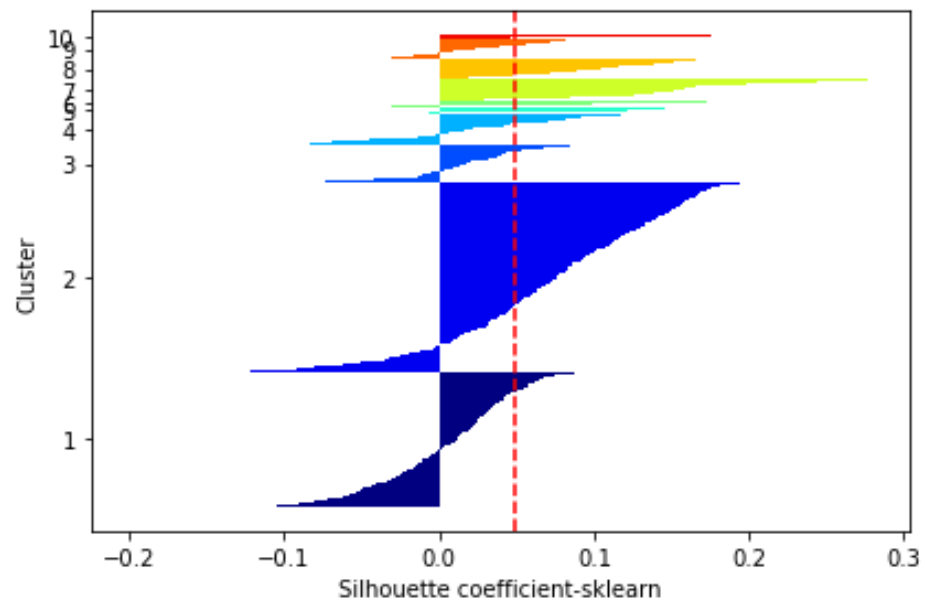
Silhouette coefficient: K means



Silhouette coefficient: hierarcheal scipy



Silhouette coefficient: hierarcheal sklearn



Dendrogram

