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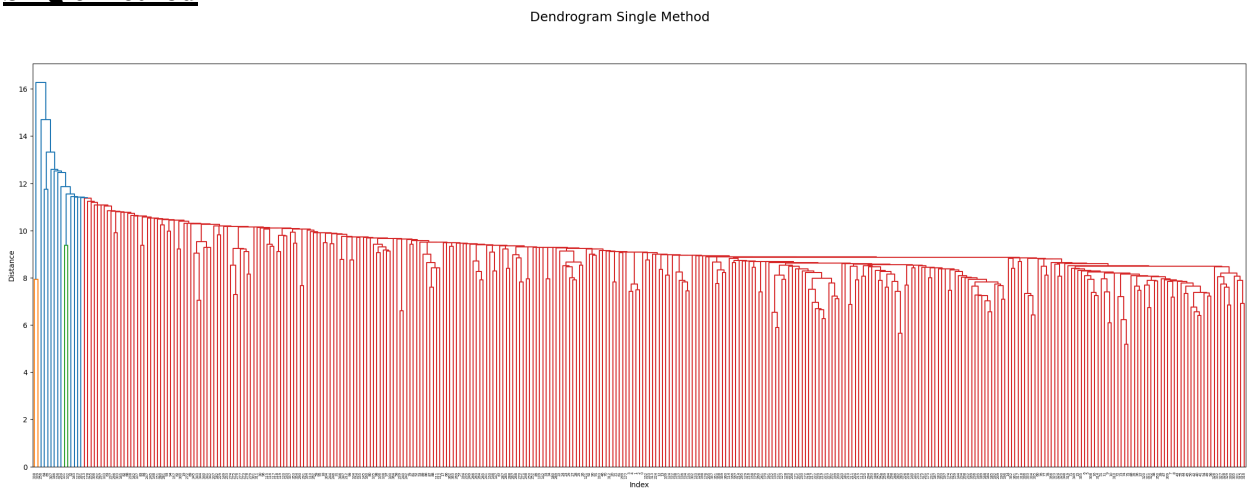
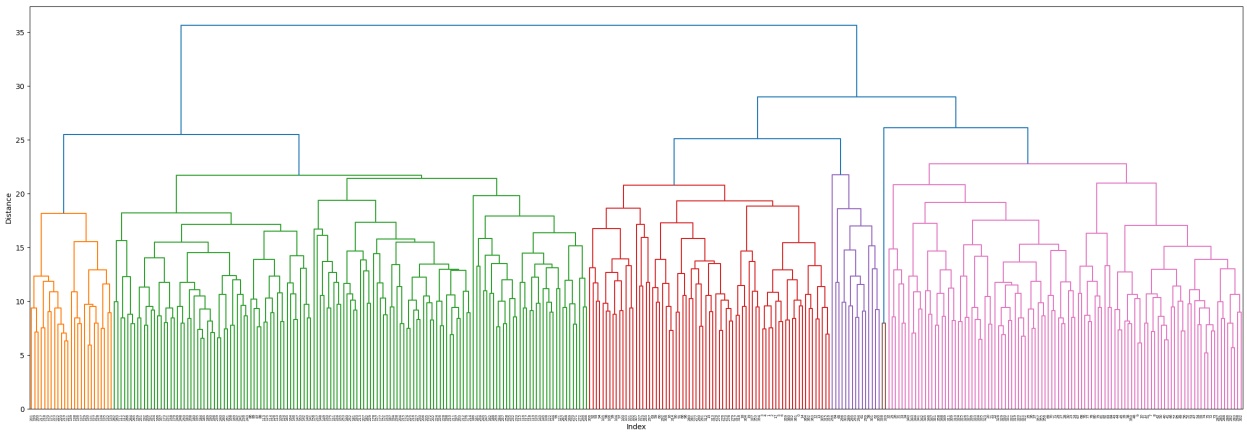
Exercise 2.1

Dendrograms comparing all stations in 1992

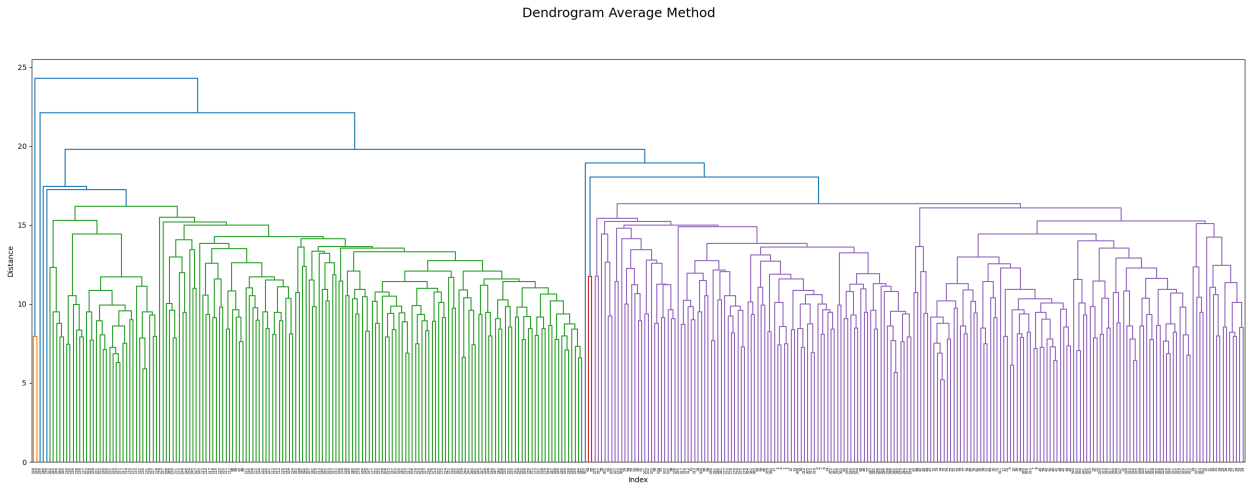
Single method



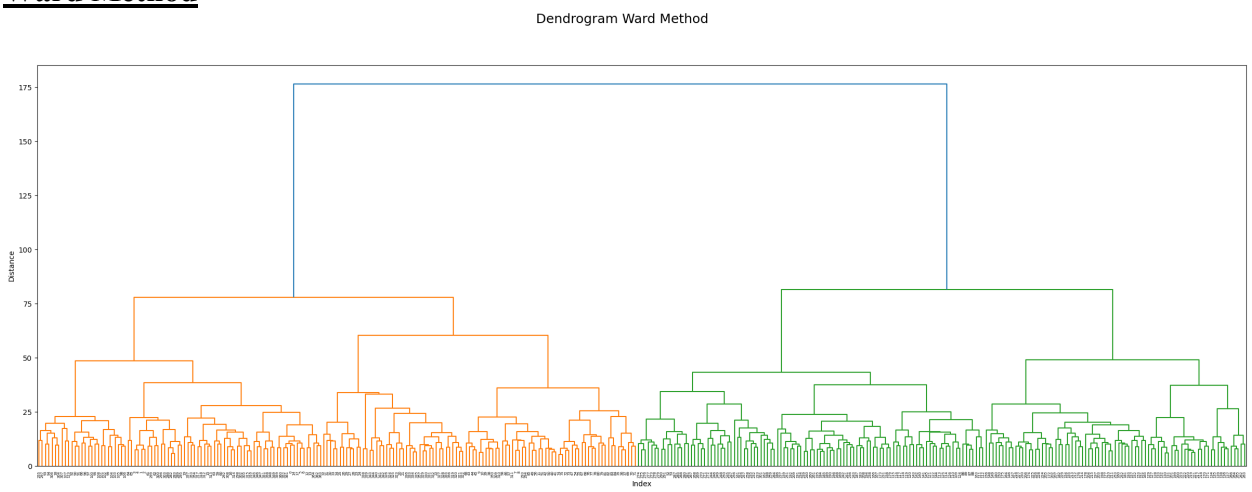
Complete Method



Average Method



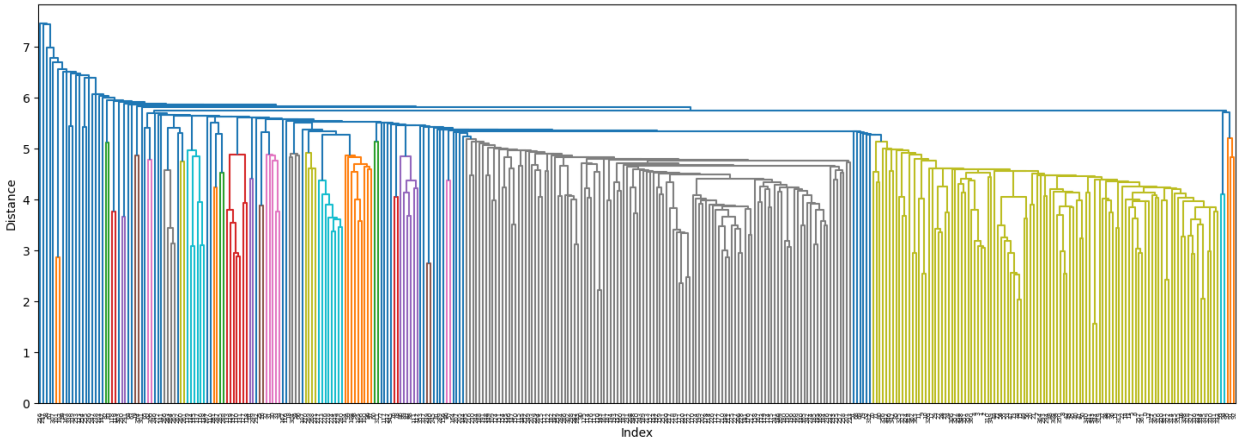
Ward Method



The Dendrograms show that the single method mostly groups all the stations into one cluster. The complete method disperses the data into more clusters, which seems more optimal. The ward method creates two main clusters. In the average method, two large clusters dominate the dataset, with several subclusters within it.

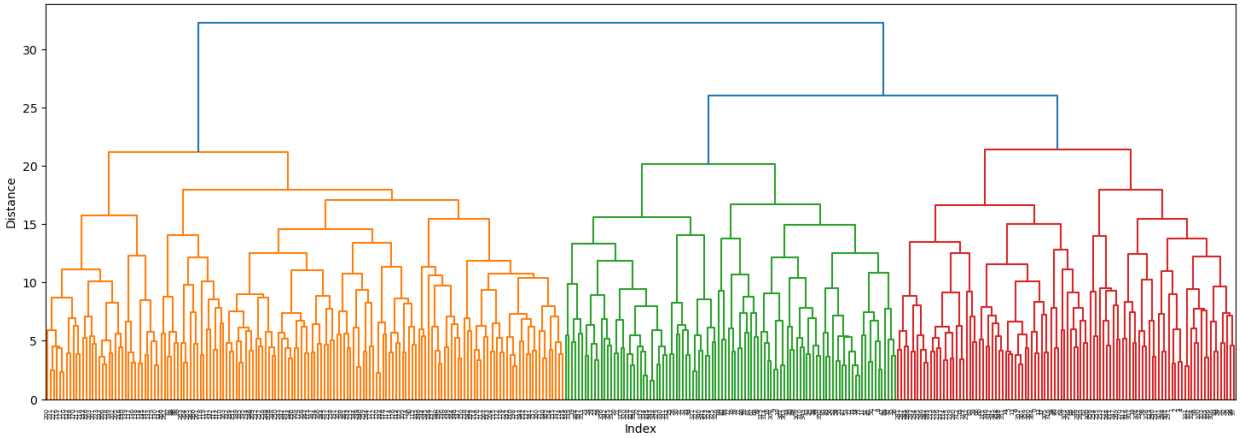
Dendrograms comparing all stations in 1992
Single Method

Dendrogram Single Method



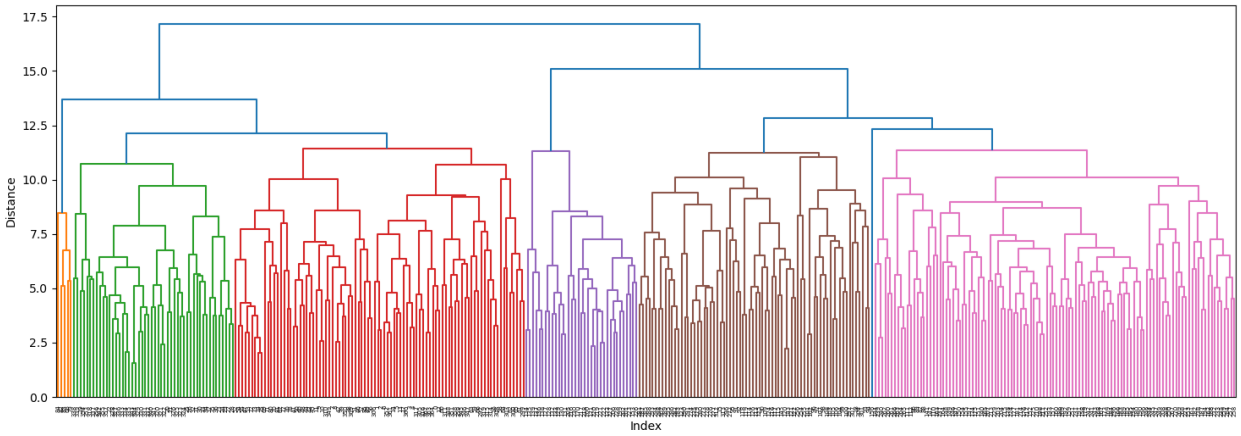
Complete Method

Dendrogram Complete Method

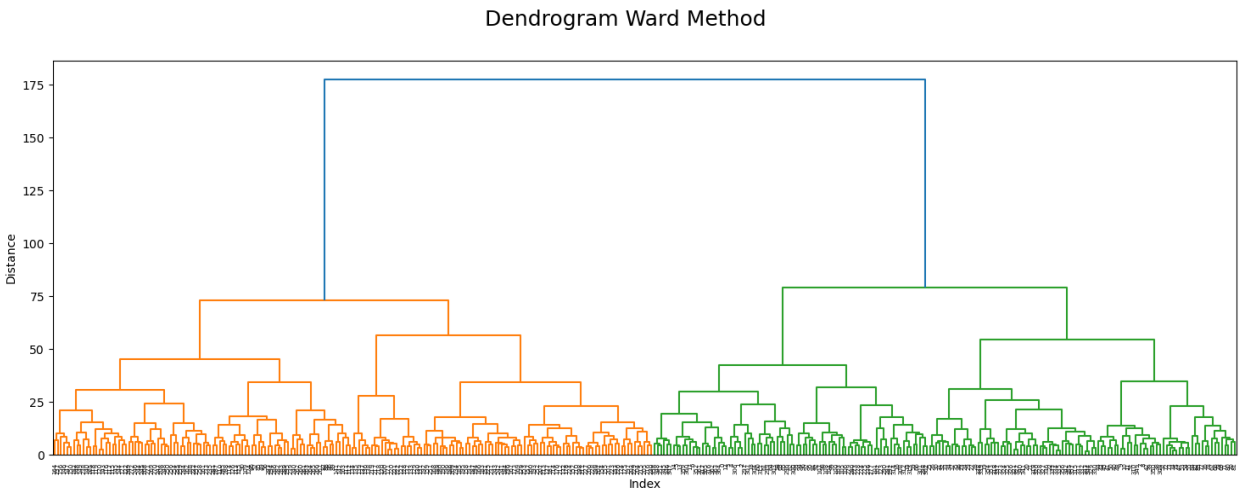


Average Method

Dendrogram Average Method



Ward Method



Conclusion

Comparing the original dataset to the reduced using the PCA shows differences between the methods. In the initial dataset, the single method focuses mostly on one category, but with the reduced dataset, it is spread out into more categories. The complete process in the original has 2 clusters and about six subclusters; in the reduced, there was a reduction of subclusters. Honestly, I prefer the supervised models because they are easier to interpret than the unsupervised models