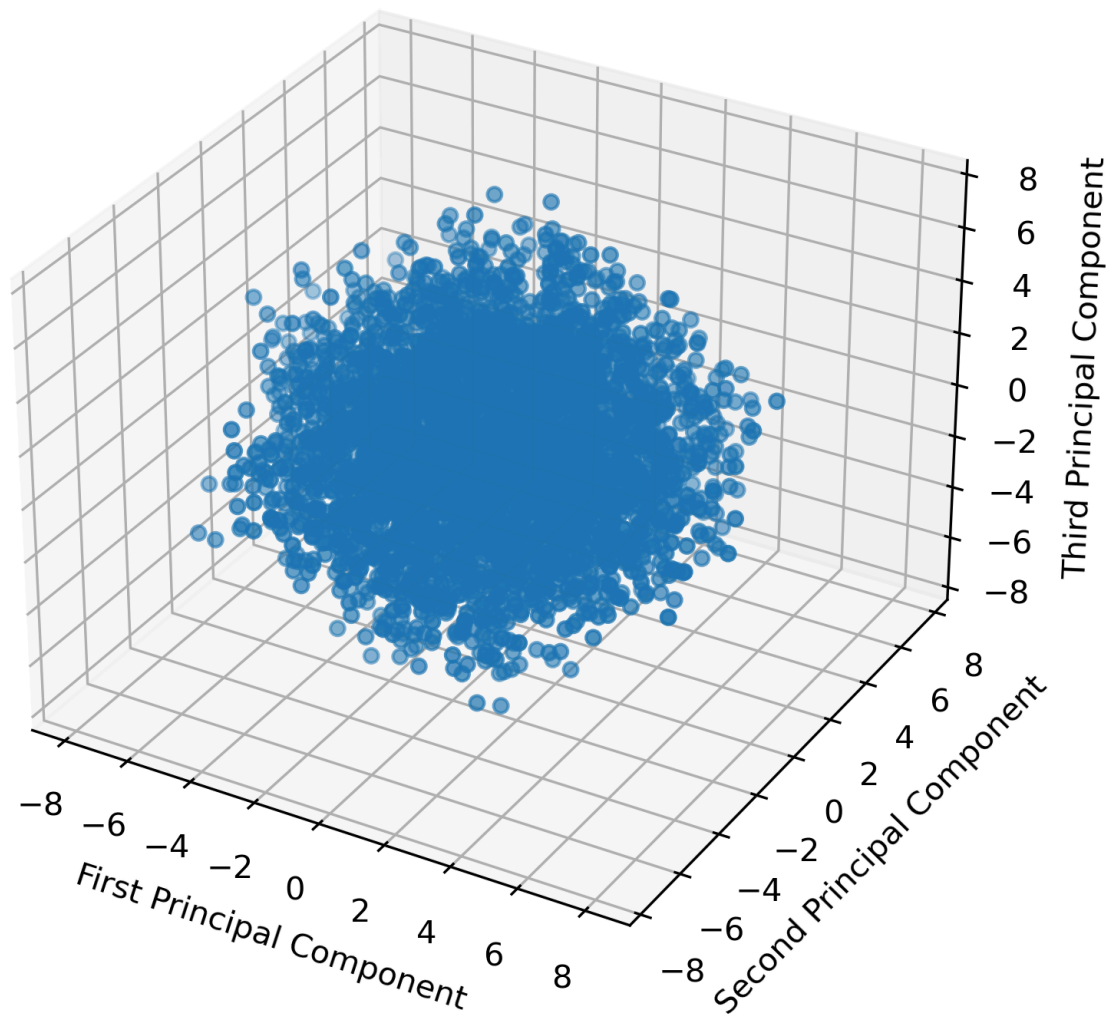
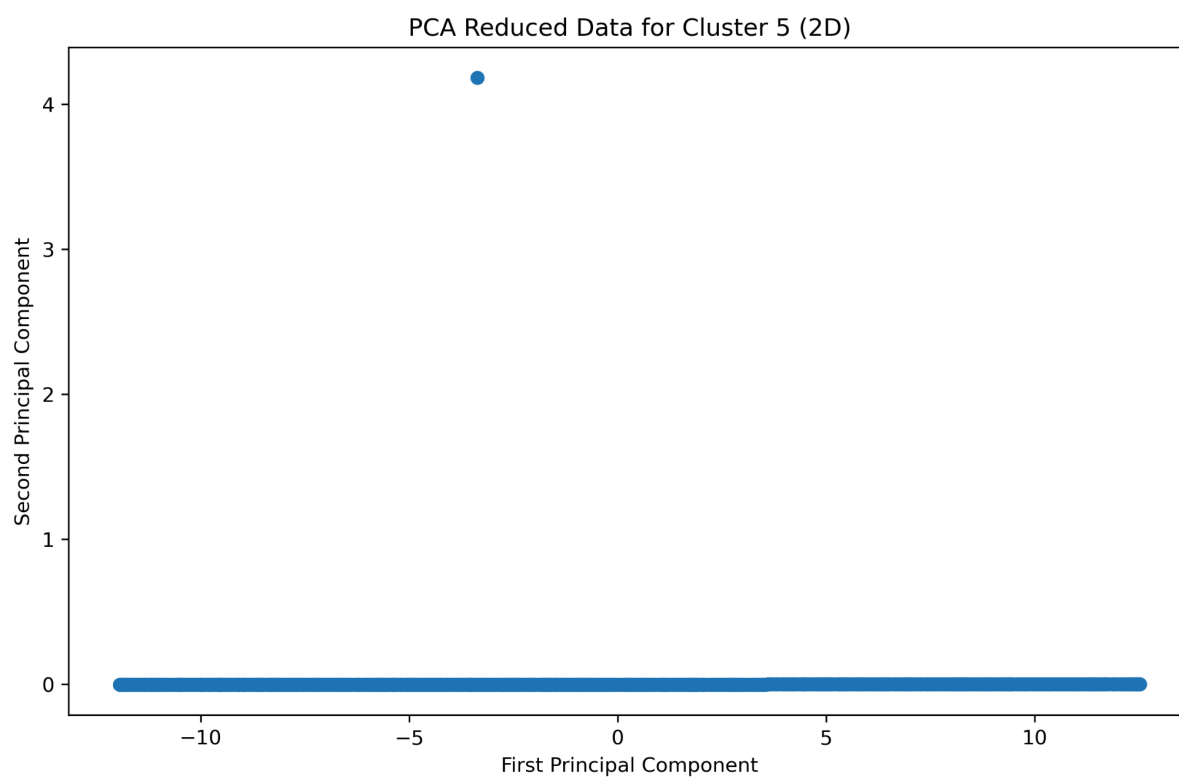


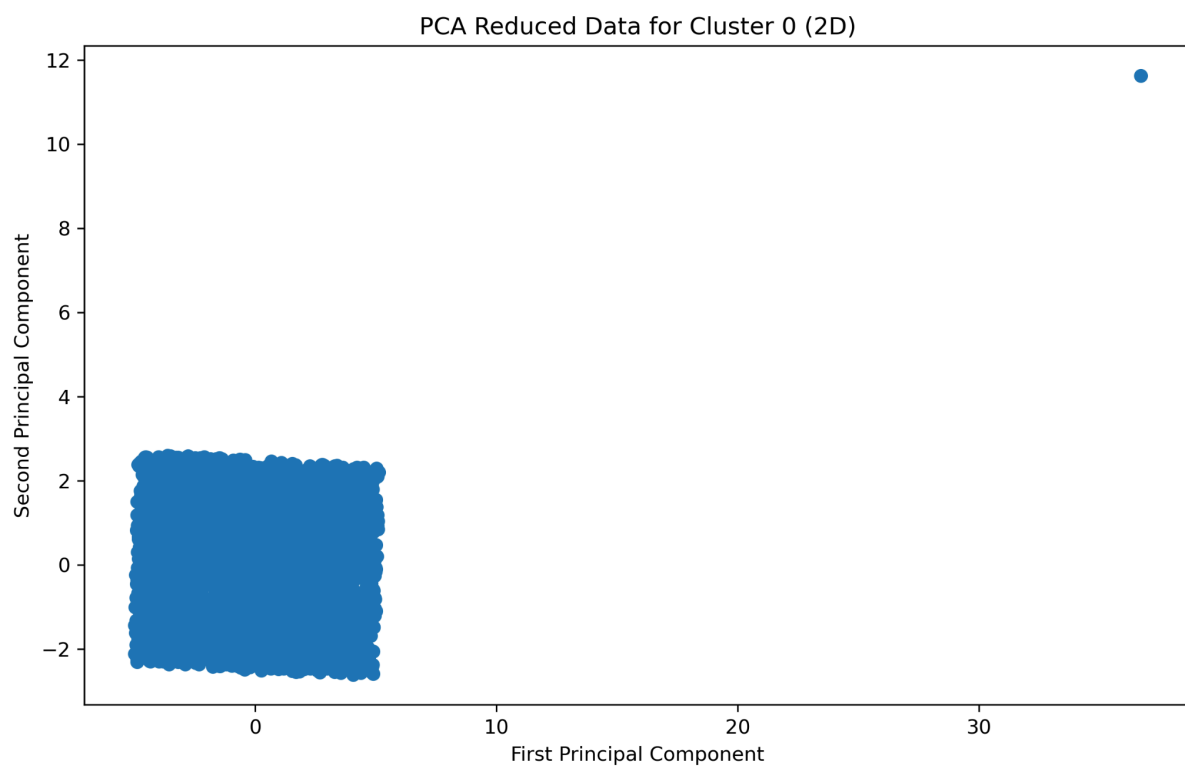
Cluster	Object	Location Center	Size	Points
2	6D Ellipsoid	15 80 15 80 15 80	12 x 15 x 15 x 16 x 16 x 14	4000
5	1D Line	15 15 15 15 15 15	10	2000
0	2D Rectangle	75 75 75 75 75 75	20 x 18	3000
3	3D Cube	25 25 25 75 75 75	16 x 16 x 16	3500
1	6D Joined-Sticks Figure	0 0 0 0 0 0	1 x 1 x 1 x 1 x 1 x 1	2400
4	2D Oval	70 60 50 40 30 20	22 x 34	2500

Based on the output and the plots I obtained, this table was my final conclusion. For the output when the code is run, it gives back a certain number of points for each cluster, but in the shapes that were not 6D, there was an obvious outlier in each of the plots, so I subtracted a point from the total number for each of those. To get the sizes, I subtracted the min from the max that is output, for the corresponding dimensions, and then rounded to integers. For the oval, it outputs a dimensionality of 3, but it is clear that the outlier is causing an increase of one dimension. Below are some of the plots from the output.

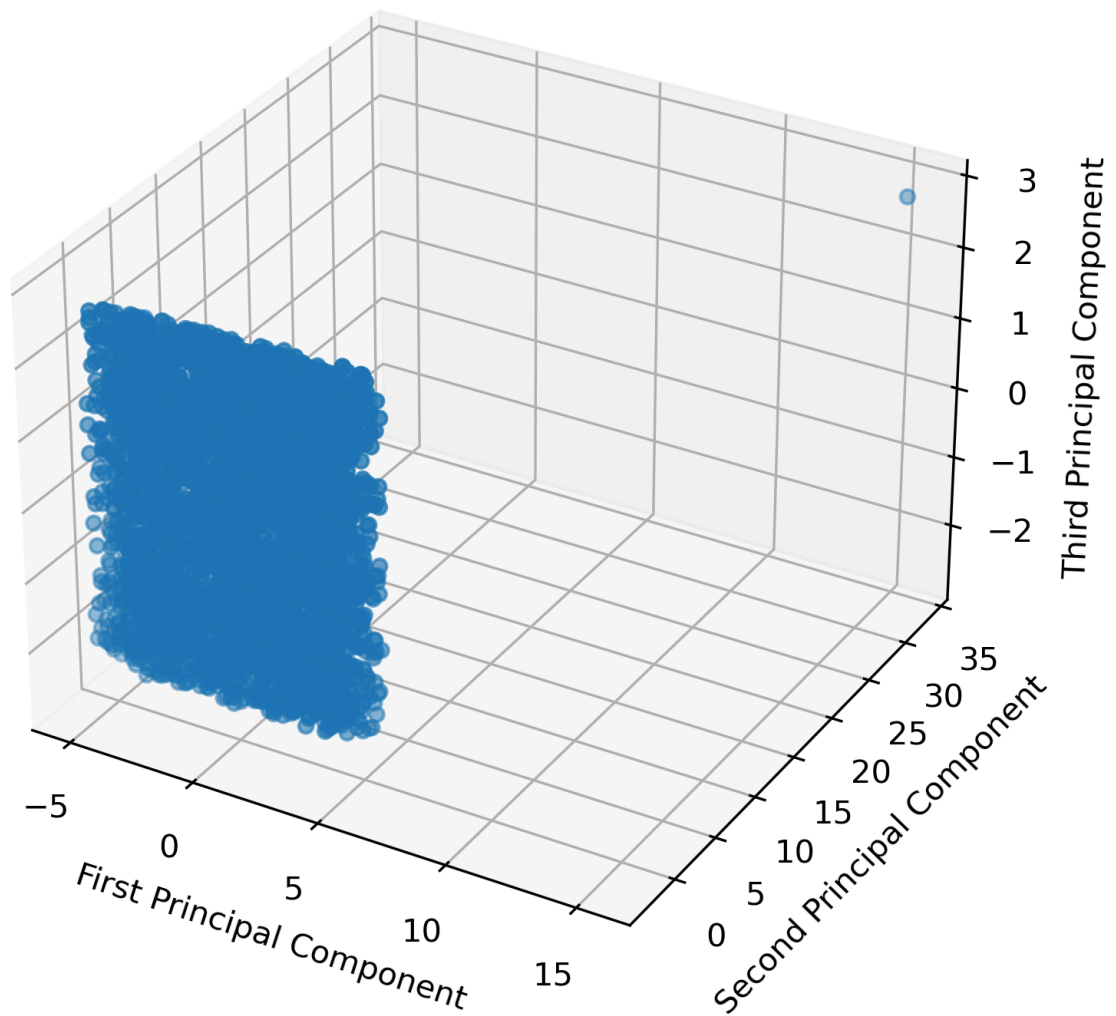
PCA Reduced Data for Cluster 2 (3D)







PCA Reduced Data for Cluster 3 (3D)



PCA Reduced Data for Cluster 1 (3D)

