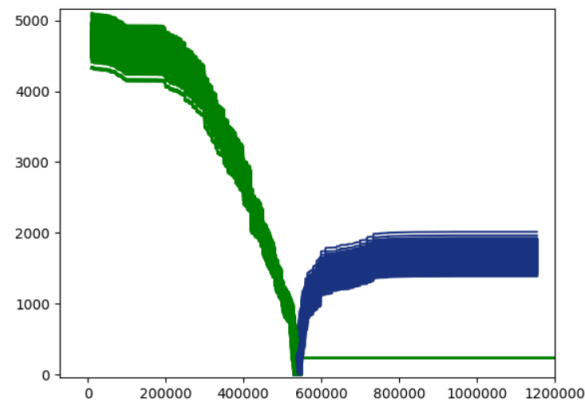
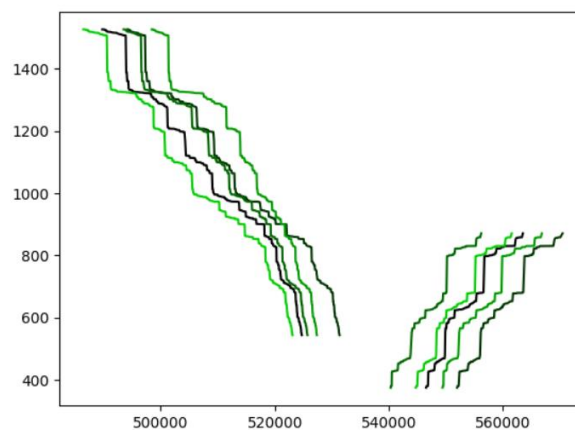


I organized JSON objects in a text file into processable lists segmented into bid and ask prices with their corresponding cumulative volumes which were further divided into their sample times. The volumes were standardized by dividing by the total volume to reduce the impacts of scale. Before implementing k means, the data provided seemed to lack distinctive groups, shown by a plot of all bid-ask price graphs.



To remedy this, I zoomed in on data points closest to the y axis. I implemented k means with 5 centroids to segment the Link 1 bid-ask data into distinct graphs. Despite zooming in on the data points near the y-axis, there were not many distinctive trends in the graphs that could be discerned, likely due to the lack of data.



The segmentation data collected generally appears similar between the centroids, specifically in their shape. This could be demonstrative of limited price shifts during the day such that demand or supply were not significantly impacted. Stability in k mean centroids could be indicative of this for future algorithms. For the ask graph farthest to the right, the corresponding bid graph appears to cut across the other bid graphs, demonstrating its lower slope. This implies that as price increases, the slope of the buy graph decreases. This seems to contradict the data provided in the workshop assignment, so further investigation would be needed.