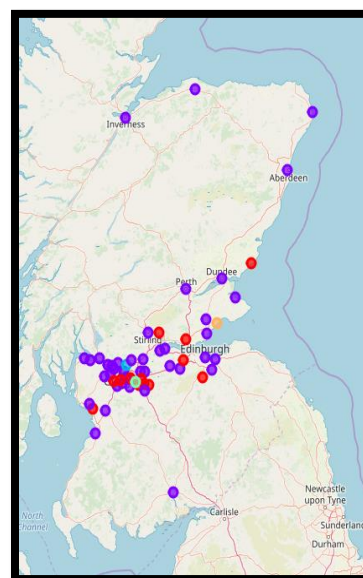


# Data Science Capstone, Blog Post

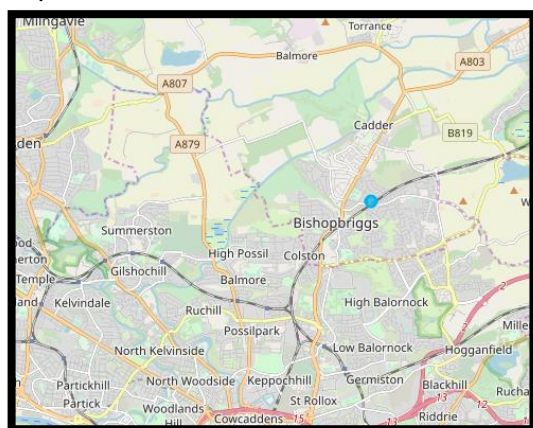
The goal of this project was to find a new city in Scotland to open an upscale cocktail bar. Although there are many ways to do this, ours was to use k-means clustering, a machine learning tactic, to group cities by similar types of venues, and then investigate these clusters to find which type of city the investors might be interested in opening. Our investors are interested in opening within the country of Scotland, but in a city where competition for an upscale cocktail bar will be low. Additionally, it should complement other venue types, such as entertainment, sport, and theater type venues. Pubs would be considered similar establishments, whereas full-scale restaurants and coffee shops would not be considered similar.



The data used was from two sources: Wikipedia, as well as Foursquare. Specifically, we used coordinates of city centers scraped from a previous project to access a certain radius around cities, and to collect the number of venue types in that area.

After pulling cities and coordinates data and importing them into a pandas dataframe, we then pulled Foursquare data in through the developer API. With the output from the API, we were able to cluster the cities in order to better investigate types of venues and automatically rule out many cities at once who are economically similar.

In the end, we have five unique clusters based on venue types. These ranged from the largest cluster having a size of 40 cities, with the three smallest clusters having a single city, Bishopbriggs, Blantyre, and Buckhaven. Based on the venue makeup of these five clusters, we can see that they are indeed quite different, and can say that our clusters are a successful representation.



One of our clusters, Bishopbriggs, seems to be the ideal location for this venture. Bars or pubs are not listed as a top ten venue type. Additionally, many of the most common venue types seem complementary such as a park and an event space. Given that Bishopbriggs is a small suburb on the outskirts of Glasgow, a new upscale cocktail bar could be a unique offering in this neighborhood, being a venue type traditionally found in urban downtown areas. We think it would be a good move by our investors to jump on this market opportunity.