1. **Introduction**

## Background

Beijing is the capital, and one of the four direct-controlled municipalities of the People's Republic of China. Beijing is governed as a municipality under the direct administration of the central government with 16 urban, suburban, and rural districts (boroughs).

China’s house prices rise sharply during the last decades, especially in Beijing. The house price in Beijing is mounting to astronomical figures and shows no signs at present of ceasing to rise. However, since Beijing is the center of China, it has over 21 million residents within an administrative area of 16,410.5 km2. In 2016 the Global Cities Business Alliance said Beijing was the most expensive city to rent an apartment in, with average monthly rent costing 1.2 times the average monthly salary. The housing problem in Beijing is severe.

## Problem

For individuals working in Beijing, they need to buy or rent an apartment far from their working place. Some of them even choose to live in rural districts of Beijing, as if they are accessible by public transport. Thus, knowing the price map of houses is important.

Moreover, for an investor, they prefer the districts where there is a lower real estate cost, dense population, and the type of business they want to install is less intense.

When we consider all these problems, we can create a map and information chart where the real estate index is placed on Beijing and each district is clustered according to the venue density.

# Data acquisition

The data of administrative division of the Beijing is from the following Wikipedia page, <https://en.wikipedia.org/wiki/List_of_administrative_divisions_of_Beijing>. I used Forsquare API to get the most common venues of given district of Beijing. I collected latest per square meter Housing Sales Price (HSP) Averages for each district of Beijing from housing retail web page, <https://newhouse.fang.com/house/fangjia/>.

My master data which has the main components Borough, Average House Price, Latitude and Longitude, Area, Population and Density informations of the city.

