A description of the problem and a discussion of the background. (15 marks)

Background
Client A decides to open a Chinese restaurant in New York city. She would like to get some advice on how to choose a proper location for her restaurant. Referring to some tips, there are four important factors that one should notice when he/she choose a location of the restaurant [1]:
1) Visibility and accessibility. The spot should be convenient to be accessed either by driving or walking.
2) The demographics. The target group of the restaurant should match the demographics, such as income level, age, the ethnicity composition, etc., of the interested neighborhood.
3) Labor costs and minimum wage. The restaurant runner should evaluate whether the restaurant can afford labor's wage.
4) The competition with other restaurants. More nearby competitors sometimes mean more potential customers. However, it also means that customers may be easily drawn by competitors. The restaurant owner should make a balance.

Defining the Problem
Since the client decide to open the restaurant in New York, the minimum wage will not be considered in my analysis. In this sense, in order to find optimal sites for opening a restaurant, I only need to consider the rest factors.
In short, the question will be defined as 'how to find an optimal site for client A to open a restaurant?'

A description of the data and how it will be used to solve the problem. (15 marks)

Data Description
For the first and the last factors, analyzing Foursquare location data will give us the answer. For the second factors, I need incorporate demographic data from NYU Furman Center [2] into my analysis.
  I will retrieve venue information of each neighborhood in New York by using Foursquare location data. I will also retrieve the demographic data of each neighborhood in New York.

Analytical Approach

Firstly, I will fetch the venue information of neighborhoods in New York from Foursquare. Secondly, I will merge the demographic data to the venue data. Then, I will use those data to cluster neighborhoods in New York. Finally, I will give suggestions on choosing location to the client.

References:

[1] https://www.webstaurantstore.com/article/40/how-to-start-a-restaurant.html

[2] http://app.coredata.nyc