**Predicting the optimal location for a Restaurant**

**Introduction: Business Problem**

In this project we will try to find an optimal location for a restaurant. Specifically, this report will be targeted to stakeholders interested in opening a Vegetarian restaurant in Chennai, Tamilnadu, India. Since there are lots of restaurants in Chennai we will try to detect locations that are not already crowded with restaurants. We are also particularly interested in areas with no Vegetarian restaurants in the city we chosen. We would also prefer locations as close to city center as possible, assuming that first two conditions are met.

We will use our data science powers to generate a few most promising neighbourhoods based on these criteria. Advantages of each area will then be clearly expressed so that best possible final location can be chosen by stakeholders.

**Data:**

Based on definition of our problem, factors that will influence our decision are:

1. Number of existing restaurants in the neighbourhood (any type of Vegetarian restaurant)
2. Number of and distance to Vegetarian restaurants in the neighbourhood, if any
3. Distance of neighbourhood from city centre

We decided to use regularly spaced grid of locations, centred on city center, to define our neighbourhoods.

Following data sources will be needed to extract/generate the required information:

1. Center of candidate areas will be generated algorithmically and approximate addresses of center of those areas will be obtained using Google Maps API reverse geocoding
2. Number of restaurants and their type and location in every neighbourhood will be obtained using Foursquare API
3. Coordinate of Chennai center will be obtained using Google Maps API geocoding of well known chennai location (Annanagar)