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

Singapore is internationally recognized as a foodie’s paradise - options abound from street food to heritage dining spots and fine dining restaurants, and across all sorts of cuisines no less. With a multitude of options at your fingertips, it can sometimes be difficult to decide where to go for dinner, and have the added confidence that your restaurant of choice serves quality food.

Furthermore, foodies often look for restaurants with specific cravings in mind - you may crave Japanese food on a given night and Korean food the next. For the adventurous among us, it would be helpful to know the areas in Singapore that tend to house quality Japanese and/or Korean restaurants for our exploration.

Enter Singapore’s transportation system. Singapore houses an efficient network of train stations with extensive coverage, and it is heavily used by commuters to travel around the island city. Since most commuters use the train system at some point in every journey, it would be helpful to know whether a particular train station is close to quality restaurants of a particular cuisine.

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

Foursquare contains location data on:

* 59 of Singapore’s most traversed train stations, scattered across the country; and
* A large sample of restaurants across various cuisines and their average customer rating.

This project seeks to create a map with circular markers representing each of the train stations and square markers representing each of the restaurants listed on Foursquare with a minimum average customer rating.

Each train station will effectively be the centroid for a cluster of restaurants, and categorized based on the cuisine that is most represented by restaurants within an x-mile radius. For instance, if the vicinity of City Hall train station is most populated by Japanese restaurants, then the City Hall cluster will be classified as a train station for Japanese food.

The train stations are close enough that the radius of each cluster may be small. Smaller clusters are good, because they allow us to better identify clusters of cuisines at a great level of detail. For example, it is better to have two clusters of a 2.5-mile radius categorized into “Japanese cuisine” and “Korean cuisine”, than to have both assimilated into one cluster of a 5-mile radius categorized into “Japanese cuisine”. The former approach provides more information.

The result will be a map of train stations illustrating the relative distribution of cuisines in Singapore. This will allow adventurous foodies to decide where to go on their next restaurant crawl, if they are particularly craving e.g. Japanese food on that particular day.