**Peer-graded Assignment: Capstone Project - The Battle of Neighbourhoods (Week 1): Report**

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**Introduction/Business Problem**

A large digital services company, MultiCorp Ltd, are moving to the Dartford area of Kent in the UK

from Scotland, also in the UK. The company is relocating 100 members of its younger members of staff, a large percentage of whom have primary school age children. Each member of staff has been given a relocation allowance such that they will be able to sell their properties in Scotland and buy a house in the Dartford area.

Dartford is the principal town in the Borough of Dartford, Kent, England. It is located 18 miles (29 kilometres) south-east of Central London, and is situated adjacent to the London Borough of Bexley to its west. To its north, across the Thames estuary, is Thurrock in Essex, which can be reached via the Dartford Crossing.(ref: Wikipedia).

The members of staff who are relocating wish to be within the catchment area (allocated by post code) of a primary school, but also wish to have local facilities to enjoy when they are not at work.

So the problem for them is, how to choose a school with the best (most diverse and largest in number) local facilities.

The human resources department of the company have been tasked to address this problem and find a solution for the staff and they have hired you on a consultancy basis to provide this solution.

You decide to create loop-up tables for the staff so that they can visit and assess the schools but also decide if the neighbourhood is suitably well provided with the local facilities they need for their leisure time.

Because the school names are in a stand-alone table provided by Dartford council, the names can be exacted from there. The postcodes, addresses and phone numbers exist in separate html documents, one per school. Because of this it was decided to manually extract these data and add them to the names table with code. The required latitude and longitude, based on the post codes of the schools, were available as one CSV file for the whole of England. The latitude and longitude could there fore be added to the names table by merging on the imported post codes file and using an inner join. An intern was employed to do the manual extracting and recording.

This analysis produced, for example:

| **School Name** | **Post Code** | **Address** | **Phone** | **latitude** | **longitude** |
| --- | --- | --- | --- | --- | --- |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **1** | Bean Primary School | DA2 8AL | School Ln, Bean, Dartford | 01474 833225 | 51.426347 | 0.289653 |

**Summary Data**

**The data required will be:**

The names of all the primary schools in the Dartford area (Neighbourhood)

e.g. The Anthony Roper Primary School

The addresses of the primary schools

e.g High St, Eynsford, Dartford

The post code of each of the primary schools (Neighbourhood latitude and longitude)

e.g. DA4 0AA

The latitude and longitude of each of the primary schools

e.g. 51.369382 , 0.213492

The facilities (venues) local to the primary schools:

The venue names.

e.g. The Malt Shovel

The venue categories

e.g. Pub

The local facilities will be ascertained by use of the Foursquare API

The staff will be able to use the phone number to book visits to the school, then use the post code and address with their satnavs to visit and inspect the schools.

Staff will then examine the cluster analysis that will be performed on the facilities to determine their preferred neighbourhood.

The preferred neighbourhood might be one that contains different type of facilities. It will depend on the individual staff family, some may prefer a quiet neighbourhood, some a busy one. Some may want pubs and restaurants, some may want gym facilities and so on.