

## Capstone project - Battle of the Neighborhood - Week 1

### Applied Data Science Capstone by IBM/Coursera

# Introduction: Business Problem

Whether you are single or relocating to the UAE (United Arab Emirates) with your family, there are certain areas that continue to attract expats in their droves.

Capital city Abu Dhabi and its neighbor Dubai are the hotspots of the UAE for expat activity. Skyscrapers, a thriving hospitality industry, and the inner-city beaches are attractive places to reside.

**Top of the list for many families moving to a new location is quality schooling**, and the UAE provides high-quality education all around. Many nations have schools for their expats, and there are plenty of international schools to choose from.

**Closeness to facilities** such as recreational areas is also important. There are many areas to choose from in both cities, depending on what your family needs are. Not all residential areas are in high-rise buildings, but this might best suit you and your family.

We'll be focusing on **Abu Dhabi as its the capital of the UAE** and the second-largest city after Dubai. If you choose to live here, there are ample options and we'll demonstrate how an **XPATs can pick the neighborhood** of his/her choice based on **private school, s rating and curriculum** and of course **near by venues**.

We will use our data science powers to generate a few most promising neighborhoods based on this criteria. Advantages of each area will then be clearly expressed towards best possible selection of best locations.

## Data

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

- number of existing venues nearby schools (any type of venues)
- number of private schools in general
- number of private schools based on ratings i.e. Outstanding, Very Good, Good , Acceptable, Weak, Very Weak
- number of private schools based on curriculums i.e. American , English , Indian, Japanese, German, Canadian..etc

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

- Will be using **GEOPY python library** to generate Latitude and Longitude for the Abu Dhabi Island
- Will be using the **GEOCODER python library** to geocode coordinates (Latitude and Longitude for schools in Abu Dhabi.
- Downloaded csv file for all Abu Dhabi localities (Neighborhoods) along with their coordinates (Latitudes and Longitudes) from [https://www.geopostcodes.com/Abu\\_Dhabi](https://www.geopostcodes.com/Abu_Dhabi)
- Used a free handy tool(**WEBHARVY**) <https://www.webharvy.com/> to scrape multiple pages to get school's related ratings and curriculums to a csv file.
- number of restaurants and their type and location in every neighborhood will be obtained using **FOURSQUARE API**
- Write near by venues and venue's details returned via FOURSQUARE APIs to unique separate csv files. The files will read later to data \ frames for continued testing. This is necessary since FOURSQUARE has limitation in making daily calls to their API's.