

# **COURSERA APPLIED DATASCIENCE CAPSTONE**

IBM Data Science Capstone

Week-5

**IDEA: BEST LOCATION TO BUILD A FEDERAL  
INSTITUTION IN SOUTHERN EDO STATE NIGERIA**

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## **Introduction**

Everyone knows Education is very important. There are some Federal universities in Nigeria namely FUTA, FUTMINNA, FUTO, FUNAAB. Most are situated in the Northern and Eastern Nigeria.

Federal Government need strategic information about geographical locations to map out a plan for construction. It is important to choose a very ideal location

This will serve as an eye opener for potential investment in education

## **Business Problem**

The objective of this capstone project is to analyze and select the best optimum location in the Southern Nigeria for the construction of a federal school. This will prompt the establishments of school, Using machine learning clustering to discover locations and also data science

## **Target Audience of this project**

This project will help Govrnments in knowing appropriate locations for buildings in Southern Nigeria (edo state)

## DATA

- Data required
  - I. List of neighbourhoods in SOUTHERN EDO STATE NIGERIA
  - II. Latitude and longitude coordinates of the neighbourhoods
  
- Sources of data
  - I. Wikipedia page for neighbourhoods  
([https://en.wikipedia.org/wiki/Category:Populated\\_places\\_in\\_Edo\\_State](https://en.wikipedia.org/wiki/Category:Populated_places_in_Edo_State)) ☐
  - II. Geocoder package for latitude and longitude coordinates
  - III. Foursquare API for venue data

## METHODOLOGY

- Web scraping Wikipedia page for neighbourhoods list
- Get latitude and longitude coordinates using Geocoder
- Use Foursquare API to get venue data
- Group data by neighbourhood and taking the mean of the frequency of occurrence of each venue category
- Filter venue category by Land Perform clustering on the data by using k-means clustering
- Visualize the clusters in a map using Folium

## CONCLUSION

Project was succesful