

# IBM DATA SCIENCE PROFESSIONAL CERTIFICATE

## CAPSTONE PROJECT

*Business/Tech Park in Bengaluru*



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## **Introduction:**

Bengaluru aka Bangalore is one of the fast growing metro cities in INDIA. Since it is also known as the “Silicon Valley” of India, most of the IT enthusiast and professionals find Bengaluru as their dream destination. All major IT companies, be it service providers or Product companies have their office in Bengaluru. Not just MNCs but a number of Start-Ups too have their blooming roots in Bengaluru.

Business/Tech parks are changing the outlook of the city and even expanding the rarely populated parts of the city into highly populous destinations. Finding an ideal place to construct a business/tech park to rent it on lease or to sell to the interested parties is a challenging venture. The Park has to be built in such a place where transport and other amenities are easily available. There are several business/tech parks in Bengaluru, some being very popular and pricey, yet there are some which are vacant and even never occupied.

The main goal of this project is to find an apt location for the construction of a business/tech park and also to determine whether this will be a success or failure.

### **Business Problem**

The aim of this capstone project is to analyze and select an apt location for the construction of business/tech Park in Bengaluru city, the capital of Karnataka, India. With the help of Data Science methodology and Machine Learning algorithms like, clustering this project looks forward to answer the business problem: Where would you recommend a property developer, if he/she is looking to construct a business/tech park in the city of Bengaluru?

### **Target audience**

This project mainly targets the investors and potential property developers' who are interested to invest in such a multi-million dollar venture. This also targets the prospective stake holders of such property developing companies who are keen to know the possibility and feasibility of such a giant project.

## **Data:**

- List of places in Bengaluru District along with PIN codes. The project is confined to the capital city of Bengaluru and hence will be filtered to the Bengaluru city borders
- Latitude and Longitude of these places in Bengaluru city in order to plot maps and also to get the venue data
- Venue data, specifically data related to business/tech parks in Bengaluru city. This data is necessary to cluster the regions and hence find the ample location

## **Data Source and Extraction Methodology**

The website called geonames.org host a free download page which comprises of all the postal codes along with the latitude and longitude data of the countries of the world. All the postal code data of INDIA is downloaded directly into the Local computer as a zip file from the following link address <https://download.geonames.org/export/zip/IN.zip>. Data wrangling methods will be used to get the required data regarding the area of interest that is, of Bengaluru city

Then we will use the Foursquare API to extract venue data of these locations in Bengaluru city. Foursquare has one of the largest databases of 105+ million places and is used by over 125,000 developers. Foursquare API will provide venue data according to categories, here in our case its business parks and Tech parks. This project lets us explore our data science skills, from data collection, cleaning, wrangling , using API(Foursquare) to using Machine learning model (K-Means Clustering) and Data visualization.