ANALYSIS OF SCHOOLS IN HYDERABAD

This report is part of my capstone project for the final course in Applied Data Science Specialization on Coursera.

INTRODUCTION

In this report I have analyzed the school distribution in the city of Hyderabad. This is significant in identifying the areas where the school infrastructure needs to be developed.
Inorder to obtain the distribution of schools in Hyderabad I have used **FourSquare API**
(Note: I have used FourSquare APIs search feature for this)

BACKGROUND

It is essential for everyone to have access to quality education at the school level. This is the foundation of education. There are plenty of good schools in Hyderabad, however they are clustered in certain neighbourhoods.
There are several neighbourhoods in Hyderabad where there is lack of infrastructure in terms of schools etc. It is important to identify these regions for the development of the city and to provide easy access to education for everyone.

PROBLEM

The government needs to develop school infrastructure either by constructing schools in these regions or support in the development of private schools in these areas to provide easily accessible quality education available to everyone. However in order to do this, it is essential to identify these neighbourhoods. So in this report I have analyzed the distribution of schools in Hyderabad and have identified these neighbourhoods.
Also it is important information for the people also when they have moved in the city and are looking to buy a house or rent a place to live in because they would definitely want to choose a neighbourhood which has easy access in terms of transportation and number of options of good schools for their children.

WHO WILL BE INTERESTED?

As I have explained earlier, the target audience will be the government agencies looking to build school infrastructure, the private sector agencies looking to build schools in areas with good potential and the people looking for houses in different neighbourhoods to identify which ones will be closer to good schools.

DATA Acquisition and Cleaning

DATA SOURCE

I have used beautiful soup to scrape the various neighbourhoods in Hyderabad from https://en.wikipedia.org/wiki/Category:Neighbourhoods_in_Hyderabad,_India.
Then I have obtained the Latitudes and Longitudes of these neighbourhoods using geocoder.
I have then used FourSquare API to obtain the location of various schools in each neighbourhood setting the limit to 100 for each neighbourhood and a radius of 600 metres.
Besides this I have scraped information pertaining to the best schools in Hyderabad from https://yellowslate.com/blog/best-schools-in-hyderabad-2020/

Using this I have highlighted these schools to give an idea of location of best schools in the city.

PREPROCESSING THE DATA

After obtaining the location of various schools in the city, there were some unwanted entries such as ‘driving schools’, ‘schools of sound’ etc. I have dropped these entries. Also there was duplication of data because it was possible that a school was within 600 metres distance from each neighbourhood as a result of which it may appear twice with the same latitude and longitude in both these neighbourhoods. I have removed such duplicates and have kept the first copy of such data. Also there were several schools whose category was mismatched or not clear. I have thus categorized them based on the data to whether they are high schools, primary/play schools, student centers or their category was not mentioned.

FINAL FORM OF DATA USED

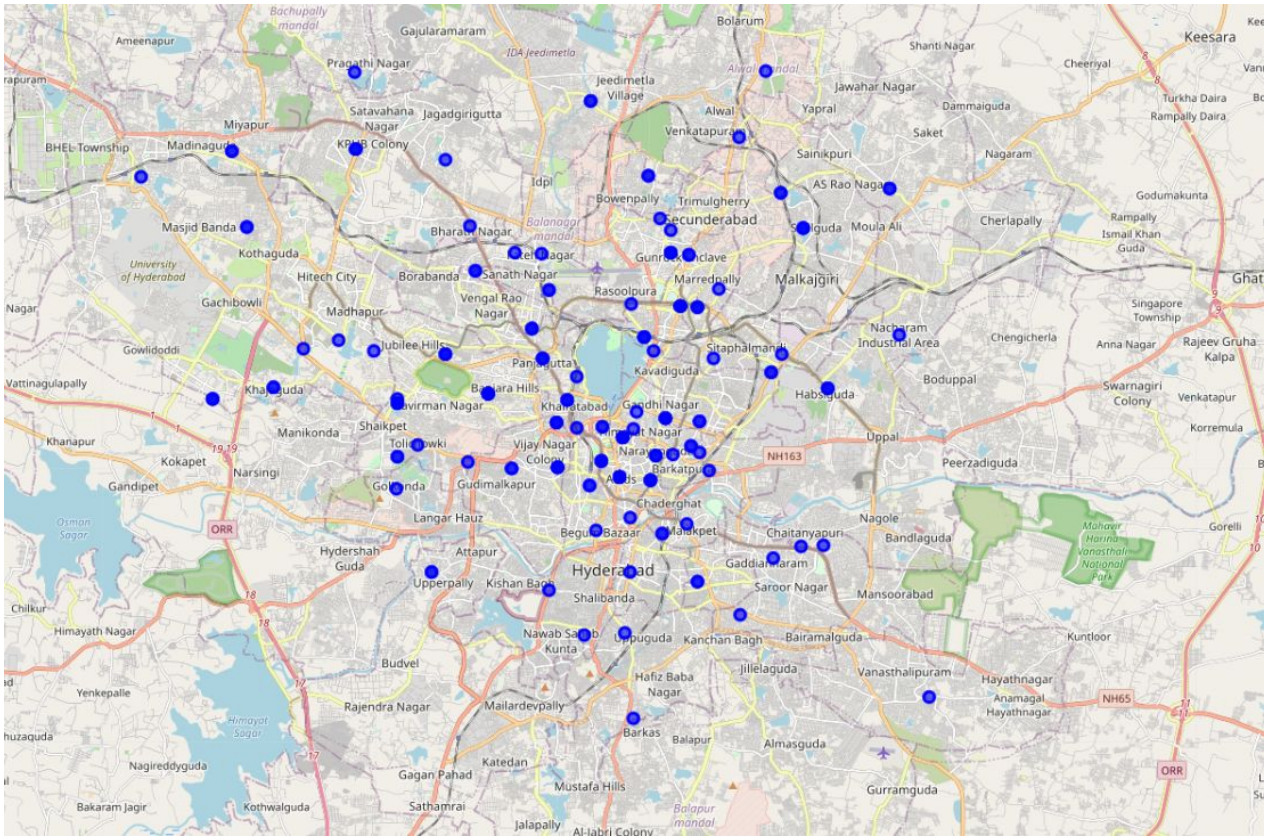
This is an image of the first 10 entries of the dataframe used.

Out[76]:

	Neighbourhood	Latitude	Longitude	School	School_Latitude	School_Longitude	School_category
0	A.C. Guards	17.392977	78.456867	Genesis high school	17.395249	78.457319	High School
1	A.C. Guards	17.392977	78.456867	Govt High School, Vijaya Nagar Colony	17.394348	78.454649	High School
2	A.C. Guards	17.392977	78.456867	St. Anns Girls High School For Girls	17.394340	78.453383	High School
3	A.C. Guards	17.392977	78.456867	hyderabad international residential school	17.385760	78.460598	Not Mentioned
4	Abids	17.389800	78.476580	Diamond Jubilee High School	17.389743	78.474340	High School
5	Abids	17.389800	78.476580	John's High School	17.393322	78.476040	High School
6	Abids	17.389800	78.476580	Little Flower High School	17.393032	78.474703	High School
7	Abids	17.389800	78.476580	Little Flower High School	17.392965	78.474798	High School
8	Abids	17.389800	78.476580	St. Georges Grammar Prep School	17.393869	78.477888	Student Center
9	Abids	17.389800	78.476580	Rosary convent high school	17.393670	78.476690	High School
10	Abids	17.389800	78.476580	St. Georges Grammar School	17.394501	78.477496	Not Mentioned

Each row corresponds to a particular school and its information, i.e. neighbourhood it belongs to, its category, name and it location.
There are a total of 167 entries in the dataframe.
Using this data I have analyzed the distribution of schools in Hyderabad.

Inorder to give you a rough idea, this is the distribution of the given data plotted using Folium


Bachupally mandal
Gajularamaram
Ameenapur
Pragathi Nagar
IDA Jeedimetla
Bolarum
Keesara
Shanti Nagar
Cheeriyal
Jeedimetla Village
Jawahar Nagar
Satavahana Nagar
Jagadgirigutta
Miyapur
Alwal
Yapral
Dammaiguda
Turkha Daira
Rampally Daira
Venkatapura
Saket
BHEL Township
Madinaguda
KPHB Colony
Sainikpuri
Nagaram
Idpl
AS Rao Nagar
Bowenpally
Trimulgherry
Godumakunta
Secunderabad
Masjid Banda
Bharat Nagar
Balanagar mandal
Moula Ali
Cherlapally
Rampally
Ismail Khan Guda
Kothaguda
University of Hyderabad
Hitech City
Borabanda
Sanath Nagar
Gunrock Enclave
Marredpally
Malkajgiri
Ghat
Gachibowli
Vengal Rao Nagar
Rasoolpura
Singapore Township
Madhapur
Nacharam Industrial Area
Chengicherla
Anna Nagar
Rajeev Gruha Kalpa
Gowlidoddi
Jubilee Hills
Sitaphalmandi
Kavadiguda
Boduppal
Vattinagulapally
Khajaguda
Banjara Hills
Habsiguda
Swarnagiri Colony
Venkatapur
Vengal Rao Nagar
Khairatabad
Gandhi Nagar
Manikonda
Shaikpet
Tolichowki
Vijay Nagar Colony
Uppal
Korremula
Khanapur
Kokapet
Narsingi
Barkatpura
NH163
Peerzadiguda
Gandipet
Golconda
Gudimalkapur
Chaderghat
Langar Hauz
Nagole
Osman Sagar
ORR
Begum Bazaar
Malakpet
Chaitanyapuri
Bandlaguda
Mahavir Harina Vanasthali National Park
Gorelli
Hydershah Guda
Attapur
Gaddiannaram
Upperpally
Kishan Bagh
Hyderabad
Saroor Nagar
Shalibanda
Mansoorabad
Chilkur
Himayath Nagar
Nawab Sahab Kunta
Uppuguda
Kanchan Bagh
Bairamalguda
Kuntloor
Budvel
Jillelaguda
Vanasthalipuram
Hayathnagar
Yenkepalle
Hafiz Baba Nagar
Anamagal Hayathnagar
NH65
Rajendra Nagar
Mailardevpally
Himayat Sagar
Barkas
Balapur
Almasguda
Nagireddyguda
Katedan
Gagan Pahad
Mustafa Hills
Gurramguda
ORR
Bakaram Jagir
Kothwalguda
Sathamrai
Jalapally
Balapur mandal
Al-Jabri Colony