

IBM Applied Data Science Capstone Project

- By Nishant Agarwal (May 2020)

Title – *Opening a Hospital around Jaipur District,
Rajasthan, India*

A description of the problem and a discussion of the background:

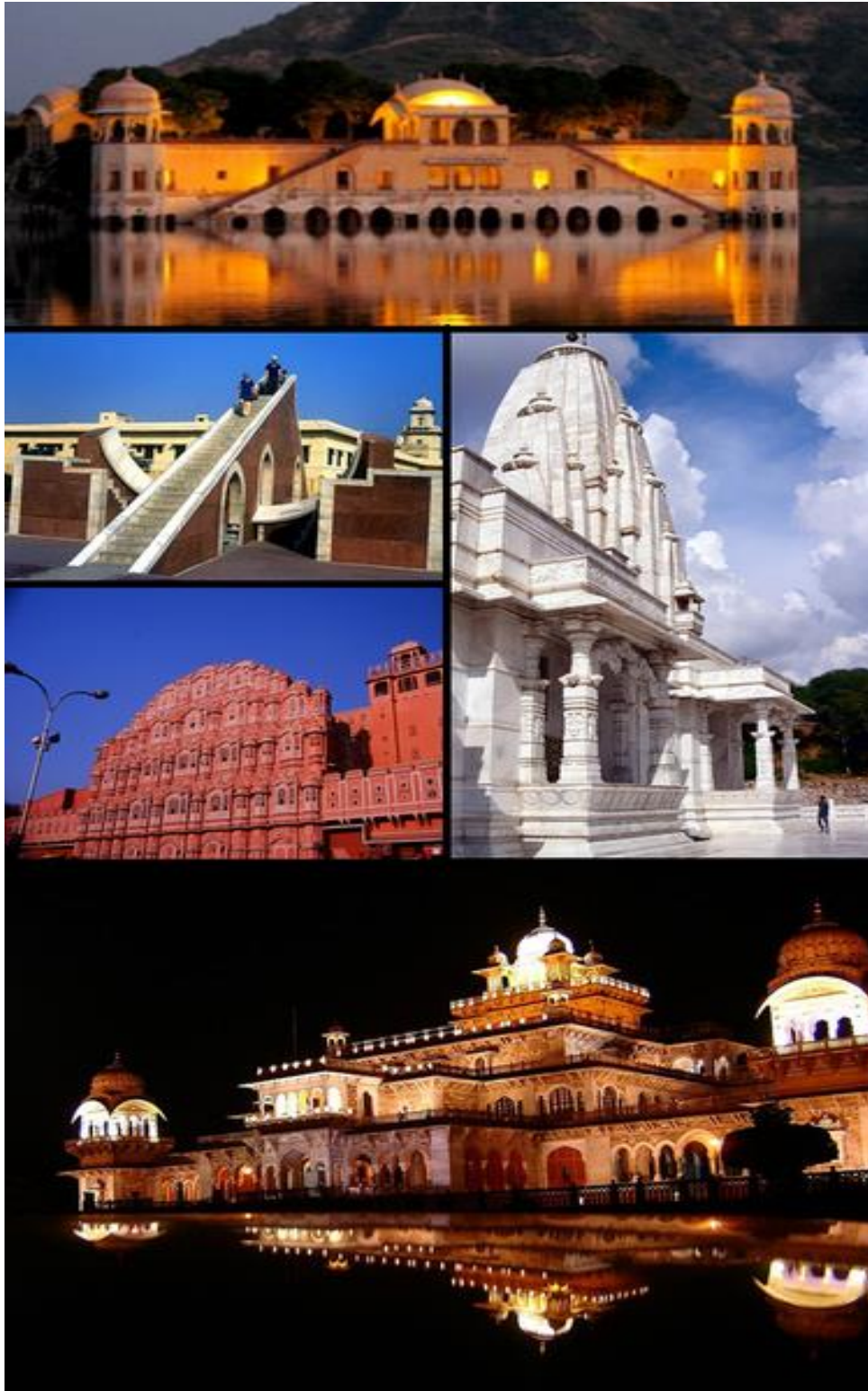
With increase in population everyday in India more health cases arises everyday such as Accidents, Bacterial/Viral disease and other various problems. Due to this it is certain to say that we need Hospitals as much as we can which include various facilities to treat all kinds of people, provide various kinds of health facilities, contain research facilities for interested researchers in medical field, provide health guidance, provide employment to peoples and include various more advantageous facilities.

Jaipur is the capital and the largest city of the [Indian state](#) of [Rajasthan](#). As of 2011, the city had a population of 3.1 million, making it the [tenth most populous city](#) in the country. Jaipur is also known as the Pink City, due to the dominant colour scheme of its buildings. It is located 268 km (167 miles) from the national capital [New Delhi](#), India. It is also a district of Rajasthan which covers various cities under it. In addition to its role as the provincial capital, educational, and administrative centre, the economy of Jaipur is fuelled by tourism, gemstone cutting, the manufacture of jewellery and luxury textiles, and information technology.

In such a populous city/district/capital there occur various health cases on daily basis which includes all ages of peoples. So, we greatly require to build a Hospital such that health casualties could be decreased and it will help with other factors like employment too.

So, our problem would be to search for the best place in Jaipur district (which includes many cities other than Jaipur) to build a Hospital which could cover maximum possible cities near it such that more people could access to it which

would definitely benefit everyone. The **target audience** is all the people who live in neighbouring cities or towns, those of which are in need of health/medical facilities and also the people who want employment as a Doctor/Nurse/Researcher/Cleaning staff/Security staff etc.



A description of the data and how it will be used to solve the problem:

Data containing Pin Codes, latitude, longitude and other stuff of India was being taken and used from Kaggle (<https://www.kaggle.com/n1sarg/indian-postal-codes>). This data is then modified manually and useful information related to only Jaipur district was being extracted to be used for the project. It would be then be cleared and a Data Frame which include all the useful information which we require will be made using pandas and other libraries.

With the help of this data, Foursquare API tools and various Data Science tools like clustering, k means, pandas etc various operations will be done on this to form clusters of cities and finally it would be found that which location is best suited for the Hospital to be build such that it covers most city and will be in reach for best possible number of peoples.

Here, Foursquare location data would be a great help which will help in actually visualizing clusters of cities on the map where we just have to pass the latitudes and longitude of the location from the data.

The data after manual alteration consist of Pin Codes, city name, their respective latitude and longitude. An example of it as follows:

PIN_CODE	City	Latitude	Longitude
302001	ChandpoleBazar	26.9196	75.7878
302001	Jaipur G.P.O.	26.9196	75.7878