

IBM Applied Data Science Capstone Project

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

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

In today's time, the education field is growing exponentially and in that too there seems to be competition as to who is the best. In this competition, the students/professors find it hard as to which they should join. When this decision is over, a big yet important factor arises that is where to live and how to manage for it within certain conditions. Many institutes provide their facilities for it nowadays where most of the essentials are being done.

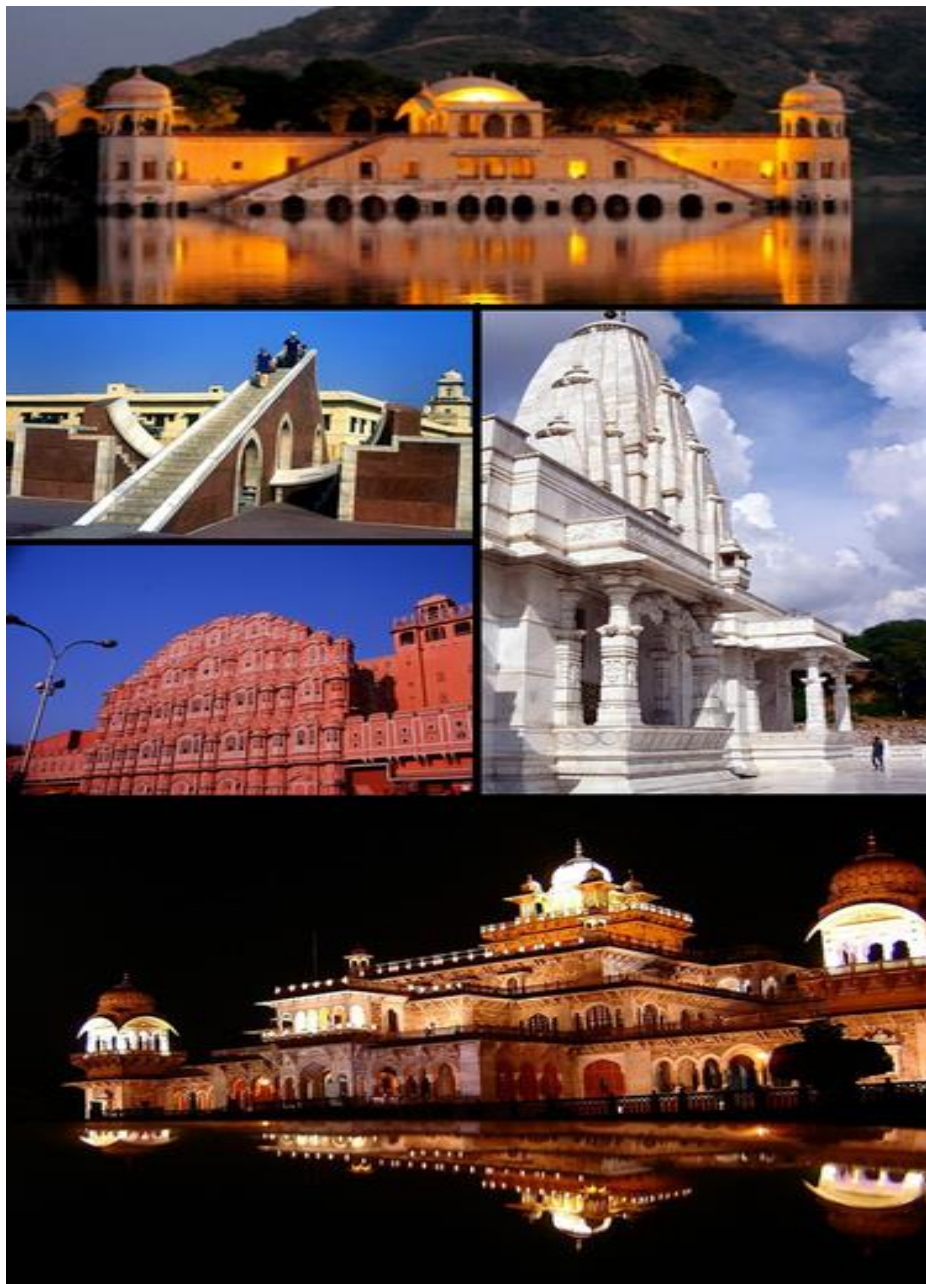
As for the other institutes, people have to search for accommodation within their taste and budget. This arises the need for hostels which include accommodation to live with various facilities included as well as food mess in it which depends upon the owner owning the hostel.

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. Jaipur is nowadays being popular for various good institutes for study especially for the entrance exams like JEE & NEET and not to mention some good college/universities of all sorts of departments.

In such a populous city/district/capital, there occurs a need for hostels for students/teachers such that they can live like home, away from their homes.

and most of their demand is to take the one with best possible location such that they have access to most daily essentials and entertainment places to visit.

So, our problem would be to search for the best place in Jaipur district (which includes many cities other than Jaipur) to build a Hostel 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 are in search for Hostels for accommodation in best location, peoples who want to buy and open one at a best possible location and someone who wants to work or provide work to a hostel for income purpose.



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 Hostel to be build such that it covers most city, will be in reach for best possible number of peoples and people can access most of their demands.

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. With the help of this we would select a location which contain less number of other hostels (for competition case) and more number of nearby venues.

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