

A visit to Shimla City (Hill Queen) of India

Arun Kumar

June 01, 2020

Index

- Background
- Introduction
- Data Description
- Methodology Adopted
- Results
- Discussion
- Conclusion & Future Scope



Preamble

- Every year more than **one million tourists** visit the Shimla City.
- The tourists find it difficult to search the best venues with budgetary constraints and they also want to visit the venues that are near to the tourist places of Shimla, as they have limited time.

Geographical Information about Shimla

- **Elevation: 2,276 m**
- **Area: 35.34 km²**
- **Weather: 11 °C, Wind NE at 8 km/h, 97% Humidity**
- **Population: 1.7 lakhs (2011)**
- **Local time: Sunday, 6:46 pm**
- **Metro population: 1,71,640**

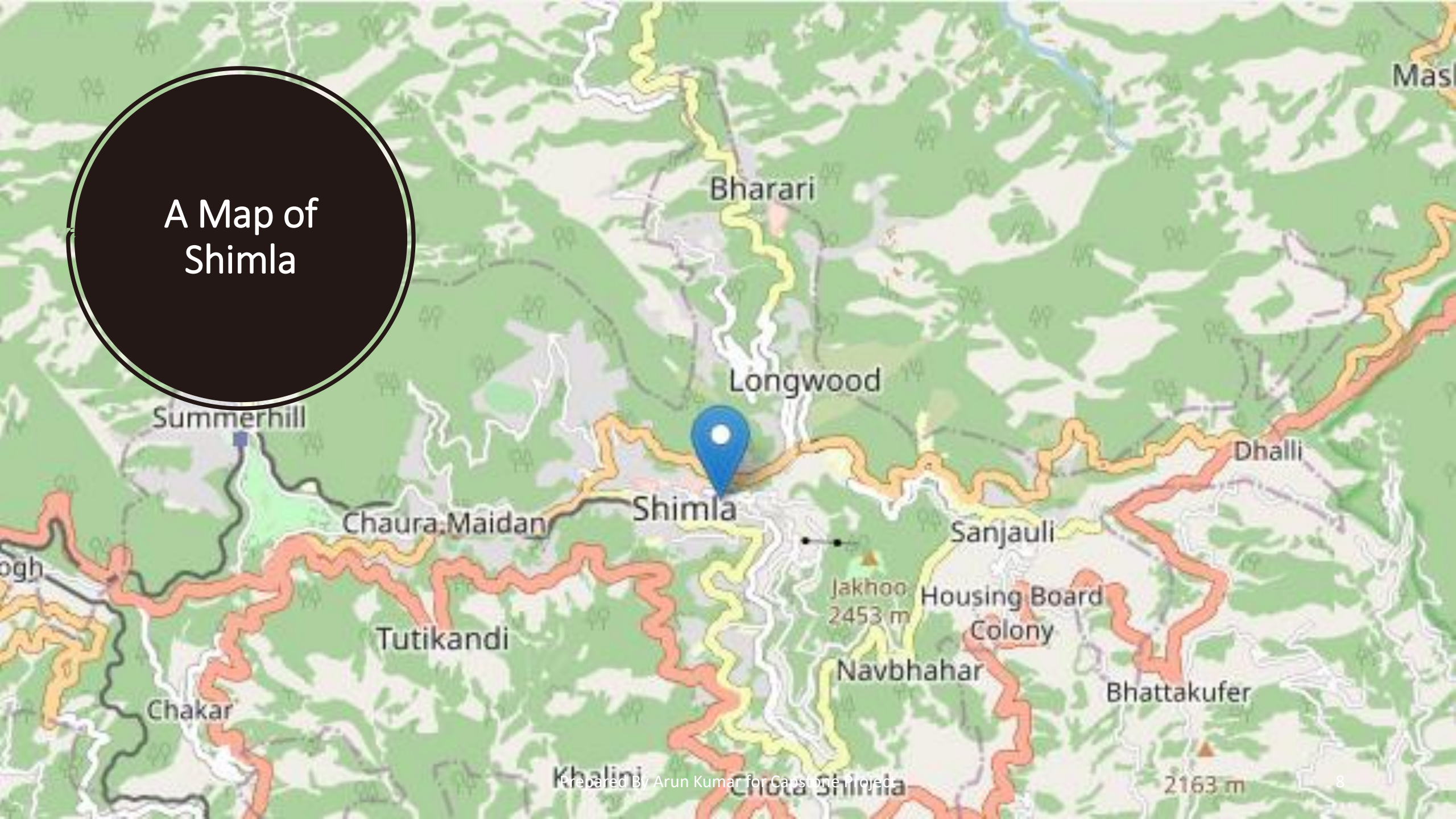
Introduction

- to help the tourists of this city by helping them by answering the following questions:
 - Get information for which of the eating/drinking venues available within the 4km periphery from main Shimla?
 - Get information for which of the eating/drinking venues available within the 4km periphery from main Shimla are having low prices?
 - Get information for which of the eating/drinking venues available within the 4km periphery from main Shimla have good ratings?
 - Get information for which of the eating/drinking venues available within the 4km periphery main Shimla are cheaper and have good rating?

Data Description

- **Data Description**
- The Map of Shimla city can be created using the **folium library**.
- The data about the different eating/drinking venues like name, longitude, latitude, etc. within the radius of 4km from the centre of Shimla shall be fetched from **Foursquare API**.
- The data about the different eating/drinking venues like name, longitude, latitude, address, rating, category, price etc. within the radius of 4km from the centre of Shimla shall be fetched from **Zomato API**.

A Map of Shimla



Methodology Adopted

- 1. Data Collection**
- 2. Data Cleaning**
- 3. Data Analysis**
- 4. Results**
- 5. Discussion**
- 6. Conclusion**

Results

1. Data Collection Results

	name	categories	lat	lng	venue	latitude	longitude	price_for_two	price_range	rating	address	lat_diff	lng_diff
0	Shimla	City	31.1053	77.1717	Dobby's	31.1052	77.1716	350	2	0	Mall Road, Near Syndicate Bank, Summer Hill, S...	-0.0001	-0.0001
1	The Mall	Plaza	31.1046	77.1751	Honey Hut	31.1044	77.1750	450	2	4.2	Khadi Bhawan, Middle Bazaar, Mall Road, Summer...	-0.0002	-0.0001
2	Lakkar Bazaar	Furniture / Home Store	31.1065	77.1784	Fresh Juice Shop	31.1063	77.1782	150	1	0	Lakkar Bazar, Longwood, Shimla	-0.0002	-0.0002
3	The Ridge, Shimla	Monument / Landmark	31.1048	77.1758	Book Cafe	31.1050	77.1760	200	1	0	Takka Bench, Ridge, The Mall, Summer Hill, Shimla	0.0002	0.0002
4	Wake and Bake Cafe	Café	31.1047	77.1732	Wake & Bake	31.1047	77.1732	800	3	3.9	34/2, The Mall Shimla, Teh. & Amp Distt, Shiml...	0.0000	0.0000
5	Indian coffee house	Coffee Shop	31.1054	77.1710	Indian Coffee House	31.1054	77.1713	350	2	3.8	1, The, Mall Rd, Lower Bazar, Shimla, Himachal...	0.0000	0.0003
6	The Oberoi Cecil	Hotel	31.1032	77.1549	The Restaurant - The Oberoi Cecil	31.1032	77.1550	2200	4	3.9	The Oberoi Cecil, Nabha, State Museum Road, Lo...	0.0000	0.0001

Fig.: Sample of merged Data set of venues fetched using APIs

Results

2. Data Cleaning Results

2	Lakkar Bazaar	Furniture / Home Store	31.1065	77.1784	Fresh Juice Shop	31.1063	77.1782	150	1	0	Lakkar Bazar, Longwood, Shimla	-0.0002	-0.0002
---	---------------	------------------------	---------	---------	------------------	---------	---------	-----	---	---	--------------------------------	---------	---------

Fig.: Sample of mismatched Data set of venues fetched using APIs

Results

2. Data Cleaning Results

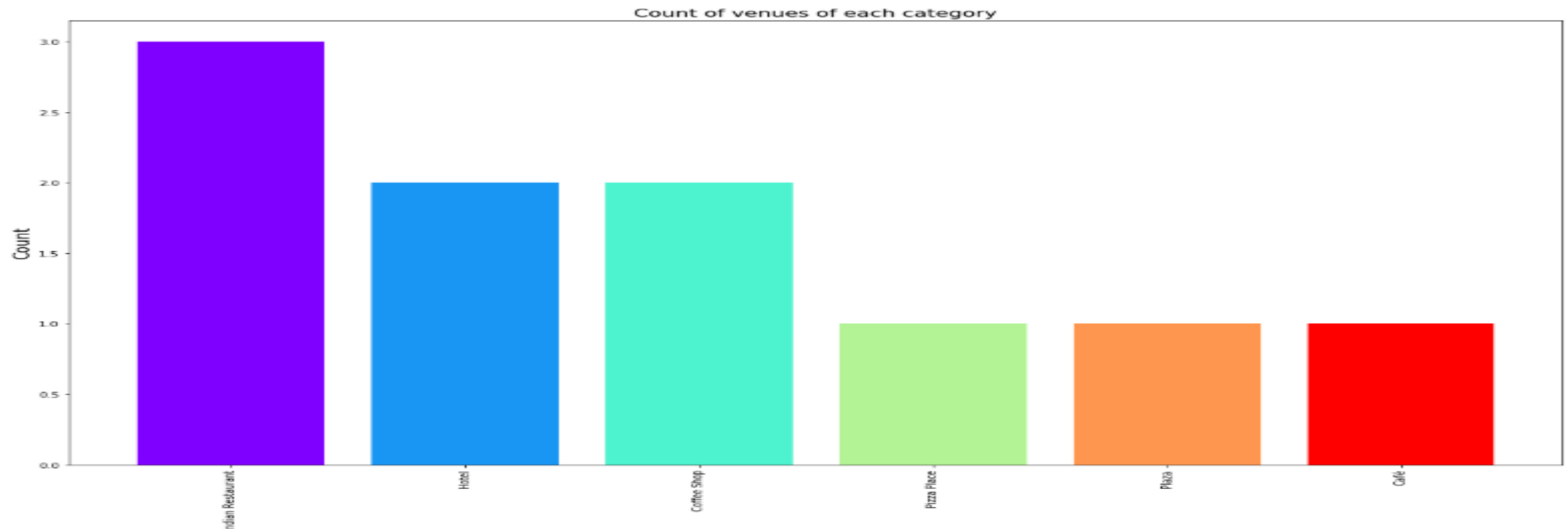
	categories	venue	latitude	longitude	price_range	rating	address	average_price
0	City	Dobby's	31.1052	77.1716	2	0	Mall Road, Near Syndicate Bank, Summer Hill, S...	175.0
1	Plaza	Honey Hut	31.1044	77.1750	2	4.2	Khadi Bhawan, Middle Bazaar, Mall Road, Summer...	225.0
2	Monument / Landmark	Book Cafe	31.1050	77.1760	1	0	Takka Bench, Ridge, The Mall, Summer Hill, Shimla	100.0
3	Café	Wake & Bake	31.1047	77.1732	3	3.9	34/2, The Mall Shimla, Teh. & Amp Distt, Shiml...	400.0
4	Coffee Shop	Indian Coffee House	31.1054	77.1713	2	3.8	1, The, Mall Rd, Lower Bazar, Shimla, Himachal...	175.0
5	Hotel	The Restaurant - The Oberoi Cecil	31.1032	77.1550	4	3.9	The Oberoi Cecil, Nabha, State Museum Road, Lo...	1100.0
6	Indian Restaurant	Baljees Sweet Shop	31.1048	77.1729	1	4.1	Near Scandal Point, Summer Hill, Shimla	150.0
7	Indian Restaurant	Sher-e-Punjab	31.1033	77.1770	2	2.8	Mall Road, Summer Hill, Shimla	300.0
8	Pizza Place	Domino's Pizza	31.1049	77.1728	2	3.4	24, Mall Road, Summer Hill, Shimla	200.0
9	Coffee Shop	Cafe Coffee Day	31.1044	77.1747	2	2.8	Middle Bazaar, Mall Road, Summer Hill, Shimla	250.0

Fig.: Sample of Data set generated after data cleaning

Results

3. Data Analysis Results

(a) Analysis on the basis of Category

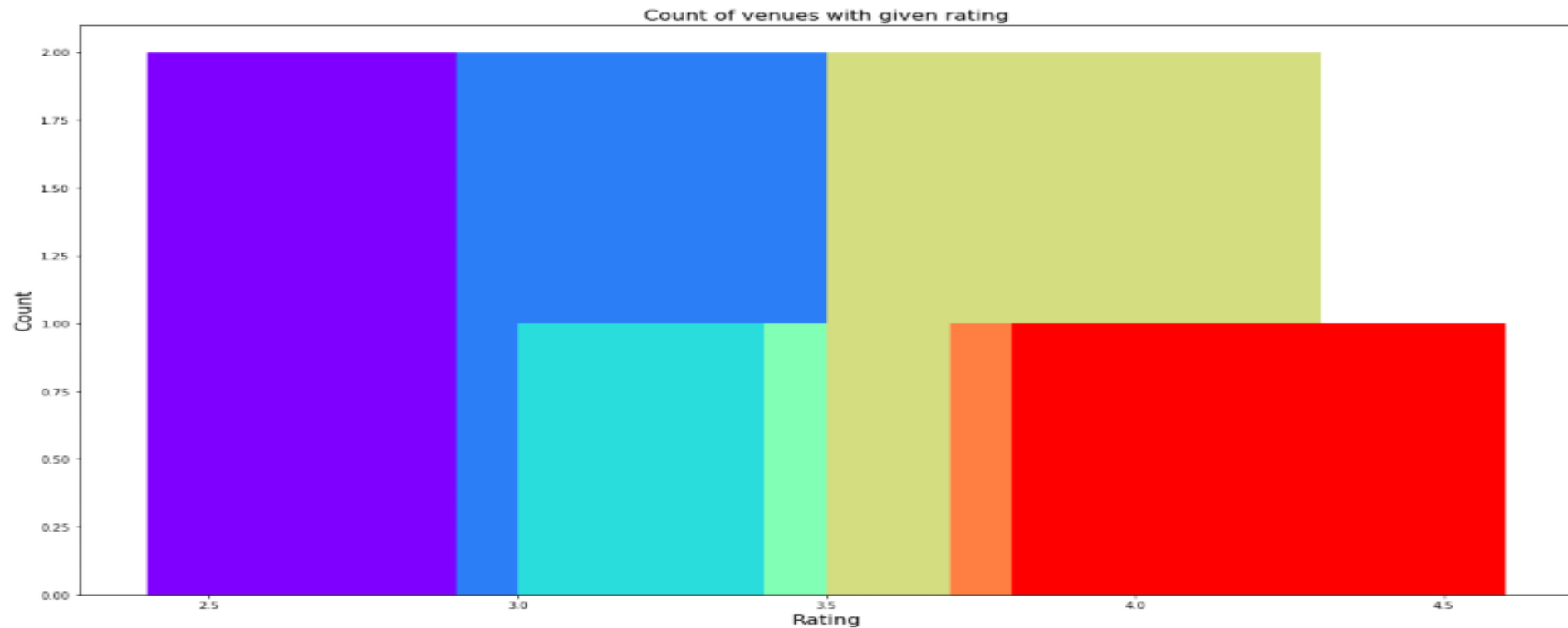


Prepared By Arun Kumar for Capstone Project
Fig.: Bar Plot showing the number of venues for each category

Results

3. Data Analysis Results

(b) Analysis on the basis of Rating of Venues



Prepared By Arun Kumar for Capstone Project
Fig.: Bar Plot showing the number of venues for each rating

3. Data Analysis Results

(c) Analysis on the basis of dividing the venues on the basis of ratings into Low, Okay, Good and very good categories

1 to 2: Low shown with RED
2 to 3: Okay shown with ORANGE
3 to 4 Good shown with GREEN
4 to 5 Very Good shown with
DARKGREEN

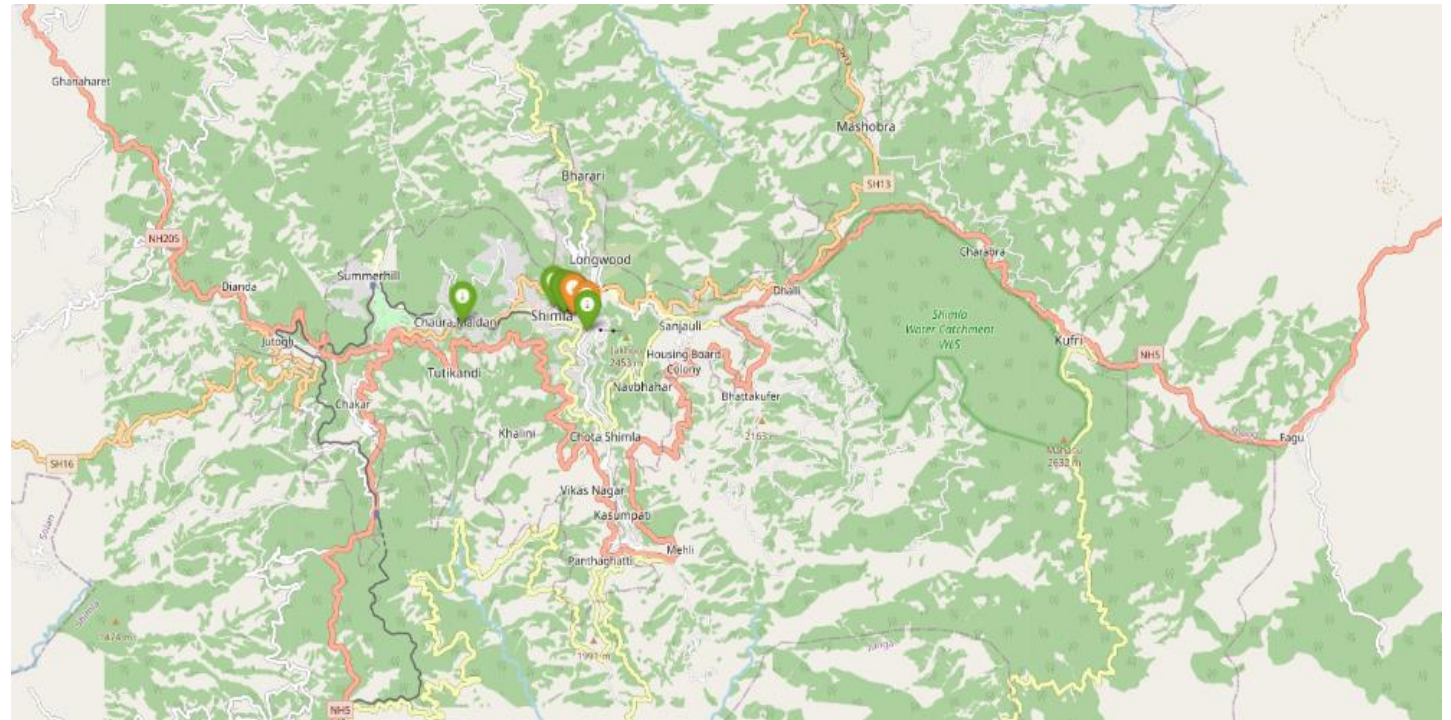


Fig.: Division of the venues on the basis of ratings into Low, Okay, Good and very good categories

Results

3. Data Analysis Results

(d) Analysis on the basis of venues with Average Price per Person expenses

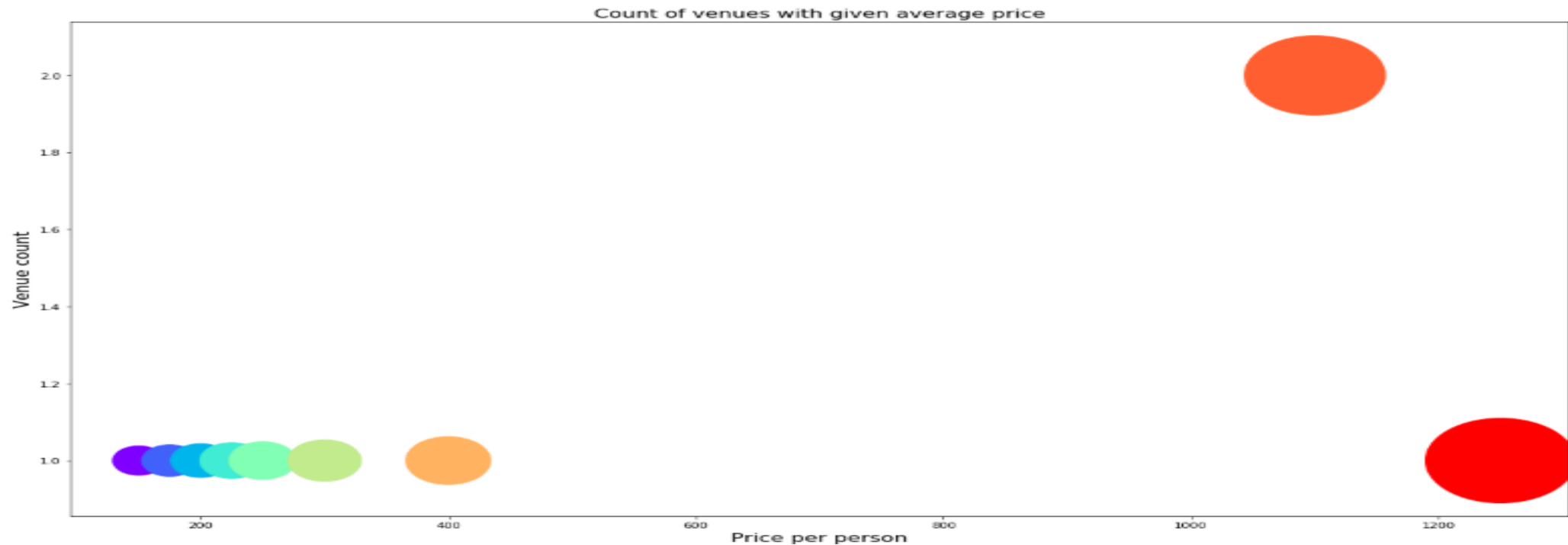


Fig.: Division of the venues on the basis of Average Price per person expenses

Results

3. Data Analysis Results

(e) Use of KMeans Clustering

	cluster_labels	categories	venue	latitude	longitude	price_range	rating	address	average_price	rating_bin
1	0	Plaza	Honey Hut	31.1044	77.1750	2	4.2	Khadi Bhawan, Middle Bazaar, Mall Road, Summer...	225.0	Very good
3	0	Café	Wake & Bake	31.1047	77.1732	3	3.9	34/2, The Mall Shimla, Teh. & Amp Distt, Shiml...	400.0	Good
4	0	Coffee Shop	Indian Coffee House	31.1054	77.1713	2	3.8	1, The, Mall Rd, Lower Bazar, Shimla, Himachal...	175.0	Good
5	1	Hotel	The Restaurant - The Oberoi Cecil	31.1032	77.1550	4	3.9	The Oberoi Cecil, Nabha, State Museum Road, Lo...	1100.0	Good
6	0	Indian Restaurant	Baljees Sweet Shop	31.1048	77.1729	1	4.1	Near Scandal Point, Summer Hill, Shimla	150.0	Very good

Fig.: Sample dataset for dividing the venues into two clusters with label 1 and 0

Results

3. Data Analysis Results

(e) Use of KMeans Clustering

	cluster_labels	categories	venue	latitude	longitude	price_range	rating	address	average_price	rating_bin
0	0	Plaza	Honey Hut	31.1044	77.1750	2	4.2	Khadi Bhawan, Middle Bazaar, Mall Road, Summer...	225.0	Very good
1	0	Café	Wake & Bake	31.1047	77.1732	3	3.9	34/2, The Mall Shimla, Teh. & Amp Distt, Shiml...	400.0	Good
2	0	Coffee Shop	Indian Coffee House	31.1054	77.1713	2	3.8	1, The, Mall Rd, Lower Bazar, Shimla, Himachal...	175.0	Good
3	0	Indian Restaurant	Baljees Sweet Shop	31.1048	77.1729	1	4.1	Near Scandal Point, Summer Hill, Shimla	150.0	Very good
4	0	Indian Restaurant	Sher-e-Punjab	31.1033	77.1770	2	2.8	Mall Road, Summer Hill, Shimla	300.0	Okay
5	0	Pizza Place	Domino's Pizza	31.1049	77.1728	2	3.4	24, Mall Road, Summer Hill, Shimla	200.0	Good
6	0	Coffee Shop	Cafe Coffee Day	31.1044	77.1747	2	2.8	Middle Bazaar, Mall Road, Summer Hill, Shimla	250.0	Okay

Fig : Sample dataset for clusters 0

Prepared By: Arun Kumar for Capstone Project

Results

3. Data Analysis Results

(e) Use of KMeans Clustering

cluster_labels		categories	venue	latitude	longitude	price_range	rating	address	average_price	rating_bin
0	1	Hotel	The Restaurant - The Oberoi Cecil	31.1032	77.1550	4	3.9	The Oberoi Cecil, Nabha, State Museum Road, Lo...	1100.0	Good
1	1	Hotel	Seventh Heaven	31.1021	77.1773	4	3.3	Hotel Combermere, Mall Road, Summer Hill, Shimla	1250.0	Good
2	1	Indian Restaurant	HPTDC Goofa Ashiana Bar and Restaurant	31.1047	77.1742	4	3.3	Ridge, The Mall, Longwood	1100.0	Good

Fig.: Sample dataset for clusters 1

Results

3. Data Analysis Results

(e) Use of KMeans Clustering



Fig.: Map showing the two clusters 0 and 1 in green and red colours respectively

Discussion

For the analysis done in a number of conclusions can be drawn which can be useful to the tourists who wants to visit the Hill Queen, Shimla.

1. Hotels/Restaurants with Price Range greater than Rupees 1000/-

- **For cluster 1:** The Restaurant-The Oberoi Cecil has a latitude value of **31.1032** and a longitude value of **77.1550** has rating **3.9**
- **For Cluster 1:**The Restaurant-Seventh Heaven has a latitude value of **31.1021** and a longitude value of **77.1773** has rating **3.3**
- **For Cluster 1:**The **HPTDC Goofa Ashiana Bar and Restaurant** has a latitude value of **31.1047** and a longitude value of **77.1742** has rating **3.3**

2. Hotels/Restaurants with Price Range between Rupees 200/- to Rupees 400/-

- **For cluster 0:** The Restaurant- Honey Hutt has a latitude value of **31.1044** and a longitude value of **77.1550** has rating **4.2**
- **For Cluster 0:**The Restaurant-Wake and Bake has a latitude value of **31.1047** and a longitude value of **77.1732** has rating **3.9**
- **For Cluster 0:**The **Balaji Sweet Shop** has a latitude value of **31.1048** and a longitude value of **77.1729** has rating **3.3**

Conclusion

The objective of this project is to help the visitors to find the eating/drinking venues who are visiting Shimla. The observations have been shown through maps and it is suggested to the tourists to visit Lower Bazar, Mall Road, for Lakkar Bazar for eating/drinking and can find the venues as per their budget as well as ratings of the venues.

Thank You