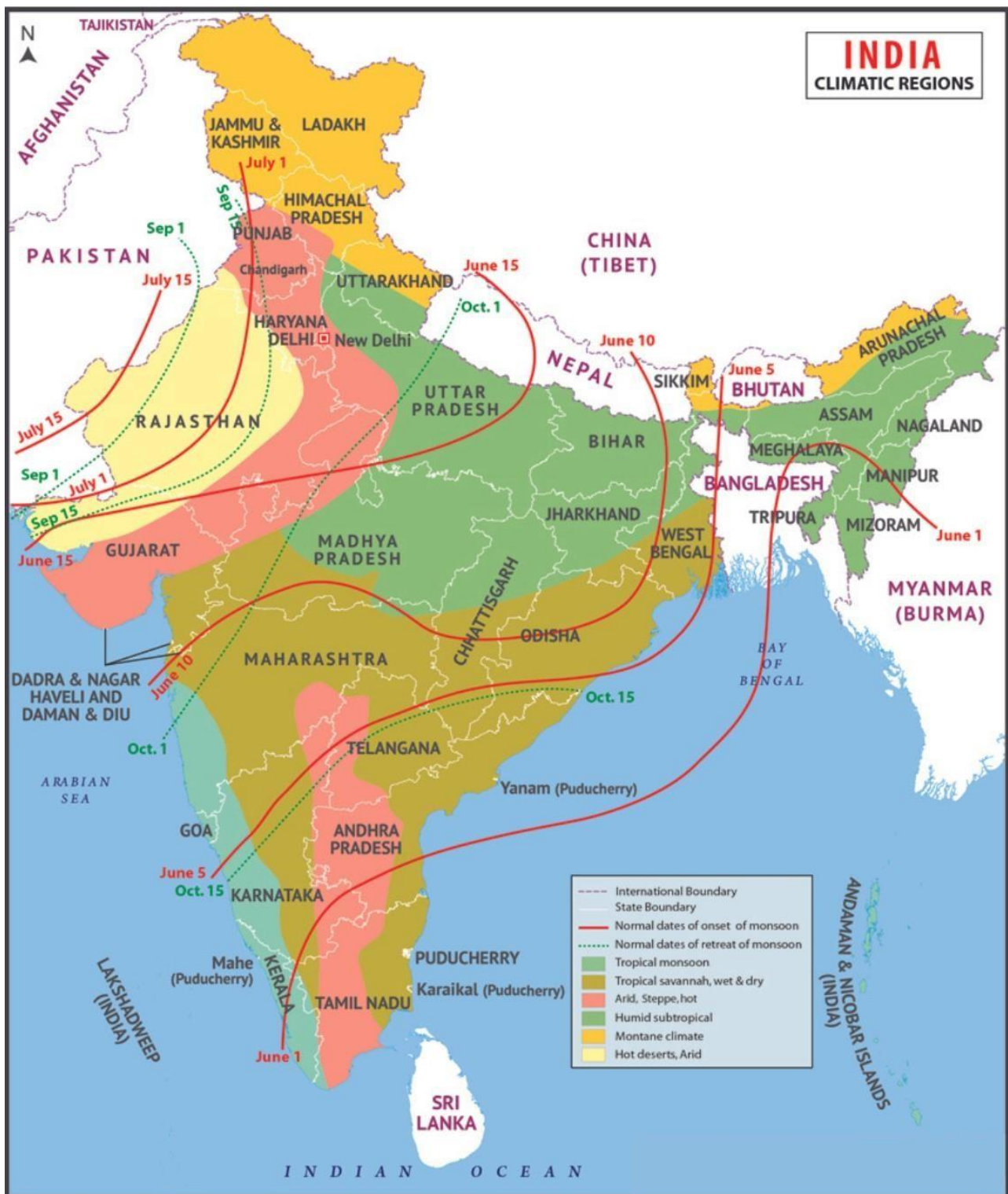# Finlatics Project 2

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Case Study

The above mentioned map showcases the various seasons that are experienced across states in India. A key focus of the map is on the onset and retreat of the South West Monsoons in the country across various states and regions.

The climates of India are mainly divided into four different groups. The classification of these groups is based on the Koppen climate classification system.

- o **Tropical Wet (Humid):**The tropical wet (humid) climate group in India is separated into two subparts: the tropical wet and dry climate, often known as the savannah climate, and the tropical monsoon climate. A tropical monsoon climate prevails in the Western Ghats, the Malabar Coast, southern Assam, Lakshadweep, and the Andaman & Nicobar Islands. It has seasonally significant rain and moderate to high temperatures. The wettest months are May through November, and the rain that falls during this time is more than enough for vegetation to grow all year. The most typical climate in the nation is the savannah climate or a tropical wet and dry climate. Except for some areas of the Western Ghats, it is most prevalent throughout the country's inland peninsula. The humid summer months last from June to September, and they are extremely hot.
- o **Tropical Dry:**There are three subgroups of the tropical dry climate group: (a) tropical semiarid (steppe), (b) subtropical arid (desert), and (c) subtropical semi-arid (steppe). The tropical semi-arid (steppe) climate is found in Karnataka, central Maharashtra, some regions of Tamil Nadu, and Andhra Pradesh. In this type of environment, rainfall is quite unpredictable, and the hot, dry summers last from March through May. Western Rajasthan experiences a subtropical arid (desert) climate with irregular and sparse rainfall. The subtropical semi-arid (steppe) climate is present in the tropical desert regions that stretch from Punjab and Haryana to Kathiawar. In this environment, the summertime high temperature can reach 40°C, while rains are unpredictable and typically fall during the summer monsoon season.
- o **Subtropical Humid Climate:**The majority of northern and northeastern India experiences this climate. Summers are quite hot, and winters can see temperatures as low as 0°C. The majority of the time, rain falls in the summer, however certain places also have snowfall or sporadic rain throughout the winter. The hottest months are May and June, while frost can sometimes be found in the winter for a few months. o **Mountain Climate::** In the Himalayas, the temperature drops by 0.6°C for every 100 m of elevation gain, resulting in a variety of climates, from tropical to tundra. The northern side of the western Himalayas, known as the trans-Himalayan region, is chilly, dry, and windswept. In contrast to the well-exposed slopes, the leeward side of the mountains experiences less rain. The months of December through February saw the most snowfall.

Answer the following questions based on data collection and visualisation of data, using MS-Excel.

Hotel Dataset.(click to download).

1. Which state has the highest number of hotels? Depict this via a bar graph that compares all states.
2. Which states have three types of climatic conditions? (convert the map, an unstructured data, to an Excel file in a structured format and mention the number of climates along with the state)
3. Among the northeastern states which are best to set up a hotel? Use Clustered Column Chart and give recommendations for hotel industry investors.
4. Customise the pivot charts to add/change the fields in the fields list with other fields and by using chart styles to customise the charts. (choose the data and parameters according to your choice)
5. Which is the best state for setting up a hotel? Why?
6. What is the average number of days the rainy season lasts in Indian states?

Instruction Set

1. Study the map and draw out key indicating parameters in a list format. Also, think about other parameters that indirectly affect our goal.
2. Collection of data.
3. Do descriptive and diagnostic analysis to fill the missing data points and scan the outliers.
4. Creation of separate sheets for each question and creating pivot tables accordingly.
5. Draw out conclusions by observing the visual charts made from the pivot tables.

6. All the best! Submit your answers in a PDF file.

Hotel Dataset

*Table 1. Indian States with Number of Hotels*

S.No.	States	No. of Hotels
1	Andhra Pradesh	34000
2	Arunachal Pradesh	5000
3	Assam	25000
4	Bihar	4000
5	Chhattisgarh	25000
6	Goa	44000
7	Gujarat	107000
8	Haryana	48000
9	Himachal Pradesh	83000
10	Jharkhand	4000
11	Karnataka	40000
12	Kerala	672000
13	Madhya Pradesh	14000
14	Maharashtra	102000
15	Manipur	3000
16	Meghalaya	2000
17	Mizoram	1000
18	Nagaland	1000
19	Odisha	20000
20	Punjab	11000
21	Rajasthan	72000
22	Sikkim	12000
23	Tamil Nadu	116000
24	Telangana	34000
25	Tripura	1000
26	Uttar Pradesh	58000
27	Uttarakhand	50000
28	West Bengal	87000

No. of Hotels in states of india
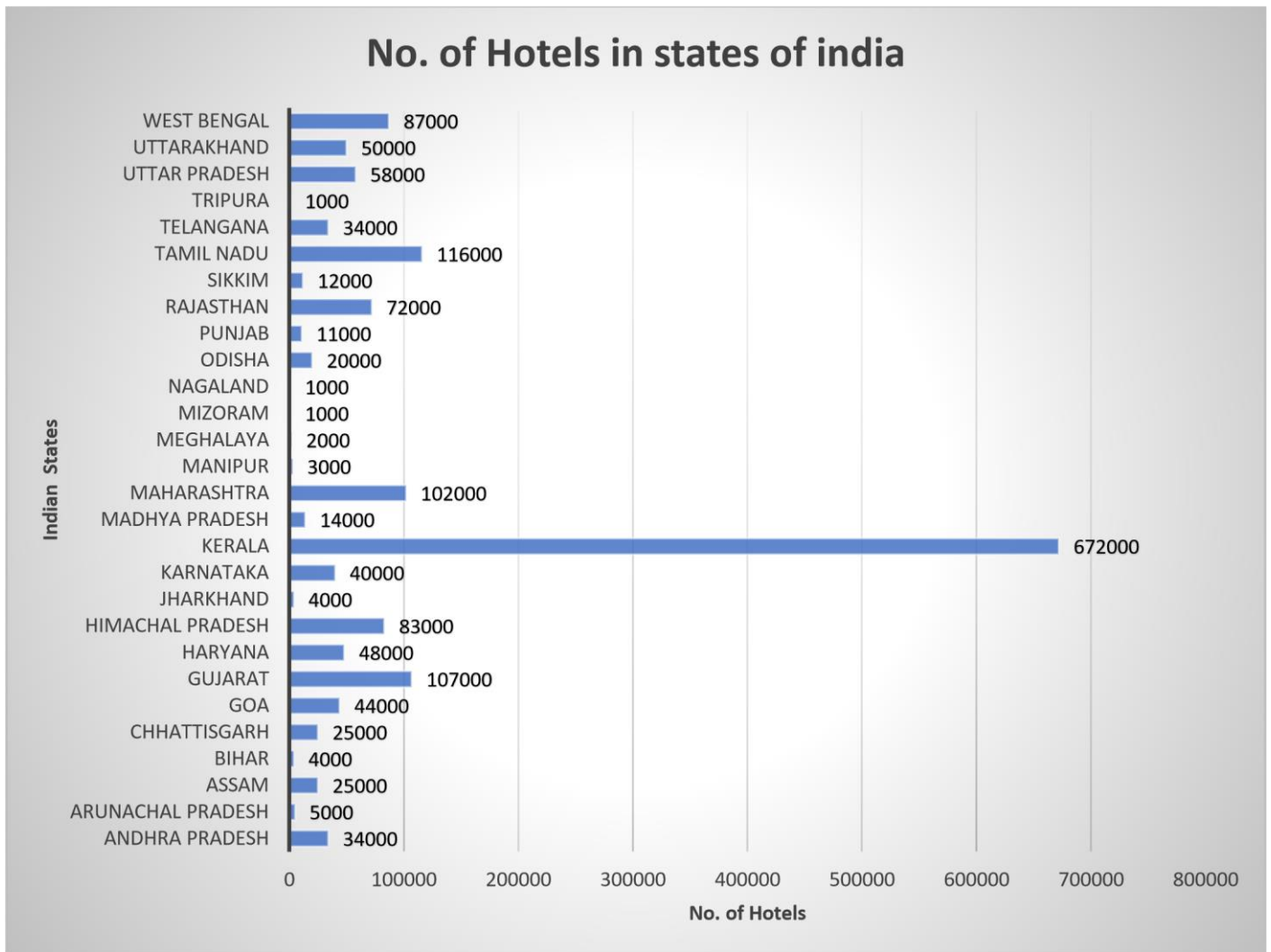
Figure 1. No. of Hotels in Indian States

By looking at the above bar graph, we can clearly state that the "Kerela" has the highest number of hotels i.e. 672000 in India followed by Tamil Nadu having 116000 at 2nd place and Gujarat having 107000 at 3rd place.
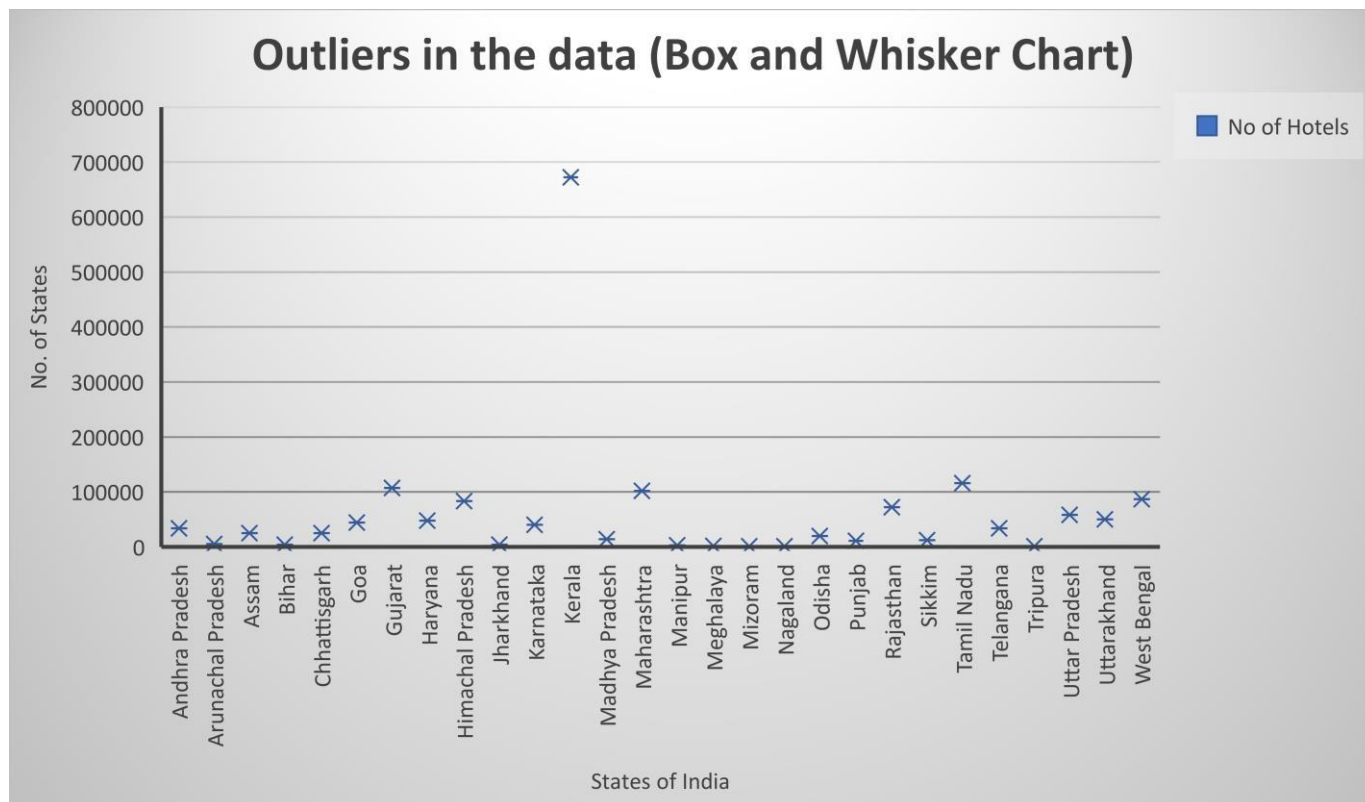
Figure 2. Outliers in the data of No. of Hotels in Indian States

By creating the box and whisker chart using the hotel dataset, we can clearly see that the state of Kerela with 672000 hotels is an outlier in the dataset.

Descriptive Statistics of No. of Hotels in Indian States

Table 2. Descriptive Statistics of No. of Hotels in Indian States

Descriptive Statistics	Value
Mean	59821.42857
Standard Error	23641.22563
Median	29500
Mode	1000
Standard Deviation	125097.6074
Sample Variance	15649411376
Kurtosis	23.19289424
Skewness	4.641070382
Range	671000
Minimum	1000

Maximum			672000
Sum			1675000
Count			28

Conversion of Map to Structured Data

Table 3. Indian States with the Type of Climatic Condition

Serial No.	States	Seasons						Total No. of Seasons
		Tropical Monsoon	**Tropical Savannah, Wet & Dry**	**Arid, Steppe, Hot**	**Humid Subtropical**	**Mountain Climate**	**Hot Deserts, Arid**	
1	Andhra Pradesh							1
2	Arunachal Pradesh							2
3	Assam							1
4	Bihar							1
5	Chhattisgarh							2
6	Goa							1
7	Gujarat							**3**
8	Haryana							**3**
9	Himachal Pradesh							**3**
10	Jharkhand							2
11	Karnataka							**3**
12	Kerala							2
13	Madhya Pradesh							**3**
14	Maharashtra							**3**
15	Manipur							1
16	Meghalaya							1
17	Mizoram							1
18	Nagaland							1
19	Odisha							2
20	Punjab							2
21	Rajasthan							2
22	Sikkim							1
23	Tamil Nadu							**3**
24	Telangana							2
25	Tripura							1

26	Uttar Pradesh								2
27	Uttarakhand								2
28	West Bengal								**3**

In the above table, we can see the type of climatic condition of different Indian states and the states having three types of climatic condition have been highlighted using conditional formatting from Excel.

The states having three types of Climatic Conditions are as follows:

1. Gujarat
2. Haryana
3. Himachal Pradesh
4. Karnataka
5. Madhya Pradesh
6. Maharashtra
7. Tamil Nadu
8. West Bengal

Table 4. Indian States with No. of Hotels and Climatic Conditions along with Slicers

Row Labels	Sum of No of Hotels	Sum of Total No. Climatic Conditions
Andhra Pradesh	34000	1
Arunachal Pradesh	5000	2
Assam	25000	1
Bihar	4000	1
Chhattisgarh	25000	2
Goa	44000	1
Gujarat	107000	3
Haryana	48000	3
Himachal Pradesh	83000	3
Jharkhand	4000	2
Karnataka	40000	3
Kerala	672000	2
Madhya Pradesh	14000	3
Maharashtra	102000	3
Manipur	3000	1
Meghalaya	2000	1
Mizoram	1000	1
Nagaland	1000	1
Odisha	20000	2
Punjab	11000	2
Rajasthan	72000	2
Sikkim	12000	1
Tamil Nadu	116000	3
Telangana	34000	2
Tripura	1000	1
Uttar Pradesh	58000	2
Uttarakhand	50000	2
West Bengal	87000	3
(blank)		
Grand Total	**1675000**	**54**

Total No. of Seasons

- 1
- 2
- 3
- (blank)

States

- Andhra Pradesh
- Arunachal Pradesh
- Assam
- Bihar
- Chhattisgarh
- Goa
- Gujarat
- Haryana

The table given above is a Pivot Table created in Excel using the structured data of No. of Hotels and Total No. of Climatic Conditions in different states in India by making use of Pivot fields. I have put the States in Row Field and the No. of Hotels and Climatic Conditions in Value Field.

Along with the Pivot Table, I have made the use of Slicers to filter the data related to the states and no. of climatic conditions.

Table 5. Northeast Indian States with No. of Hotels and Climatic Conditions

Row Labels	Sum of No of Hotels	Sum of Total No. Climatic Conditions
Arunachal Pradesh	5000	2
Assam	25000	1
Manipur	3000	1
Meghalaya	2000	1
Mizoram	1000	1
Nagaland	1000	1
Tripura	1000	1
Grand Total	38000	8

The table given above has been created using slicers from Pivot Table Analyse Tab in Excel. It includes all the Northeastern States in India along with their no. of hotels and no. of climatic conditions.

Northeastern States having the Potential for Setting up a Hotel
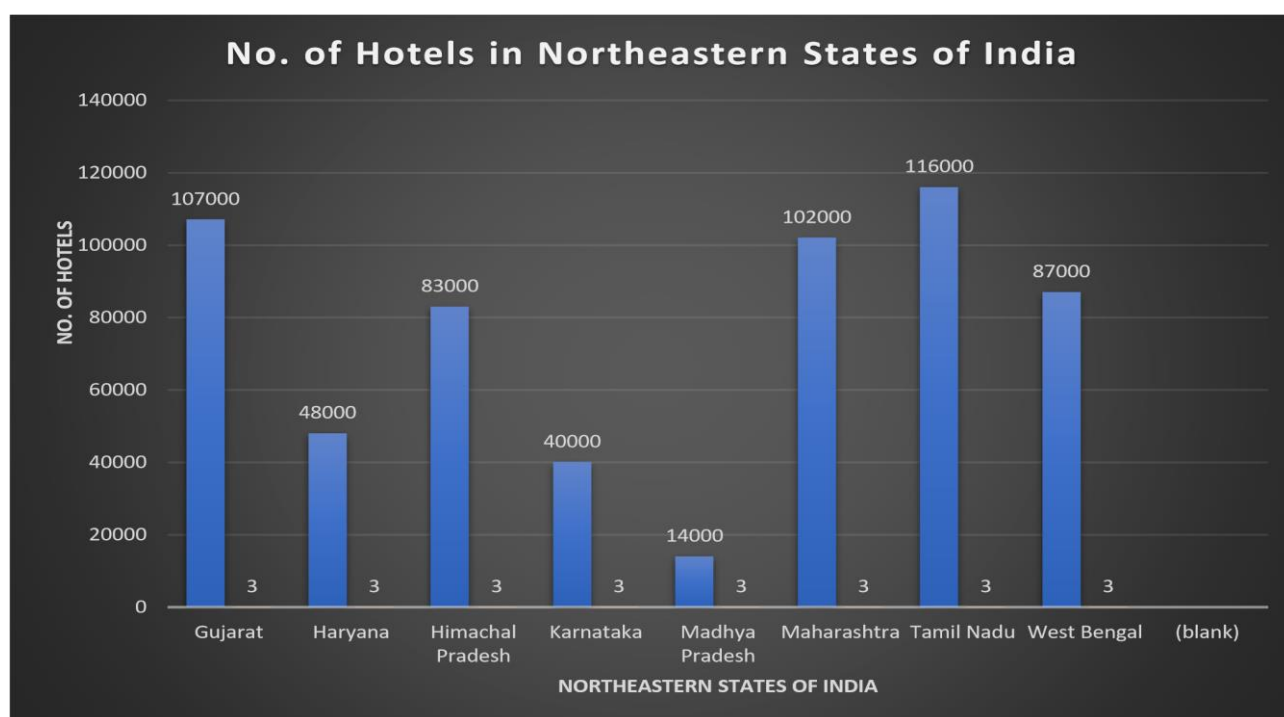
Figure 3. No. of Hotels in Northeast States of India (Clustered Column Chart)

From the above figure, Sikkim appears to be a good northeastern state to set up a hotel. It has a relatively higher number of hotels (12,000) compared to the other northeastern states, and it also experiences multiple seasons (2 seasons). The combination of a decent number of hotels and multiple seasons suggests a potential market for hospitality and tourism-related businesses in Sikkim.

But on the other hand, States with fewer hotels may indeed present opportunities due to less competition and potentially untapped markets. When considering where to set up a hotel, the number of hotels is just one of several factors to consider, and each state's unique characteristics should be evaluated.

<u>States with fewer hotels may offer advantages such as</u>:

- **Less Competition:** With fewer hotels, you may face less direct competition, making it easier to establish a unique selling proposition and stand out in the market.

- **Potential Demand:** States with fewer hotels may still have a significant potential demand for accommodations, especially if they have attractive tourist destinations or thriving business activities.

- **Market Gap:** A lack of hotels in a region could indicate an unmet need for accommodation, creating a market gap that your hotel could fill.

- **Supportive Environment:** In some states with fewer hotels, local authorities and communities might be more receptive to new hospitality ventures, offering support and incentives.

- **Lower Costs:** Real estate and operational costs might be more affordable in states with lower hotel densities, potentially leading to better profit margins.

However, it's essential to balance these potential advantages with other factors, such as:

- **Tourism Potential:** Assess the state's tourism potential and attractiveness to tourists. A state with a strong tourism industry may offer more consistent demand for hotels.

- **Infrastructure:** Consider the state's infrastructure, accessibility, and transportation options. Good connectivity can influence the ease of travel and, consequently, the demand for accommodations.

- **Market Research:** Conduct thorough market research to understand the preferences and needs of potential guests in the specific state. Different regions may have different target audiences and demands.

- **Local Regulations**: Examine local regulations, permitting processes, and business-friendly policies to
  ensure ease of establishment and compliance.

- **Economic Outlook**: Consider the economic growth and stability of the state, as this can impact the overall hospitality market.

According to me, I would say Meghalaya, as it is known as the "Abode of Clouds," a beautiful northeastern state in India with great potential for various industries, including tourism and hospitality. Setting up a hotel in Meghalaya can be a promising venture due to its unique attractions and natural beauty. Here are some possibilities and considerations for setting up a hotel in Meghalaya:

1. **Tourism Potential:** Meghalaya is known for its lush green landscapes, beautiful waterfalls, serene lakes, and unique living root bridges. It attracts tourists seeking nature, adventure, and cultural experiences. This tourism potential provides an opportunity for various types of hotels catering to different traveler preferences.
2. **Ecotourism and Adventure Tourism:** The state's focus on ecotourism and adventure tourism creates possibilities for hotels that align with these themes. Eco-resorts, adventure lodges, and sustainable accommodations can be appealing to environmentally conscious travelers.
3. **Heritage and Culture:** Meghalaya's indigenous tribes and vibrant culture offer opportunities for experiential stays and themed hotels that celebrate the local heritage.
4. **Less Competition:** Compared to more mainstream tourist destinations, Meghalaya might have less hotel competition, especially in certain regions. This can be advantageous for those looking to enter a relatively untapped market.
5. **Cherrapunji and Mawlynnong:** Cherrapunji, known for its abundant rainfall, and Mawlynnong, declared as the cleanest village in Asia, are popular destinations within Meghalaya. Hotels in these regions can cater to the influx of tourists visiting these unique places.
6. **Sustainable Practices:** Emphasizing sustainable practices and eco-friendly initiatives can be a selling point for hotels in Meghalaya, aligning with the state's focus on environmental conservation.
7. **Hospitality Training and Development:** For those planning to set up hotels, investing in hospitality training and development for local communities can contribute to the state's overall growth and create a skilled workforce.
8. **Market Research:** Conduct thorough market research to understand the demand, target audience, and seasonality of tourist influx in different regions of Meghalaya. This will help tailor your hotel's offerings accordingly.
9. **Infrastructure:** Consider the state's infrastructure, connectivity, and accessibility to major tourist attractions. Easy access to key points of interest can enhance the appeal of your hotel.
10. **Local Regulations:** Familiarize yourself with local regulations and business requirements for setting up and operating a hotel in Meghalaya.

Best State in India having the Potential for Setting up a Hotel

Table 6. Indian States with No. of Hotels and Three Types of Climatic Conditions

Row Labels	Sum of No of Hotels	Sum of Total No. of Seasons
Gujarat	107000	3
Haryana	48000	3
Himachal Pradesh	83000	3
Karnataka	40000	3
Madhya Pradesh	14000	3

Maharashtra	102000	3
Tamil Nadu	116000	3
West Bengal	87000	3
(blank)		
Grand Total	597000	24
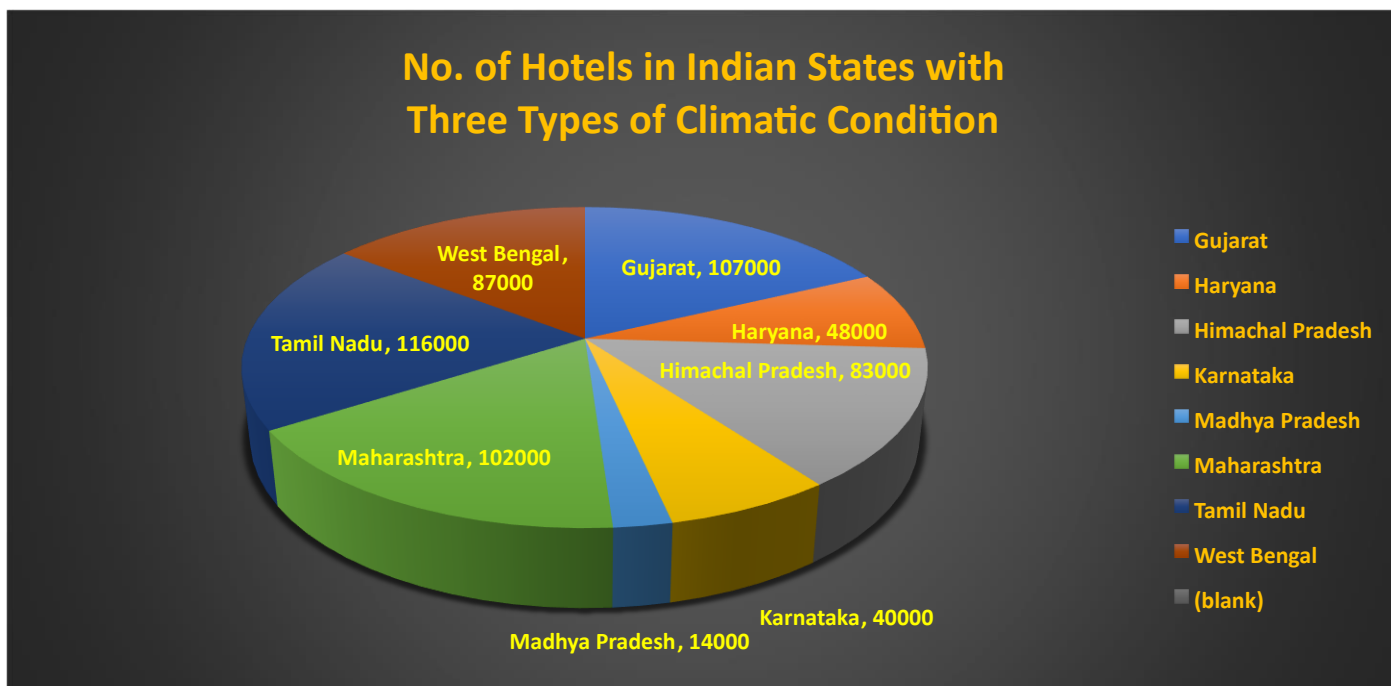
__Figure 4. No. of Hotels in Indian States with Three Types of Climatic Conditions (Pie Chart)__

From the above pie chart, I can say that Madhya Pradesh is a state in central India with significant potential for the hospitality industry, including hotels. It offers a diverse range of attractions, including historical sites, wildlife sanctuaries, national parks, and cultural heritage, making it an attractive destination for tourists. Here are some factors to consider for setting up a hotel in Madhya Pradesh:

1. **Tourism Potential:** Madhya Pradesh is known for its rich cultural and historical heritage. It is home to several UNESCO World Heritage sites, including the Khajuraho Group of Monuments, Sanchi Stupa, and the Rock Shelters of Bhimbetka. The state also boasts wildlife sanctuaries and national parks like Kanha, Bandhavgarh, and Pench, which attract nature and wildlife enthusiasts.
2. **Central Location:** Madhya Pradesh's central location in India makes it accessible from various parts of the country, potentially attracting tourists from different regions.
3. **Religious Tourism:** The state is renowned for its religious sites, such as Ujjain, Omkareshwar, Maheshwar, and Chitrakoot, which draw pilgrims and tourists seeking spiritual experiences.
4. **Less Competition in Some Areas:** While Madhya Pradesh has popular tourist destinations, some regions may have relatively fewer hotels, creating opportunities for establishing accommodations that cater to specific niches or provide unique experiences.

5. **Local Culture and Traditions:** Emphasizing the local culture, traditions, and cuisines in your hotel's offerings can enhance the guest experience and attract visitors seeking authentic experiences.
6. **Government Initiatives:** Madhya Pradesh's government has been promoting tourism and hospitality development through various initiatives, which could provide support and incentives for hotel establishments.
7. **Infrastructure Development:** The state has been investing in infrastructure development, including road networks and connectivity, which can positively impact the overall tourism industry.
8. **Market Research:** Conduct a thorough market analysis to understand the demand for accommodations, pricing trends, and preferences of travelers in different regions of Madhya Pradesh.
9. **Business-Friendly Environment:** Evaluate the state's business climate, ease of doing business, and regulatory environment for setting up and operating a hotel.
10. **Sustainable Tourism:** Emphasize sustainable and eco-friendly practices to align with the state's efforts towards promoting responsible tourism.

While Madhya Pradesh offers promising opportunities for setting up a hotel, it's essential to conduct indepth research and feasibility studies specific to the location you are considering. Each region within Madhya Pradesh may have unique tourism potentials, target markets, and challenges that should be carefully evaluated before making a decision. A well-informed approach, combined with a clear understanding of the target audience and market dynamics, will increase the chances of success for your hotel venture in Madhya Pradesh.

Average No. of Days Rainy Season lasts in India

Table 7. No. of Days Rainy Season lasts in Indian States

	A	B	C
	Climate	Date	No. of Rainy Days
1			
2	Tropical Monsoon	June 1- October 15	136
3	Tropical Savannah, Wet & Dry	June 1- October 15	136
4	Arid, Steppe, Hot	June 1- October 15	136
5	Humid Subtropical	June 5- October 1	122
6	Montane Climate	June 1- September 15	102
7	Hot Deserts, Arid	June 15- September 1	92
8	Average No. of Days		120.6667

The above figure is a table created in Excel and I calculated the average no. of rainy days using the AVERAGE Formula.

• The average no. of days the rainy season lasts in Indian States is 120 days.