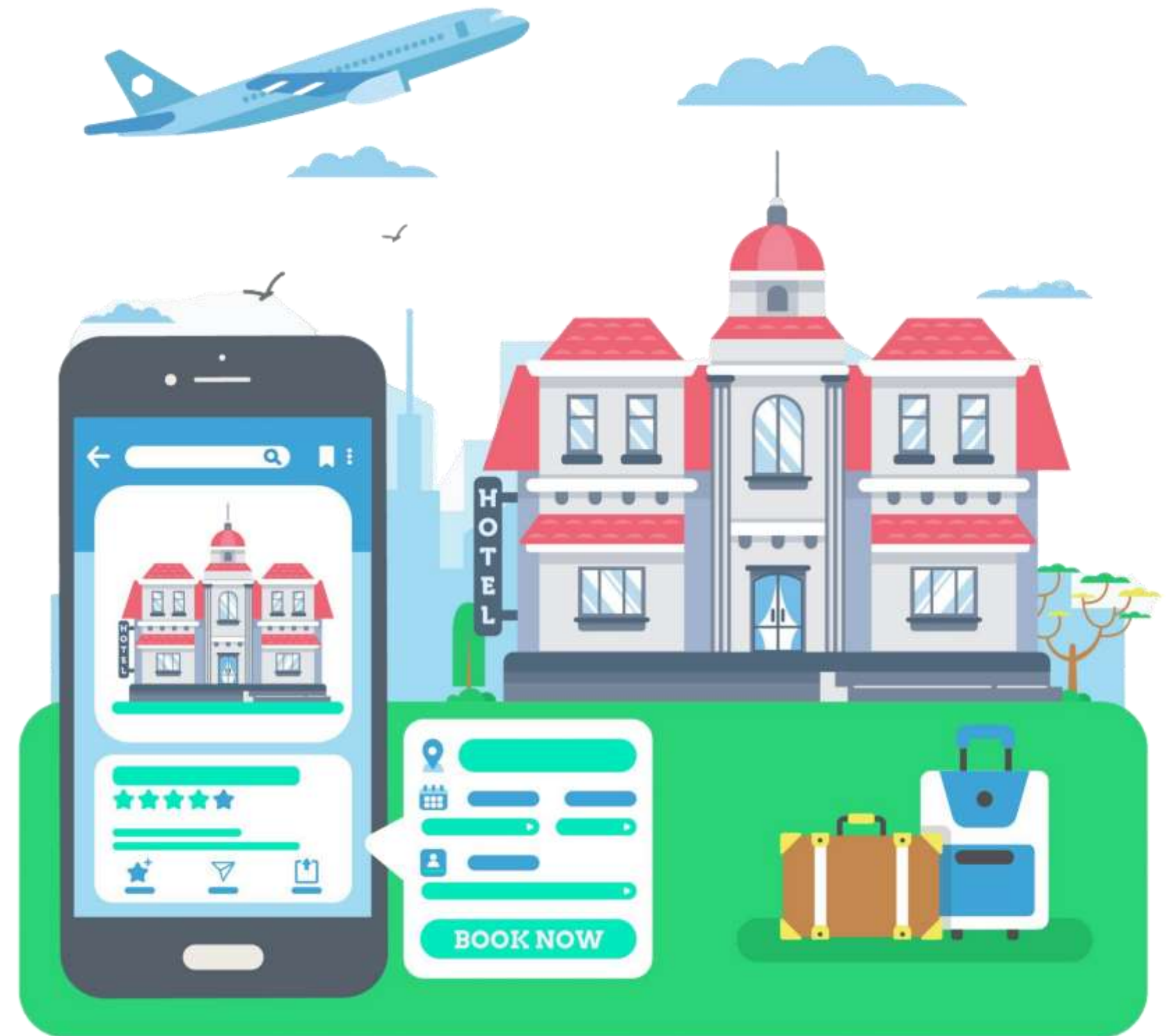


# Sales Performance Analysis

Python Project

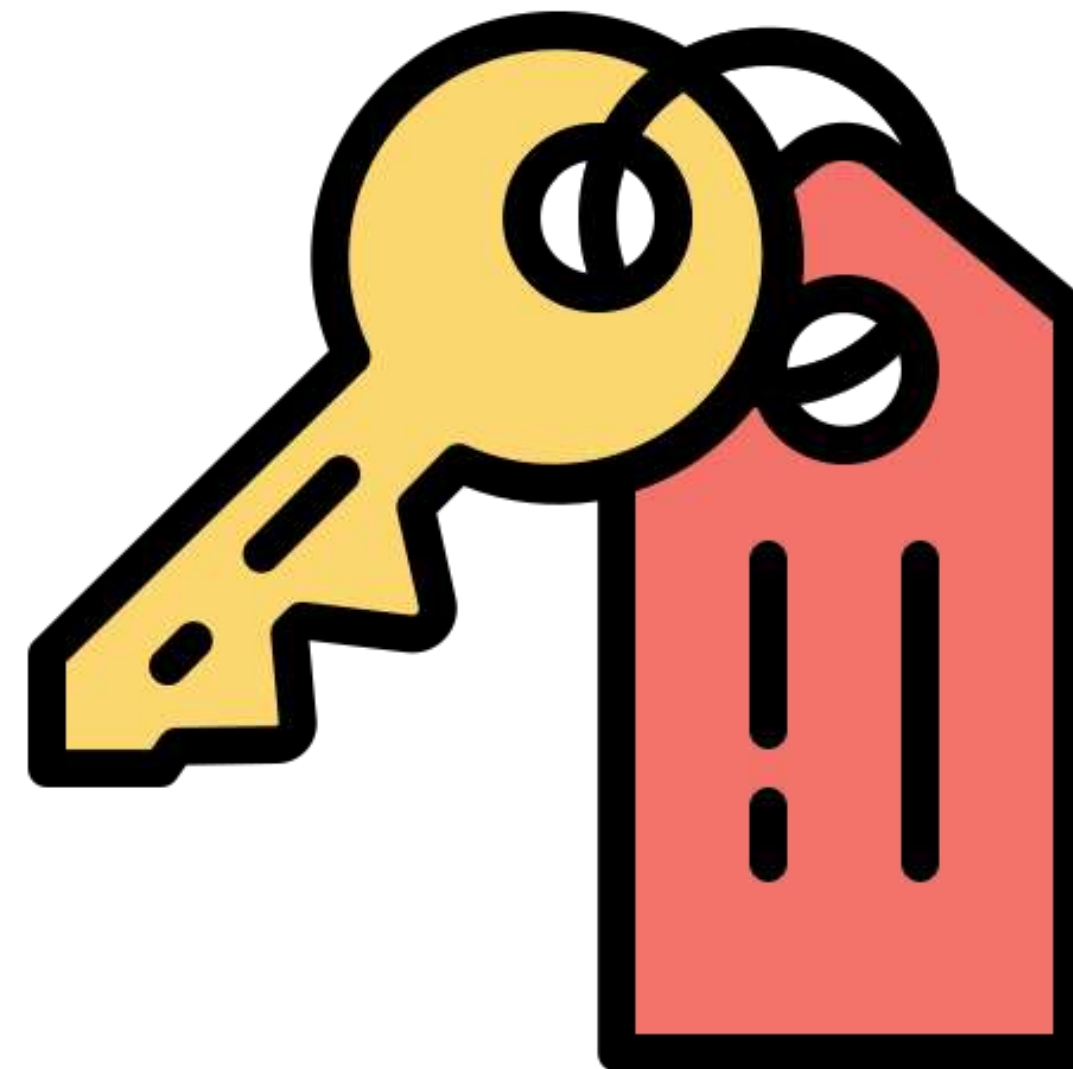
Shivanshu  
Tiwari





# Contents

- Introduction
- Problem Statement Dataset
- Data Cleaning & Transformation
- Insights Generation
- Conclusion
- 



# Introduction



AtliQ Grands is a prominent Indian hotel chain with a diverse portfolio of hotels operating in cities such as Delhi, Mumbai, Bangalore, and Hyderabad. With 20 years of industry experience, they offer various hotel types, including luxurious ones like AtliQ Palace and business-focused options like AtliQ Seasons. To address declining revenue and market share, AtliQ Grands is embracing data analytics to inform its decision-making process. This project focuses on analyzing booking data from multiple sources to identify opportunities for revenue growth and improved competitiveness.



# Problem Statement

- AtliQ Grands, a reputable Indian hotel chain, faces declining revenue and market share. To reverse this trend, they have embarked on a data-driven approach by leveraging data analytics.
- The project's objective is to analyze booking data from diverse sources, including their website and third-party platforms, to discover strategies for increasing revenue and enhancing competitiveness.



# Dataset

## We have 5 csv files

- **dim\_date.csv**
  - date, mmm yy, week no, day\_type
- **dim\_hotels.csv**
  - property\_id, property\_name, category, city
- **dim\_rooms.csv**
  - room\_id, room\_class
- **fact\_aggregated\_bookings.csv**
  - property\_id, check\_in\_date, room\_category, successful\_bookings, capacity
- **fact\_bookings.csv**
  - booking\_id, property\_id, booking\_date, check\_in\_date, checkout\_date, no\_guests, room\_category, booking\_platform, ratings\_given, booking\_status, revenue\_generated, revenue\_realized







# Data Cleaning & Transformation

1. Clean Invalid Data
2. Outlier Removal
3. Creating New Columns




# Insights Generation



## 1. WHAT IS THE AVERAGE OCCUPANCY RATE IN EACH OF THE ROOM CATEGORIES?

- Among the room categories, the "Presidential" rooms have the highest average occupancy rate (59.30%), indicating their popularity among guests.

```
df.groupby('room_class')['occ_pct'].mean().round(2)
```



room_class	occupancy %
Elite	58.01
Premium	58.03
Presidential	59.28
Standard	57.89



## 2. WHAT IS THE AVERAGE OCCUPANCY RATE PER CITY

- Delhi has the highest average occupancy rate among cities (60.40%), while Bangalore has the lowest (55.29%).

```
graph = df.groupby('city')['occ_pct'].mean().sort_values()

num_bars = len(graph)

fig_width = max(8, num_bars * 0.5)
fig_height = 8

plt.figure(figsize=(fig_width, fig_height))

graph.plot(kind = 'bar', facecolor = '#ff1f2b')

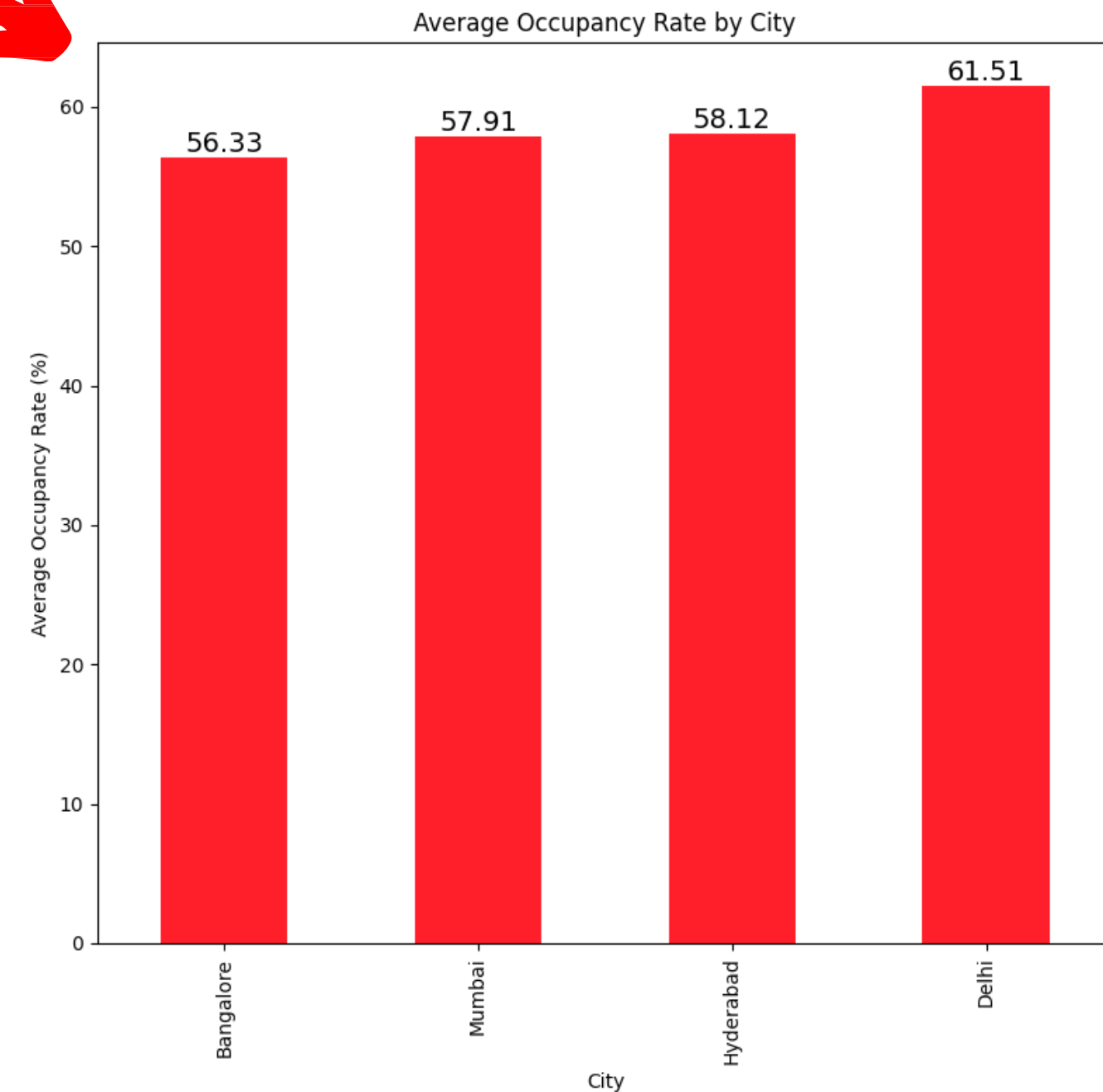
plt.xlabel('City')
plt.ylabel('Average Occupancy Rate (%)')
plt.title('Average Occupancy Rate by City')

for index, value in enumerate(graph):
    plt.text(index, value, str(round(value, 2)), ha = 'center', va = 'bottom', fontsize = 14)

plt.tight_layout()

plt.savefig('average occupancy rate per city.png', transparent = True, bbox_inches = 'tight')

plt.show()
```



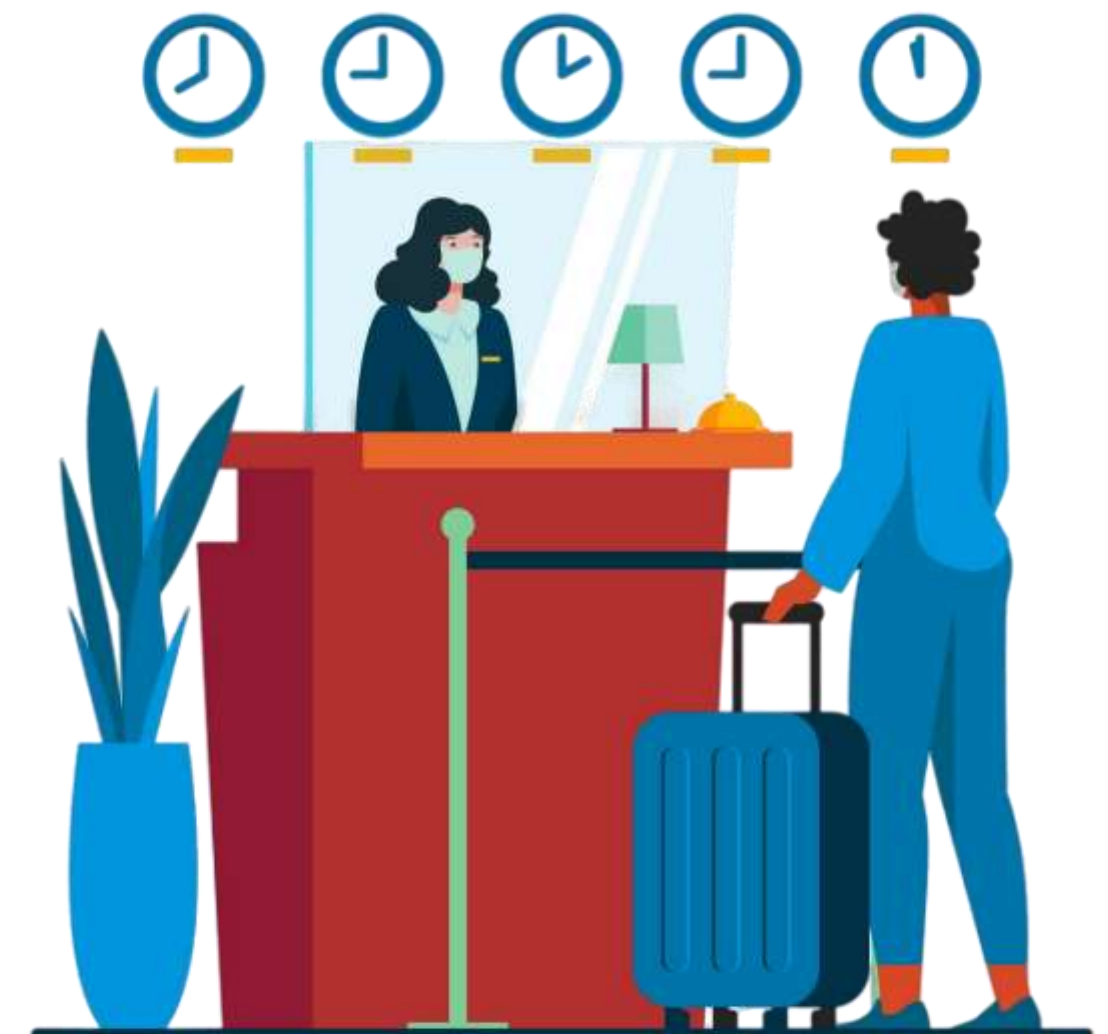


### 3. WHEN WAS THE OCCUPANCY BETTER? WEEKDAY OR WEEKEND?

- Weekends show significantly higher occupancy rates compared to weekdays, indicating a potential opportunity for targeted marketing or pricing adjustments.

```
df.groupby('day_type')['occ_pct'].mean().round(2)
```

day_type	occupancy %
weekday	50.88
weekend	72.34





## 4. IN THE MONTH OF JUNE, WHAT IS THE OCCUPANCY FOR DIFFERENT CITIES

- In the month of June, Delhi had the highest occupancy rate (62.47%), followed closely by Hyderabad (58.46%).



```
graph = df_june.groupby('city')['occ_pct'].mean().round(2).sort_values(ascending = False)

num_bars = len(graph)

fig_width = max(8, num_bars * 0.5)
fig_height = 8

plt.figure(figsize=(fig_width, fig_height))

graph.plot(kind = 'bar', facecolor = '#ff1f2b')

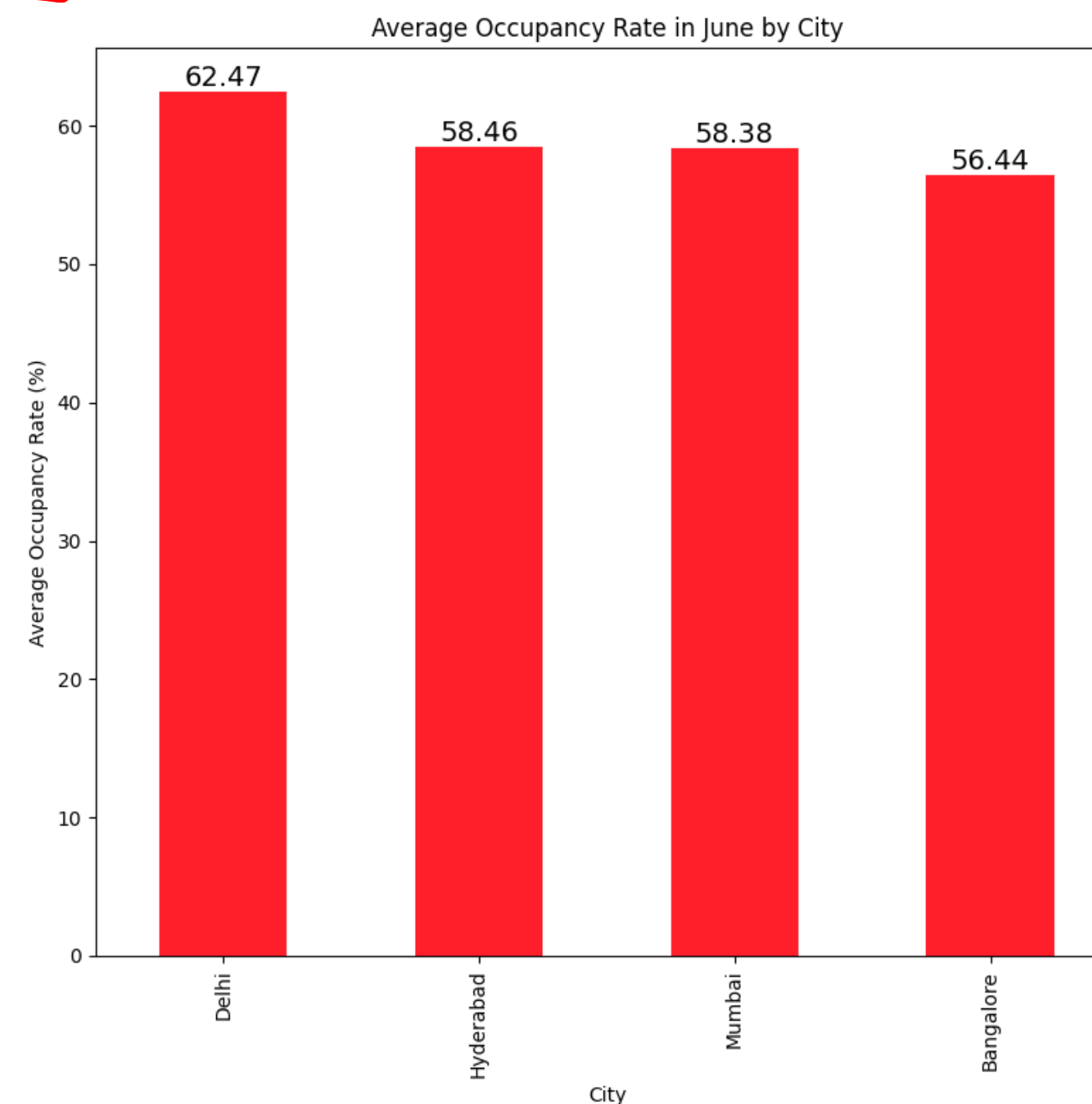
plt.xlabel('City')
plt.ylabel('Average Occupancy Rate (%)')
plt.title('Average Occupancy Rate in June by City')

for index, value in enumerate(graph):
    plt.text(index, value, str(value), ha = 'center', va = 'bottom', fontsize=14)

plt.tight_layout()

plt.savefig('average occupancy rate in june by city.png', transparent = True, bbox_inches = 'tight')

plt.show()
```



## 5. WHAT IS THE REVENUE REALIZED PER CITY

- Mumbai generates the highest revenue among the cities.



```
df_bookings_all.groupby('city')['revenue_realized'].sum()
```

city	revenue_realized
Bangalore	420383550
Delhi	294404488
Hyderabad	325179310
Mumbai	668569251

## 6. WHAT IS THE MONTH BY MONTH REVENUE

- The hotel's revenue fluctuates month by month, with July 2022 generating 38,99,40,912 INR and May 2022 generating 40,83,75,641 INR.



mmm yy	revenue_realized
Jul-22	389940912
Jun-22	377191229
May-22	408375641

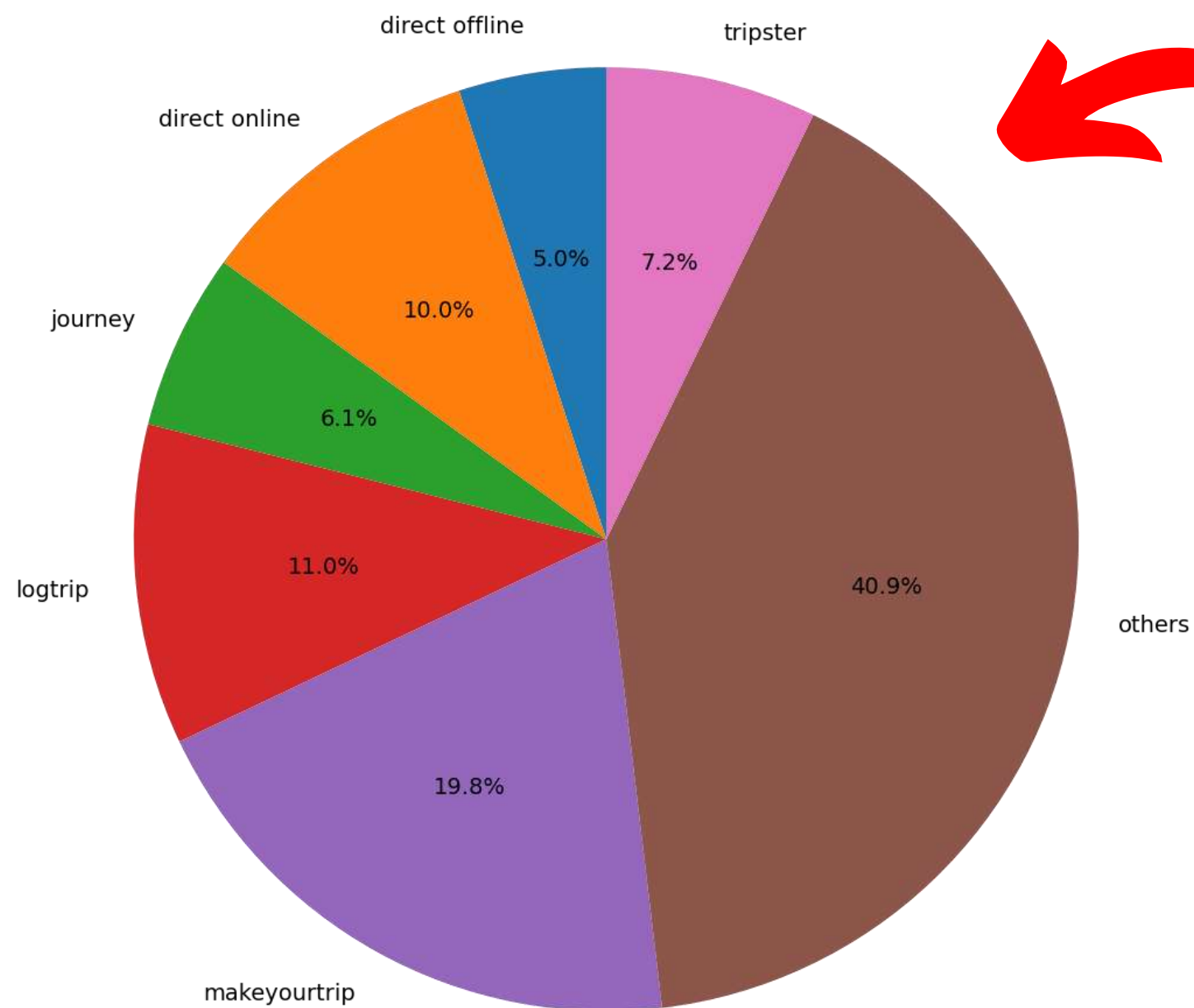
```
df_bookings_all.groupby('mmm yy')['revenue_realized'].sum()
```





## 7.PRINT A PIE CHART OF REVENUE REALIZED PER BOOKING PLATFORM

- The revenue realized per booking platform varies, with "others" being the highest contributor , followed by "makeyourtrip" .



Revenue Realized per Booking Platform

```
graph = df_bookings_all.groupby('booking_platform')['revenue_realized'].sum()

num_categories = len(graph)
fig_width = 8 + (num_categories * 0.5)
fig_height = 8 + (num_categories * 0.5)

plt.figure(figsize=(fig_width, fig_height))

ax = graph.plot(kind = 'pie', autopct = '%1.1f%', startangle = 90, textprops = {'fontsize': 14})

ax.set_ylabel('')

plt.figtext(0.5, 0.05, 'Revenue Realized per Booking Platform', ha = 'center', va = 'center', fontsize = 16)

plt.axis('equal')

plt.savefig('revenue realized per booking platform.png', transparent = True, bbox_inches = 'tight')

plt.show()
```



# Conclusion

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- **Implement Weekend-Specific Promotions:** Develop and implement weekend specific promotions and packages to attract more guests during weekends. This could include special deals, events, or amenities tailored to weekend travelers.
- **Invest in Expanding in Delhi:** Given the higher occupancy rate in Delhi, consider expanding the hotel chain's presence in the city by opening more properties or enhancing existing ones. This strategic expansion can help further boost revenue and market share.

**THANK**  
 **YOU**

