



AtliQ Grands

AtliQ Grands

Python Project

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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	
Elite	58.01
Premium	58.03
Presidential	59.28
Standard	57.89
Name:	occ_pct, dtype: float64

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()

# Calculate the number of bars
num_bars = len(graph)

# Dynamic figure size
fig_width = max(8, num_bars * 0.5) # Ensures a minimum width of 8
fig_height = 8 # Fixed height or adjust based on preferences

# Set figure size
plt.figure(figsize=(fig_width, fig_height))

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

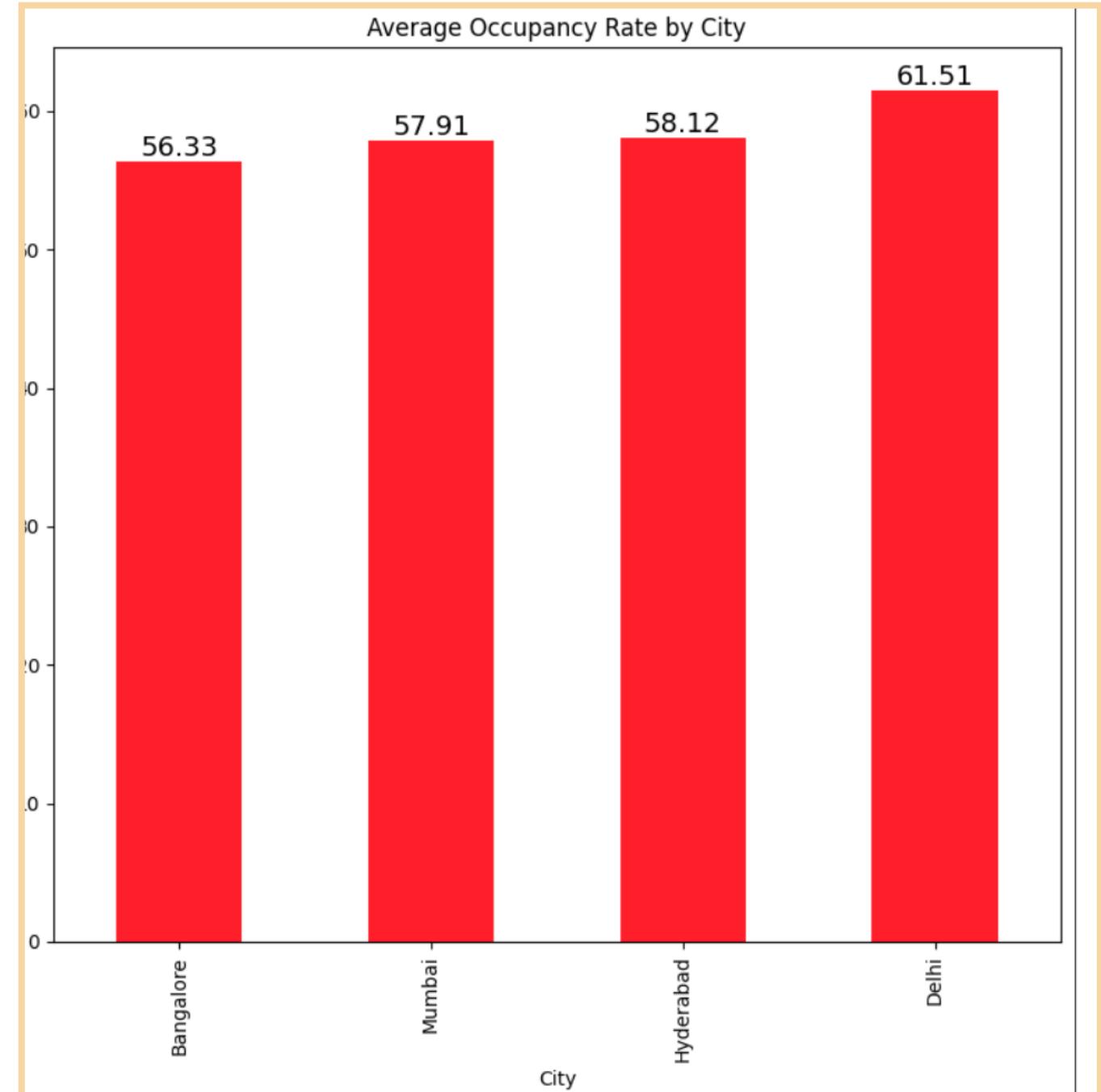
plt.xlabel('City')
plt.ylabel('Average Occupancy Rate (%)')
plt.title('Average Occupancy Rate by City')

# Adding labels on top of the bars
for index, value in enumerate(graph):
    plt.text(index, value, str(round(value, 2)), ha = 'center', va = 'bottom', fontsize = 14)

# Adjust layout to make sure everything fits
plt.tight_layout()

# Save the figure with a transparent background
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
weekday      50.88
weekend      72.34
Name: occ_pct, dtype: float64
```

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)

# Calculate the number of bars
num_bars = len(graph)

# Dynamic figure size
fig_width = max(8, num_bars * 0.5) # Ensures a minimum width of 8
fig_height = 8 # Fixed height or adjust based on preferences

# Set figure size
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')

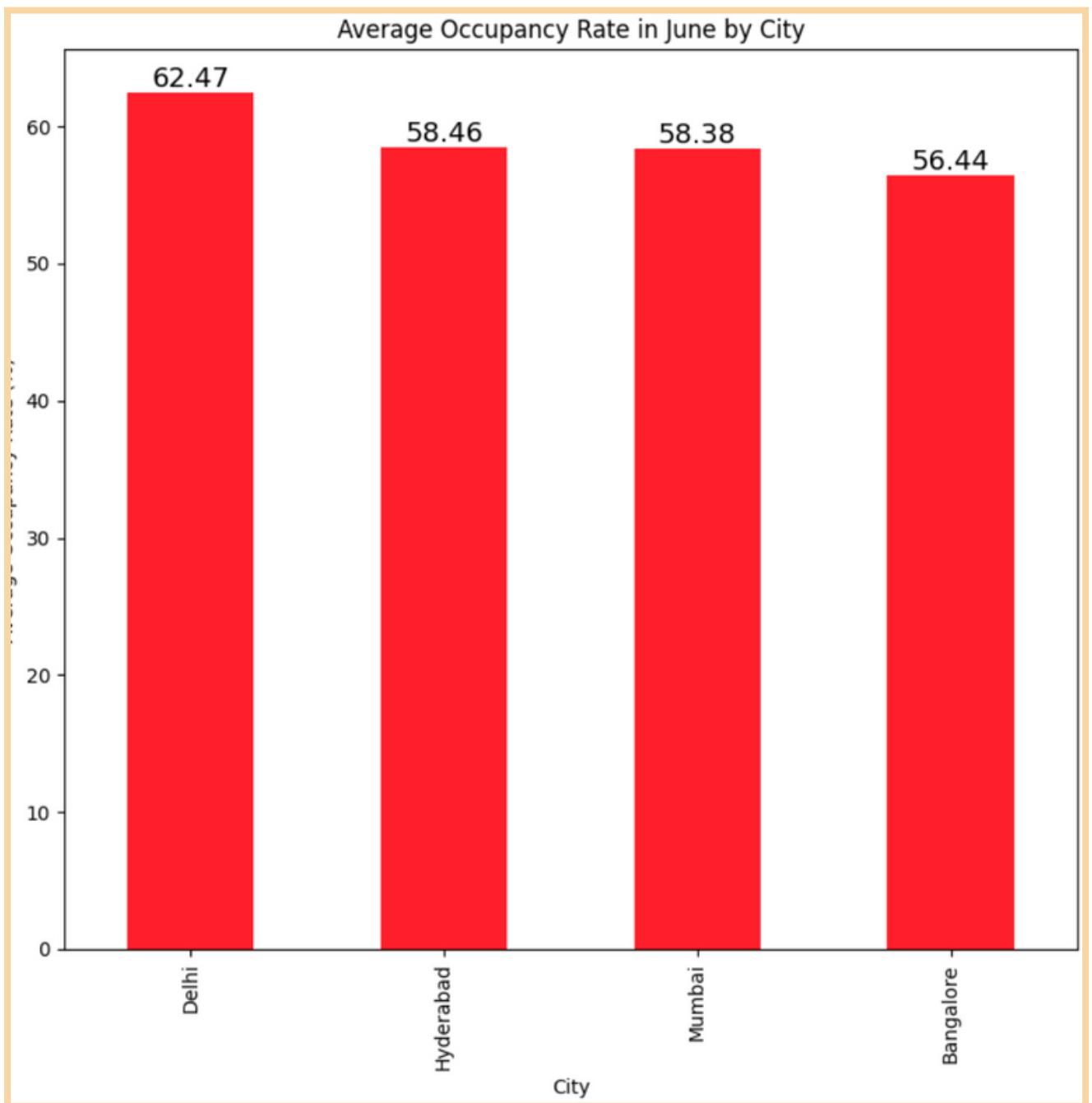
# Adding labels on top of the bars
for index, value in enumerate(graph):
    plt.text(index, value, str(value), ha = 'center', va = 'bottom', fontsize = 14)

# Adjust layout to make sure everything fits
plt.tight_layout()

# Save the figure with a transparent background
plt.savefig('average occupancy rate in june by city.png', transparent = True, bbox_inches = 'tight')

plt.show()

```

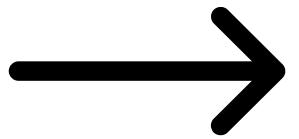




5. WHAT IS THE REVENUE REALIZED PER CITY

Mumbai generates the highest revenue among the cities.

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



```
city
Bangalore    420383550
Delhi         294404488
Hyderabad    325179310
Mumbai        668569251
Name: revenue_realized, dtype: int64
```

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

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



```
mmm yy
Jul 22    389940912
Jun 22    377191229
May 22    408375641
Name: revenue_realized, dtype: int64
```



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".

```
# Print a pie chart of revenue realized per booking platform

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

# Calculate dynamic figure size based on the number of categories
num_categories = len(graph)
fig_width = 8 + (num_categories * 0.5) # Increase width based on number of categories
fig_height = 8 + (num_categories * 0.5) # Increase height based on number of categories

# Set figure size
plt.figure(figsize=(fig_width, fig_height))

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

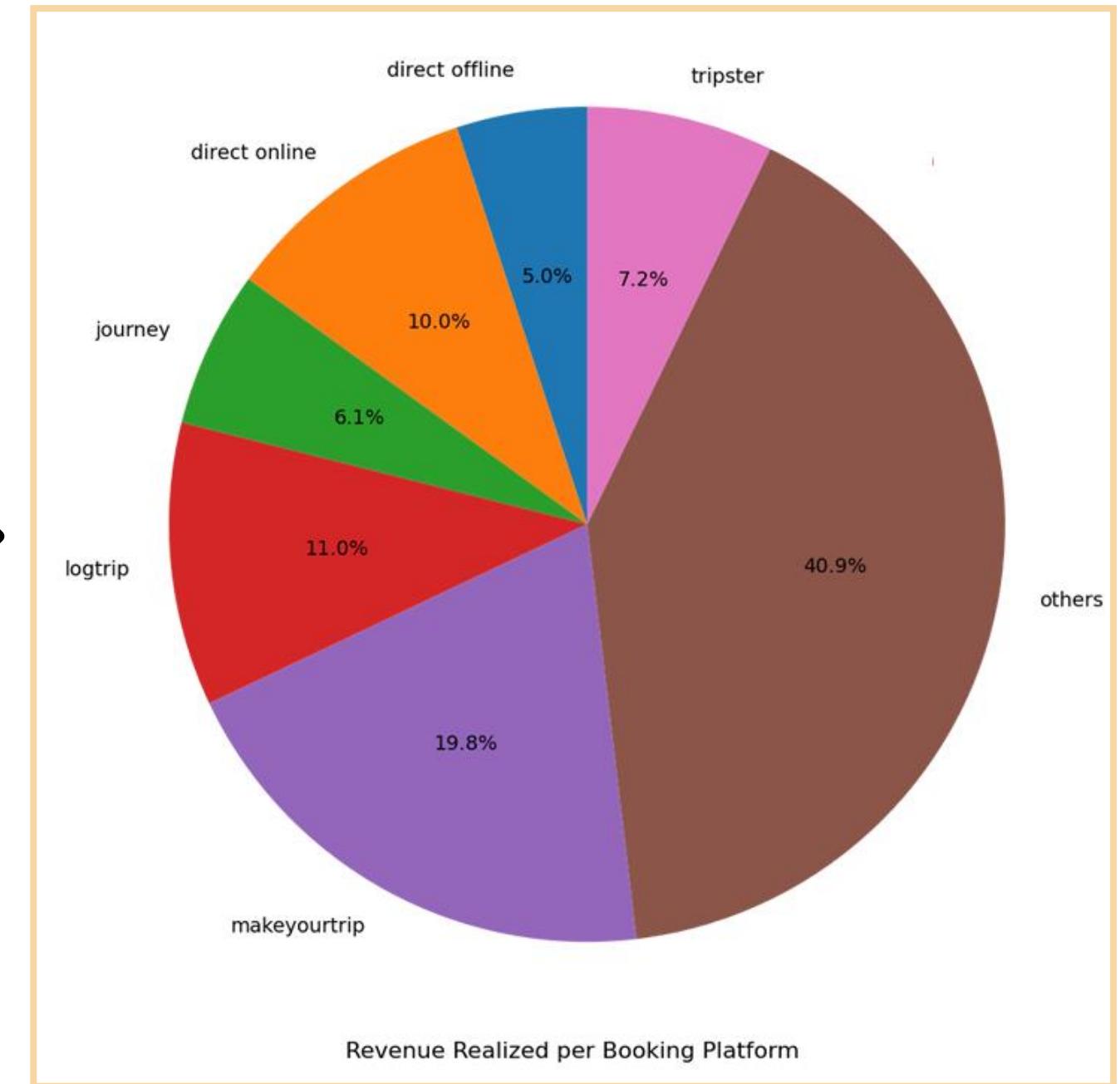
# Hide the y-axis label
ax.set_ylabel('')

# Move title to the bottom
plt.figtext(0.5, 0.05, 'Revenue Realized per Booking Platform', ha = 'center', va = 'center', fontsize = 16)

plt.axis('equal') # Equal aspect ratio ensures that pie is drawn as a circle.

# Save the figure with a transparent background
plt.savefig('revenue realized per booking platform.png', transparent = True, bbox_inches = 'tight')

plt.show()
```



Conclusion

1. Weekend-Specific Promotions

- Objective: Boost weekend occupancy rates.
- Strategy: Implement tailored weekend promotions, including special deals, events, or exclusive amenities.
- Outcome: Attract more weekend travelers, enhancing overall guest experience and increasing revenue.

2. Expansion in Delhi

- Objective: Capitalize on high occupancy rates in Delhi.
- Strategy: Expand the hotel chain's presence by opening new properties or enhancing existing ones.
- Outcome: Strengthen market share in Delhi, driving sustained revenue growth.

3. Focus on Increasing Mumbai Occupancy Rate

- Objective: Leverage Mumbai's revenue potential.
- Strategy: Implement targeted strategies to increase occupancy rates, directly impacting revenue.
- Outcome: Increased occupancy in Mumbai leads to significant revenue growth, benefiting the overall business.



Thank You



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