Hotel Data Analytics using Python

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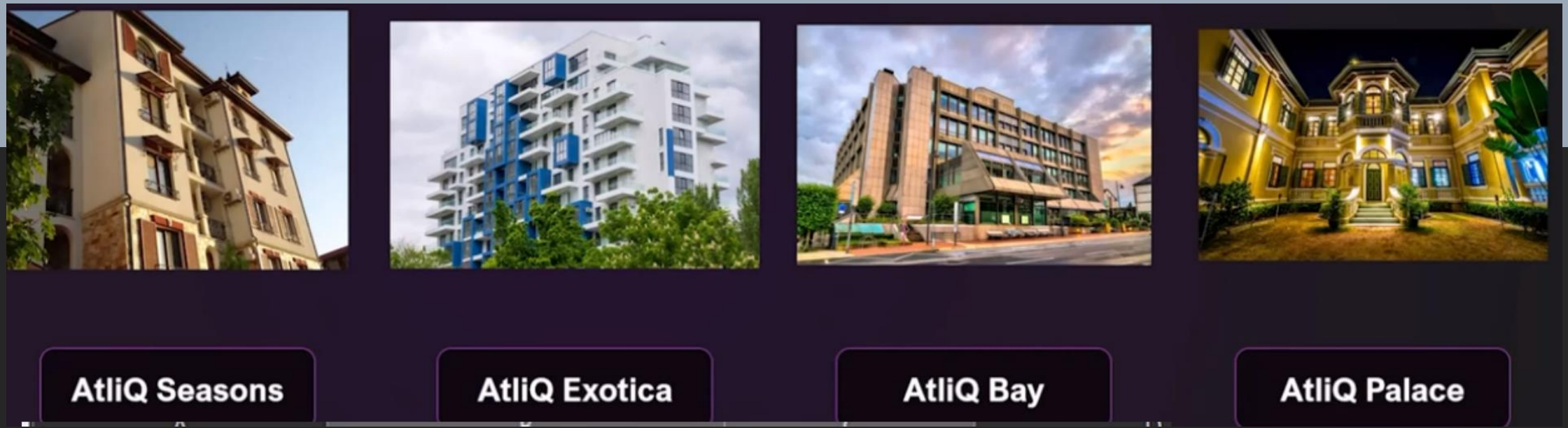
OVERVIEW

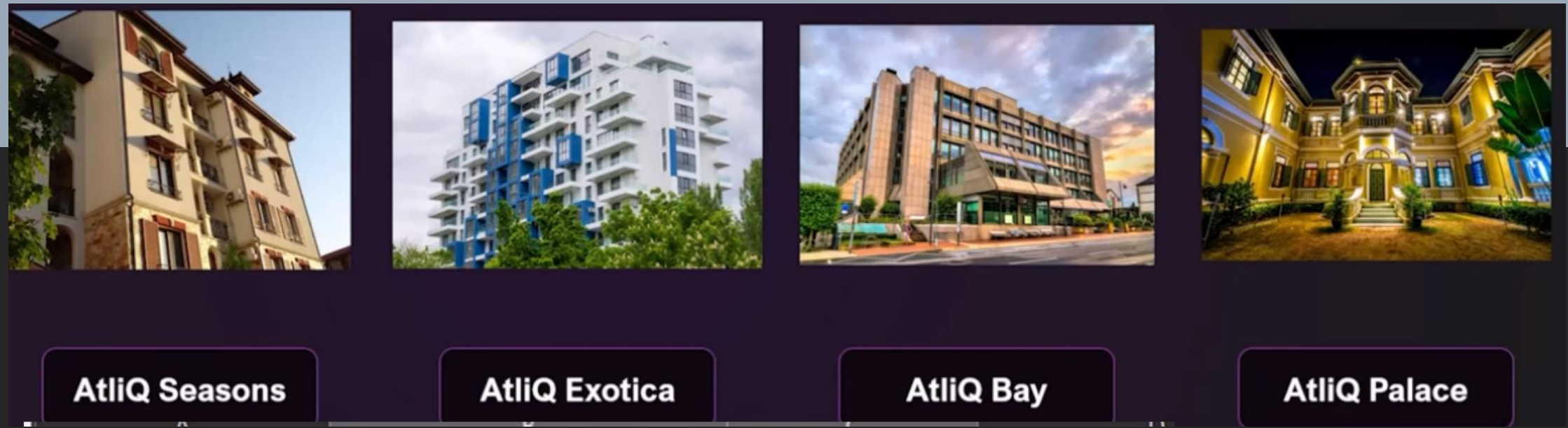
- AtliQ Grands , a well-established hotel chain operated across Bengaluru, Hyderabad, Delhi, Mumbai in India.

- They are Facing challenges in market share and revenue because of their Competitors making strategic moves and losing customers to other hotels.



TYPES OF ATLIQ HOTELS

- AtliQ Seasons
- AtliQ Exotica
- AtliQ Bay
- AtliQ Palace



TYPES OF ROOMS

- Standard
- Elite
- Premium
- Presidential

PROBLEM STATEMENT

- Challenge: Revenue and Market Share Drop
- Objective: Figure Out Why and Improve
- Challenge: Tough Competition in Hospitality

DATA ANALYTICS PROJECT STEPS

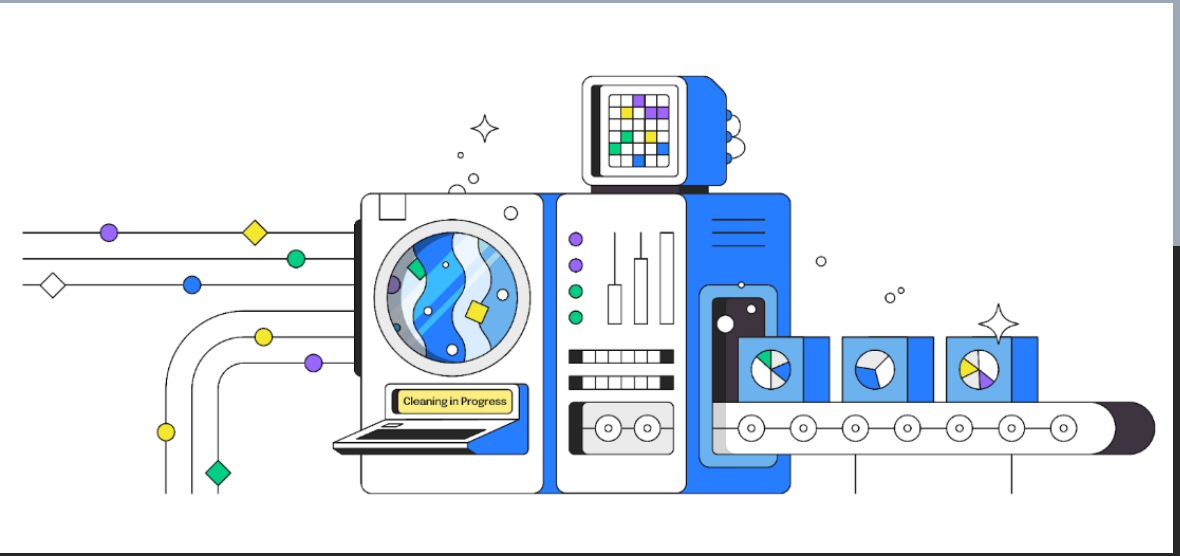
DATA SOURCES

- dim_date.csv
- dim_hotels_csv
- dim_rooms.csv
- fact_aggregated_bookings
- fact_bookings.csv

DATA CLEANING

- Invalid guest records with negative values were removed, ensuring data accuracy and eliminating potential errors.

- Removed outliers in revenue generated for accurate and reliable analysis using statistical functions like mean and standard deviation in Python proceeding with cleaned data.



DATA TRANSFORMATION

- Invalid guest records with negative values were removed, ensuring data
- Created New Column: Occupancy Percentage

Why: A new column has been introduced to calculate occupancy percentage, a key performance indicator (KPI) in the hospitality domain.

Importance: Occupancy percentage reflects the utilization of available rooms, aiding in strategic decision-making, pricing, and resource optimization.

- Importance of Occupancy Percentage:

Strategic Pricing: Helps in setting optimal room prices based on demand.
Resource Optimization: Guides staffing levels and resource allocation.

Revenue Management: Influences revenue strategies and forecasting.

DATA TRANSFORMATION

● Data merging : Relevant data from different datasets was merged to create a comprehensive view of hotel performance.

● Types of Data Transformations:
Creating New Columns: Adding new variables for deeper analysis, like occupancy percentage.

Normalization: Scaling data to a standard range for fair comparison.
Merging Data: Combining datasets for a comprehensive view.
Aggregation: Summarizing data, e.g., calculating average room occupancy.

INSIGHTS GENERATION

- **Overall average rating**: 3.6

- **Average Rating per City**
Bangalore: 3.40 Delhi: 3.7 Hyderabad: 3.66 Mumbai: 3.64

- **Average Occupancy Rate by Room Class**
Standard: 57.89% Elite: 58.01% Premium: 58.03% Presidential: 59.28%

- **Average Occupancy Rate by City**
Bangalore: 56.33% Mumbai: 57.91% Hyderabad: 58.12 Delhi: 61.51%

- **Weekday vs. Weekend Occupancy**
Weekday: 50.88% Weekend: 72.34%

RECOMMENDATIONS

• **Strategic marketing: -** Target promotions for high-demand room categories.
- Leverage customer feedback to enhance room features.

• **Competitive Pricing:** - Regularly analyze competitor rates and adjust pricing.
- Introduce special offers during periods of low occupancy.

• **Online Presence Enhancement:** - Optimize the hotel's online visibility and user experience.
- Invest in targeted digital marketing campaigns.

• **Customer Satisfaction Focus:** - Address factors affecting customer ratings promptly.
- Consider personalized services to enhance guest experience.

• **Platform Collaboration:** - Strengthen partnerships with successful booking platforms.
- Negotiate favorable terms to maximize revenue.

• **Direct Booking Incentives:** - Introduce incentives for guests booking directly through the hotel.
- Promote exclusive deals on the hotel's official website.

THANK YOU