**Data Analytic Project in the Hospitality Domain**

In this video, we'll learn about data analytics through a real-life project in the hospitality domain. No prior background or knowledge of Power BI is required. The video covers three main aspects:

1. \*\*Data Analytics through Power BI:\*\* Learn to use Power BI.

2. \*\*Business Specific Concepts in Hotels:\*\* Abhishek Anand, a revenue manager from Oyo Rooms, presents requirements, and a dashboard is built based on a dataset that mimics real-life scenarios.

3. \*\*Execution of a Data Analytics Project:\*\* Learn the step-by-step process of executing a data analytics project, from understanding requirements to solution design, data gathering, modeling, dashboarding, and incorporating stakeholders' feedback.

---

**Problem Statement:**

- The project aims to generate revenue insights for a fictional company named "Lake Grants," which operates multiple 5-star hotels across India.

- The company faces competition from other hotels, and the goal is to build a dashboard that generates insights for management.

- The data set provided includes various files, such as hotel information, room types, booking data, aggregated bookings, and metric lists.

- The project's problem statement and data set can be found on the Codebasics website, under Challenge Number One.

**Key Metrics Identified for the Dashboard**

1. \*\*Revenue (RevPAR - Revenue per Available Room):\*\* Total revenue divided by total rooms available.

2. \*\*Occupancy Percentage:\*\* Total successful bookings divided by total capacity.

3. \*\*Average Daily Rate (ADR):\*\* Average rate per room sold.

4. \*\*Daily Sellable Room Nights (DSRN):\*\* Total rooms available to sell on a daily basis.

5. \*\*Realization:\*\* Utilized room nights divided by booked room nights, which includes utilized room nights, no shows, and cancellations.

6. \*\*Weekend vs. Weekday Split:\*\* Analyzing performance based on weekdays and weekends.

7. \*\*Channel-level Analysis:\*\* Understanding booking sources and their impact on revenue.

8. \*\*City-level Analysis:\*\* Identifying trends and performance across different cities.

9. \*\*Property-level Analysis:\*\* Examining individual property performance among the 30-40 properties.

**Dashboard Design:**

- The dashboard will feature top-level metrics: Revenue, Occupancy Percentage, ADR, DSRN, and Realization.

- Filters will be provided for city, status (weekend/weekday), platform (channel), and property.

- Weekly and monthly trends will be visualized, showing changes in metrics over time.

- The dashboard will enable decision-making by providing data movement insights and allowing multiple "why" questions to be asked.  
  
**Dashboard Contents:**

1. \*\*Occupancy Fluctuations:\*\* The dashboard presented data on occupancy rates over a three-month period, allowing hotel management to identify trends in occupancy. For example, they can determine if there are seasonal fluctuations, such as higher occupancy during holidays or special events. By understanding these patterns, hotels can allocate resources, staff, and marketing efforts more effectively during peak demand periods.

2. \*\*Flat Pricing Strategy:\*\* The dashboard indicated that some hotels within the chain had a consistent average daily rate (ADR) across weeks. This insight is crucial for pricing strategy optimization. A dynamic pricing strategy, as mentioned in the conversation, involves adjusting room rates based on demand and other factors. For example, if a hotel notices that occupancy is consistently high during weekends, they could implement a higher ADR for those days, optimizing revenue.

3. \*\*Weekday-Weekend Pricing:\*\* The dashboard allowed comparison of weekday and weekend pricing. Hotels can use this data to implement a weekday-weekend pricing strategy, where rates are higher during weekends when demand is typically higher. For example, hotels in leisure destinations might increase prices during weekends to capitalize on travelers looking for weekend getaways.

4. \*\*Occupancy-Rating Correlation:\*\* The data in the dashboard demonstrated a correlation between occupancy rates and average ratings. Hotels with lower occupancy rates tend to have lower average ratings, indicating that customer satisfaction plays a role in attracting guests. An example would be a hotel that consistently receives positive reviews maintaining higher occupancy rates compared to a hotel with negative reviews.

5. \*\*Channel Performance:\*\* The dashboard provided insights into the performance of different booking channels. Hotels can analyze metrics such as booking volume and revenue generated from each channel. This information helps hotels understand where their bookings are coming from and allocate resources to the most effective channels. For instance, if a hotel notices that a significant portion of bookings come from online travel agencies (OTAs), they might consider negotiating better commission rates with those OTAs.

6. \*\*Opportunity Identification:\*\* By analyzing data for the hotel with the lowest occupancy, hotel management can identify specific areas for improvement. For example, if this hotel receives consistently low ratings, it may indicate service quality issues that need to be addressed. Alternatively, the hotel's marketing strategy may need enhancement to attract more guests.

7. \*\*Promotional Opportunities:\*\* The dashboard revealed that hotels were not fully utilizing promotions, particularly on their own booking channel. This presents an opportunity to create targeted promotions to incentivize direct bookings. An example of this would be offering an exclusive discount to guests who book directly through the hotel's website, encouraging them to bypass third-party channels.

8. \*\*Pricing Elasticity:\*\* The concept of pricing elasticity was discussed in the conversation. Hotels need to understand how changes in room rates impact occupancy. If a hotel increases rates too much, it might discourage bookings, leading to lower occupancy. Conversely, lowering rates might attract more guests but could result in decreased revenue per booking. This balance is critical for optimizing revenue while maintaining occupancy.

9. \*\*Level 3 and Level 4 Analysis:\*\* The conversation highlighted the need for deeper analysis at the level of star ratings, room categories, location, and amenities. For example, a hotel may have different types of rooms (standard, deluxe, suites) with varying pricing. Analyzing the occupancy and revenue performance of each room category can help the hotel fine-tune pricing based on demand for specific room types.

10. \*\*Collaborative Decision-Making:\*\* The review session illustrated the value of collaboration between data analysts and industry experts. The data analyst provided the dashboard's capabilities, while Abhishek, as the industry expert, offered valuable feedback based on his knowledge of the hotel business. This collaboration ensures that data-driven insights align with real-world business needs, leading to more effective decision-making.

These trends and insights, when applied by the hotel chain, can drive improvements in occupancy, revenue, and overall guest satisfaction. By leveraging the power of data analytics and incorporating industry expertise, hotels can make informed decisions to stay competitive in the dynamic hospitality industry.  
  
**Learnings from this Project**  
  
Sure, here are some key learnings from the project based on the detailed explanation of the dashboard, stakeholder interactions, and insights:

1. \*\*Effective Stakeholder Communication\*\*: The project highlighted the importance of clear and ongoing communication with stakeholders. Understanding their specific needs, questions, and the business context is crucial to designing a relevant and impactful dashboard.

2. \*\*Balancing Data Depth and Simplicity\*\*: The dashboard design showcased the balance between providing detailed data for analysis and keeping the interface simple and user-friendly. This balance ensures that stakeholders can quickly grasp essential insights without feeling overwhelmed by the data.

3. \*\*Importance of User-Focused Design\*\*: The dashboard was tailored to address the specific needs of the business stakeholders. It included key metrics, visual representations, and interactive features that aligned with the stakeholders' decision-making process, making it a valuable tool for them.

4. \*\*Data-Driven Decision Making\*\*: The project demonstrated how data-driven decision-making is empowered by well-designed dashboards. Insights extracted from the data (e.g., occupancy rates, pricing strategy, impact of ratings) drove strategic discussions, highlighted areas of improvement, and identified revenue optimization opportunities.

5. \*\*Holistic View for Actionable Insights\*\*: The dashboard's holistic view, combining various metrics (occupancy, ADR, RevPAR, etc.) and allowing filtering by different criteria (week, month, city), provided a comprehensive understanding of the business's performance. This helped in identifying trends, correlations, and areas for improvement.

6. \*\*Iterative Development and Feedback Loop\*\*: The project showed the value of iterative development and incorporating stakeholder feedback. The initial version (MVP) allowed stakeholders to interact with the dashboard and provide valuable feedback, leading to further improvements and a more polished final version.

7. \*\*Data Privacy and Ethics\*\*: The discussion about dynamic pricing raised considerations about pricing strategies and their impact on different booking platforms. It's important to maintain ethical practices, avoid price discrimination, and ensure consistency across platforms while optimizing revenue.

8. \*\*Continuous Learning and Adaptation\*\*: The project emphasized that data analysis and dashboard creation are ongoing processes. As the business evolves and new data becomes available, the dashboard needs to adapt to capture changing trends and provide relevant insights.

9. \*\*Importance of Domain Knowledge\*\*: Understanding the hotel industry's nuances, such as the impact of seasons, pricing strategies, and guest preferences, is vital for meaningful analysis. Domain knowledge enhances the ability to extract actionable insights from the data.

10. \*\*Collaboration and Synergy\*\*: The success of the project relied on the collaboration between the data analyst and the business stakeholders. Their combined expertise, perspectives, and shared goals led to the creation of a valuable tool for decision-making.

These learnings can serve as valuable insights for future data analysis and dashboard projects, ensuring that they are impactful, user-centric, and aligned with the goals of the business stakeholders.