**Capstone Project Submission**

**Instructions:**

i) Please fill in all the required information.

ii) Avoid grammatical errors.

|  |
| --- |
| **Team Member’s Name, Email and Contribution:** |
| **Team Member’s Name:**  1.Mr.Pratik Ghodke Email Id :- pratikghodke777@gmail.com  2.Mis.Madhuri Bonela Email Id :- [madhuribonela91998@mail.com](mailto:madhuribonela91998@mail.com)  **Contribution:**  **1.Mr.Pratik Ghodke**   1. Importing libraries. 2. Importing data set. 3. Processing of data set. 4. Cleaning of data set. 5. Data exploration of data set. 6. Identification and removal of null values. 7. Visualize Cancelled bookings 8. Visualize Average Daily Rate (ADR) :- dividing the sum of all lodging transactions by the total number of staying nights 9. Visualize Now let’s check the arrival date by months 10. Visualize Market Segment 11. Visualize Year of arrival date 12. Visualize Customer Type 13. Visualize Distribution Channel 14. Visualize Repeated Guest 15. Visualize which are the months of highest and least occupation? 16. Visualize which is the most reserved room type? 17. PPT slides 18. Technical documentation.     **2.Mis.Madhuri Bonela**   1. Importing libraries. 2. Importing data set. 3. Processing of data set. 4. Cleaning of data set. 5. Data exploration of data set. 6. Identification and removal of null values. 7. Visualize Cancelled bookings 8. Visualize Average Daily Rate (ADR) :- dividing the sum of all lodging transactions by the total number of staying nights 9. Visualize Now let’s check the arrival date by months 10. Visualize Market Segment 11. Visualize Year of arrival date 12. Visualize Customer Type 13. Visualize Distribution Channel 14. Visualize Repeated Guest 15. Visualize which are the months of highest and least occupation? 16. Visualize which is the most reserved room type? 17. PPT slides 18. Technical documentation. |
| **Please paste the GitHub Repo link.** |
| GitHub Link:-  Drive link:- |
| **Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches and your conclusions. (200-400 words)** |
| Summary of capstone project and it's components:  Hotel booking analysis is used to define patterns and to predict the future bookings of hotels by using time sequence in data. Where the data is used to predict future trends and what factors can even increase hotel bookings. Hotel industry is a very volatile industry and the bookings depend on variety of factors such as type of hotels, seasonality, days of week and many more. This makes analysing the patterns available in the past data more important to help the hotels plan well. Using the historical data, hotels can perform various campaigns to boost the business.  We can tackle future prediction from the following analysis :  1. The number of cancellations.  2. Country wise bookings.  3. Type of rooms preferred by people.  4. The type of hotels preferred by people.  5. Types of customers and their likes.  All the above factors can be analysed and information can be  retrieve so that we can apply them on business to increase  Profit and for long-run business.  Components :    1. Statistical analysis and implementation :The assessment in Hotel booking analysis and plotting of graphs in accordance to dataset gives statistics and host vicinity which are most favored and appreciated by means of clients or customers.  2.Average Daily Rate (ADR) :- dividing the sum of all lodging transactions by the total number of staying night  3. Market Segment: - Lets check the Market segment designation. In categories, the term “TA” means “Travel Agents” and “TO” means “Tour Operators PROBLEM STATEMENT:  * Hotel Type * Cancelled bookings * Average Daily Rate (ADR) :- dividing the sum of all lodging transactions by the total number of staying nights * Now let’s check the arrival date by months * Market Segment * Year of arrival date * Customer Type * Distribution Channel * Repeated Guest * Which are the months of highest and least occupation? * Which is the most reserved room type?   GOAL OF THE PROJECT:  The goal of this project is to provide actuals insides date to hotel management team that can serve the people most efficient way, hence it can increased the profitability of overall hotel business. It can be achieve by customer satisfaction by providing customer world class services with provide a best effective price for customer  **Approach**:  **Imported Libraries**  In this part, we imported the required libraries NumPy, Pandas, matplotlib, and seaborn, to perform Exploratory Data Analysis and for prediction, we imported the Scikit learn library.  **Missing Value Imputation**  We will now check for missing values in our dataset. After checking not existed any missing values, In case there are any missing entries, we will impute them with appropriate values.  **Graphical Representation**  We will start with Univariate Analysis, bivariate Analysis and conclude with various dependent factors that impact Airbnb factor .  In graphical representation we concluded the factors that play vital role in Airbnb booking Analysis is price range ,location are key factors.  **Conclusion:**   * City hotel got most of booking in last three years of time span. * During the year, we have a 27.48% of cancelations.in that city hotels boking cancellation is more than resort hotel * Resort hotels, the average daily rate is more expensive during august, July and September. * For city hotels, the average daily rate is more expensive during august, July, June and may. * The arrivals of customers is more in the month of August and next month with more numbers of arrivals was in the month of July comparatively less arrivals in other months. * Compared to other market segment designation online TA is high in range. With 56477. * The number of arrivals in the year of 2016 is high with 56707 and the next year in 2017 is 40667 * The frequency of customer repetition was low hotel need to have opportunity in that area where they can make improvements * The month of highest occupation is august with 11.62 % of the reservations. The month of lest occupation is January with 4.90 % of the reservations. * The most of reserved room by customer is type A category which is 72 % |