

PYTHON BASED SMART HOTEL DATA ANALYSIS

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ABSTRACT

Hotel industry is very important industry who generate huge revenue not only because of their good services but also effective use of its data analytics. It can change its customer base dramatically high by analyzing how business is run. It is another data rich industry that captures huge volumes of different types of data. However, for most hoteliers data remains an underused and under-appreciated asset.

With analytical exploitation of their data, hoteliers can go beyond their traditional loyalty programs and deepen their knowledge of guests in order to develop a more granular understanding of segment behavior, needs, and expectations; identify profitable customer segments and their buying preferences; and identify opportunities to attract new guests.

Predictive analytics, like forecasting and optimization, can help you figure out why things are happening, show you what will happen next, or even lead you to the best alternative action considering all of your operating constraints. Hoteliers are starting to use more and more predictive analytics to move from reactive to proactive decision making, which would enable them to stay one step ahead of trends, set strategy and achieve goals. They gain advantage over the competition, increase value to shareholders, and continue to surprise and delight their guests.

CHAPTER 1 INTRODUCTION

For the hotel industry, a more useful approach might be to identify the unique cluster groups and to then conduct a separate value segmentation exercise for each cluster.

In this project we are analyzing customer data to learn spending habits. Who are our most profitable customers? What are their total bill? how much tips they are giving? what are their gender? Are they smoker? What is the size of customers? Means how many people comes in a group? On which day how many customers are coming? Etc.

Those are the kinds of relevant questions can be answered easily with this analysis. We can analyze total bill by size, day, time with the help of Python. It is very helpful to the Hotel to calculate the loopholes and to increase the clients and making different strategies to make more profit.

1.1 PURPOSE

The purpose of this Hotel Data Analytics project is to maximize the profit and increase the client base by analyzing different analytical charts and graphs so that Hotel owner can take accurate decision to improve

its business. In this project we are going to analyze following things.

- ✓ Analyzed problem definition.
- ✓ Have analyzed, identify patterns, and explore the data.
- ✓ Building, publishing customized interactive reports and dashboard using Python Language (NumPy, Pandas, Matplotloib, Seaborn, Plotly libraries)
- ✓ Developed Python workbooks to perform analysis on total bill, tips, gender, etc.

1.2 SCOPE

It will help to increase the profit of the Hotel owners. On the basis of data analysis of different charts, hotel owners can take fast and error free decision so that Hotel Business will automatically grow. It will help to analyze the pattern of spending habits of the customers. We can analyze the data gender wise, day wise, etc.

1.3 STUDY OF EXISTING SYSTEM

Data analytics is very new to the IT industry, so till now no any system have been implemented to analyze the Hotel Data. To present its data in the graphical way, to help owners / decision makers to visualize the data in effective way.

CHAPTER 2
PROPOSED SYSTEM

The aim of the proposed system is to represent the data in the form of graphical way. It helps to owners / decision makers to analyze the data in very simple manner. So that they can take fast and effective decision to maximize the customer base & ultimately the profit.

- ✓ Ensure data accuracy's
- ✓ Minimize the errors in decision making process.
- ✓ Minimum time needed for taking right action.
- ✓ Greater efficiency.
- ✓ Better utilization of resources.
- ✓ User friendliness and interactive.

CHAPTER 3
REQUIREMENTS

2.1 SOFTWARE REQUIREMENT

<u>Software</u>	<u>Description</u>

Windows	Operating System
Python Editor – Jupyter Notebook	For execution of the program

2.2 HARDWARE REQUIREMENT

<u>Hardware</u>	<u>Description</u>
Ram	256MB
Hard Disk	20 GB
Processor	Pentium III
Monitor	14.4”
Keyboard	104 Keys

CHAPTER 4 CONCLUSION

The aim of developing Hotel Data Analytics project is to provide the solution on all the questions that can arise while taking the right decision in case of maximizing the client base and profit. Data representing in the different charts / graphs is the main thing to understand data very effectively. It will be user friendliness, anyone can understand the graphs without complicated searching procedures.

CHAPTER 5 BIBLIOGRAPHY

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