

ANALYZING THE PERFORMANCE & EFFICIENCY OF THE
RADISSON HOTELS USING DATA VISUALIZATION
TECHNIQUES

A PROJECT REPORT

Submitted by

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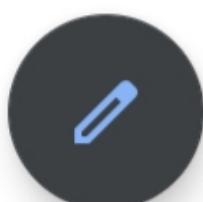
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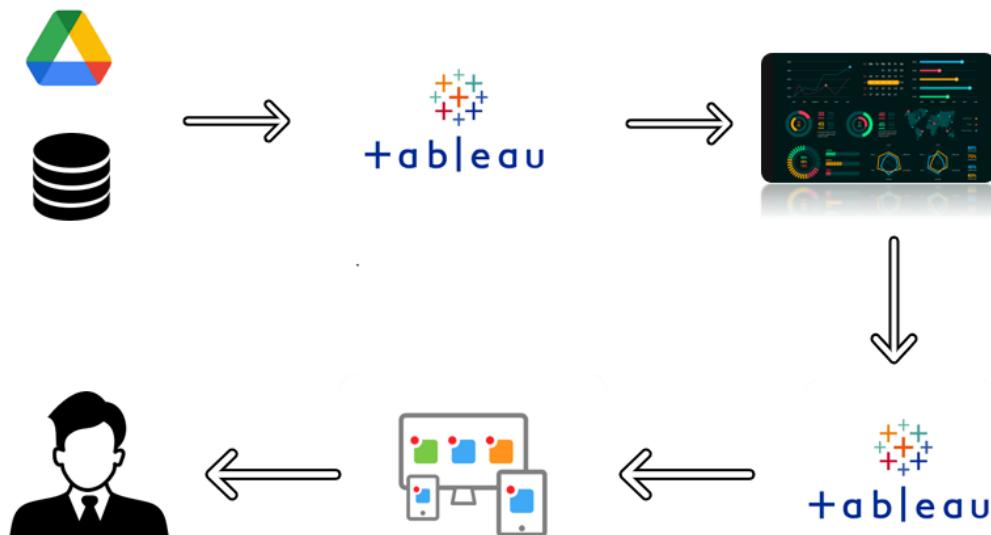
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Analysing the Performance & Efficiency of The Radisson Hotels using Data Visualization Techniques

The hotel industry is a broad category of businesses that provide lodging services for travellers and tourists. This can include a wide range of establishments, from luxury resorts to budget-friendly motels, as well as extended stay hotels, boutique hotels, and more. Hotels can be found in nearly every corner of the world, and are often a major component of the tourism and travel industry in a given area.

Radisson owns multiple five-star hotels across India. They have been in the hospitality industry for the past 100 years. Due to strategic moves from other competitors and ineffective decision-making in management, Radisson is losing its market share and revenue in the luxury/business hotels category. As a strategic move, the managing director of Radisson wanted to incorporate Business and Data Intelligence in order to regain their market share and revenue. Our task is to create an analytics dashboard & story to provide them insights to make better business decisions.

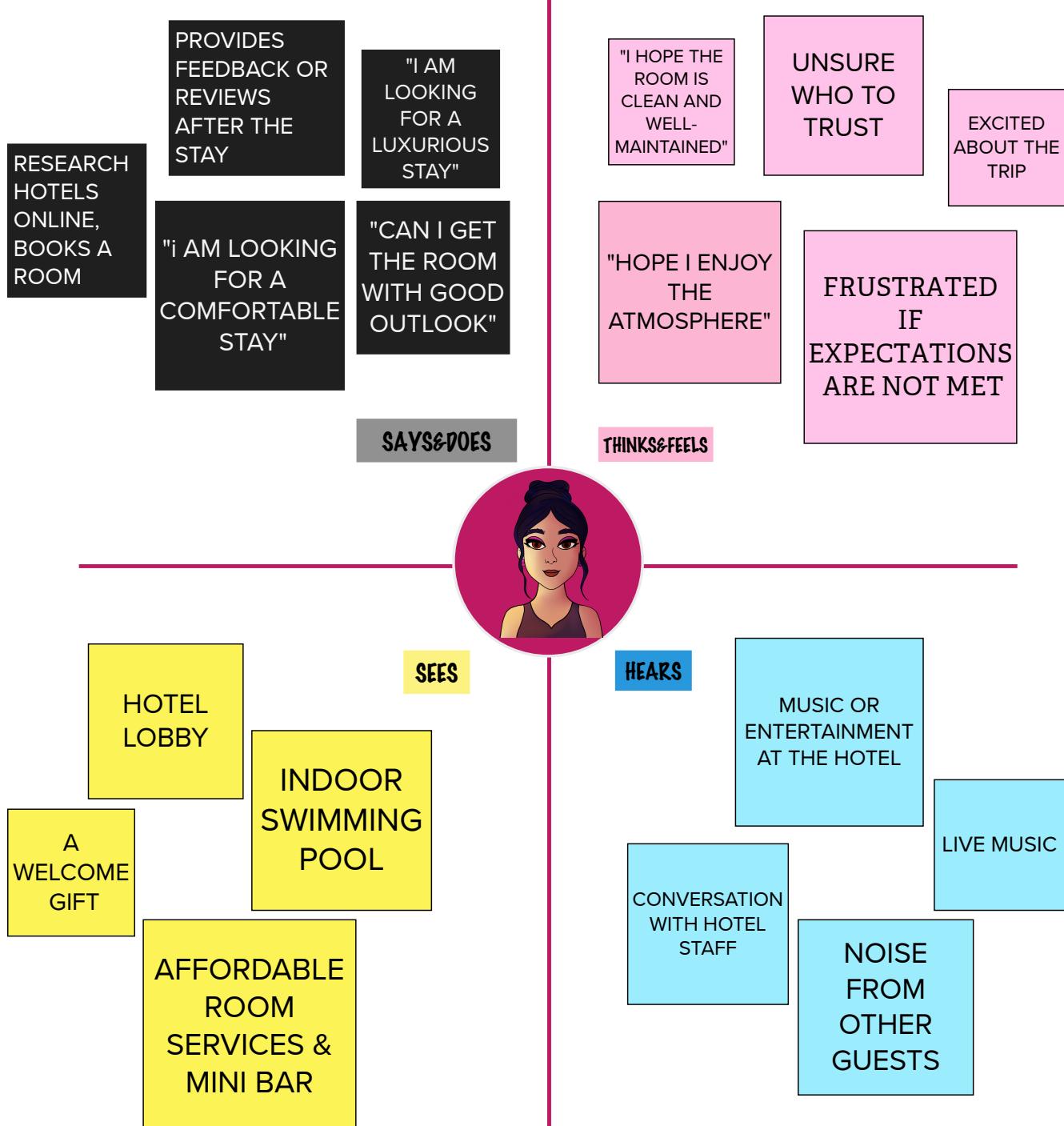
Technical Architecture:



PROBLEM DEFINITION & DESIGN THINKING

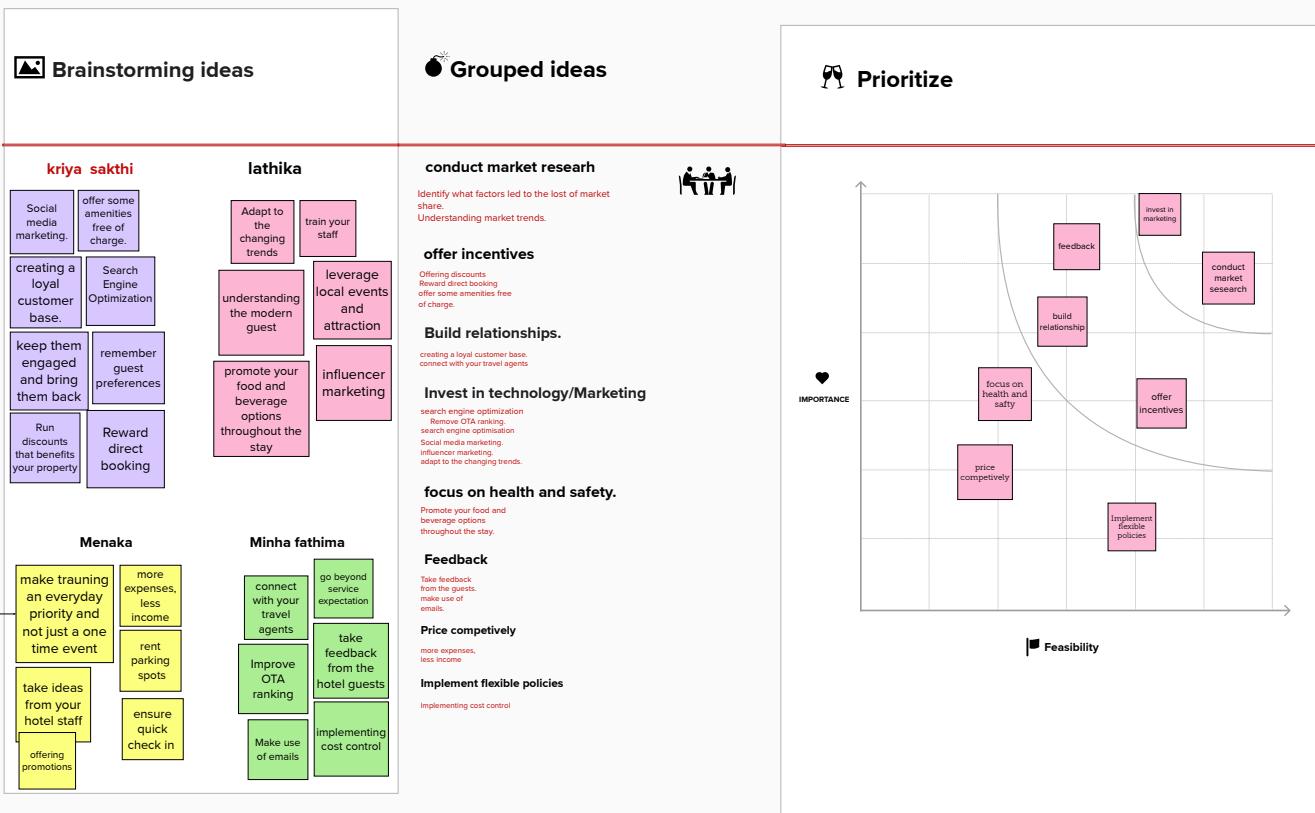
EMPATHY MAP:

. An Empathy map is a tool used to help understand empathize with the perspective of a particular user or customer . it is a visual representation of the use's attitude ,behaviors, emotion, and experiences that can be used to gain a deeper understanding of their needs and motivations. The empathy map is typical dived into **four quadrants : says, thinks, does and feels** . in quadrant, the user's thought's feelings, actions, and spoken words are recorded to help build amore complete understanding of their persp



2.2. IDEATION & BRAINSTORMING MAP :

- Ideation and Brainstorming Maps are tools used to generate and organize ideas in a structured and visual way. They are commonly used in creative problem solving, innovation, and product design to generate a large number of ideas and then organize them into meaningful categories.
- Ideation and Brainstorming Maps typically start with a central theme or problem statement in the center of the map. From there, branches are drawn out to represent different categories or subtopics related to the central theme. These categories can then be further expanded with additional branches to represent specific ideas.
- The purpose of an Ideation and Brainstorming Map is to encourage free thinking and generate as many ideas as possible. It allows participants to visually see how ideas are connected and to build upon each other's ideas. The map can then be used to prioritize and refine the most promising ideas. There are many variations of Ideation and Brainstorming Maps, including Mind Maps, Spider Maps, and Fishbone Diagrams.





DATA COLLECTION &EXTRACTION FROM MYSQL

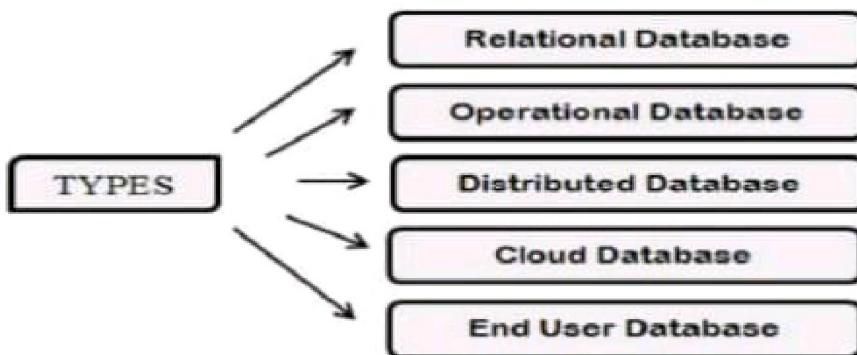
3.1.: Collect The Dataset :

- Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, evaluate outcomes and generate insights from the data.

3.1.1 : Understand The Data :

- Data contains all the meta information regarding the columns described in the CSV files

3.2: Storing Data In DB & Perform SQL Operations :



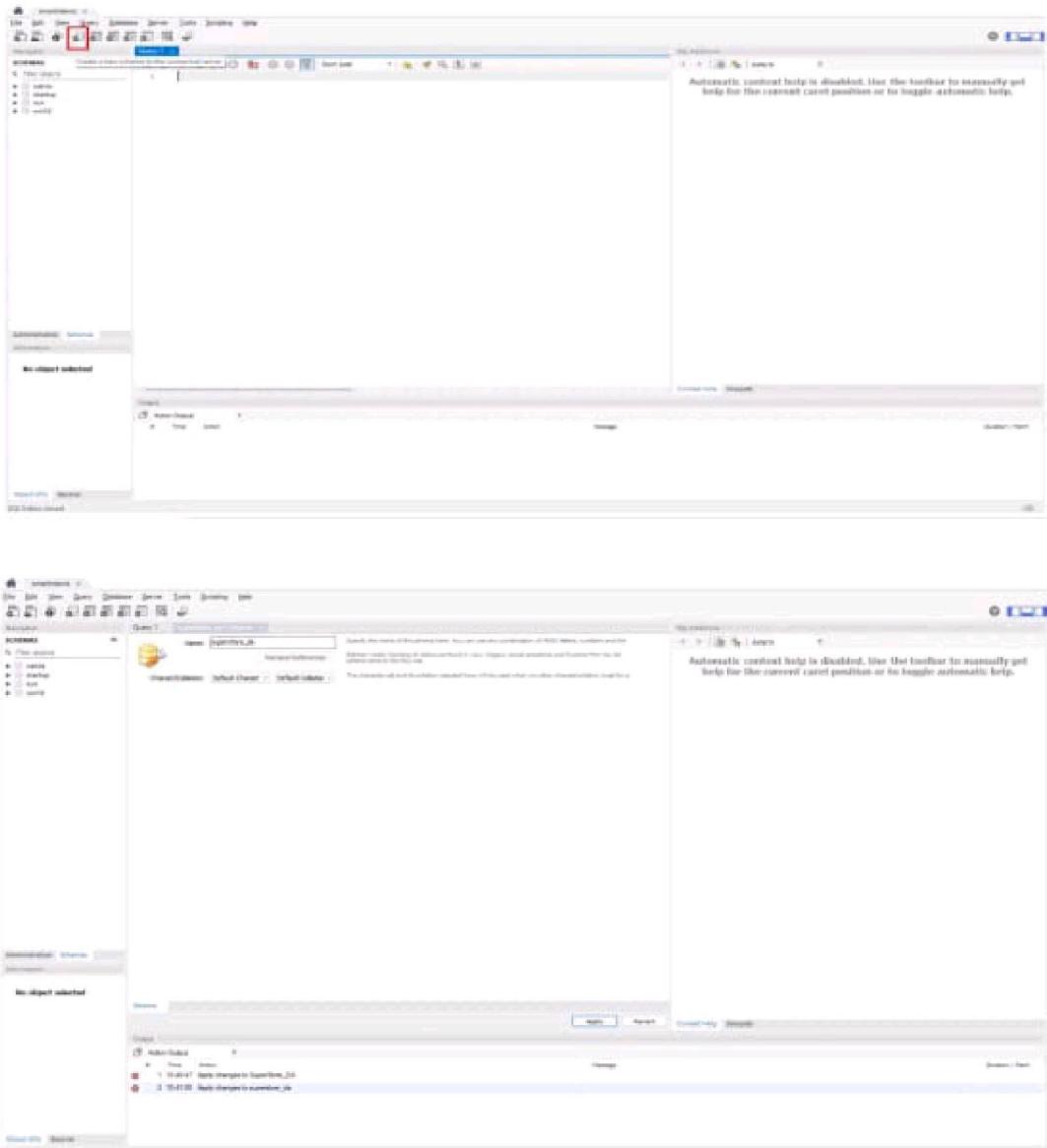
3.2.1. : Introduction To Database :

- A database is an organized collection of data, generally stored and accessed electronically from a computer system. It supports the storage and manipulation of data.
- Its ability to organize, process and manage information in a structured and controlled manner is the key to many aspects of modern business efficiency.

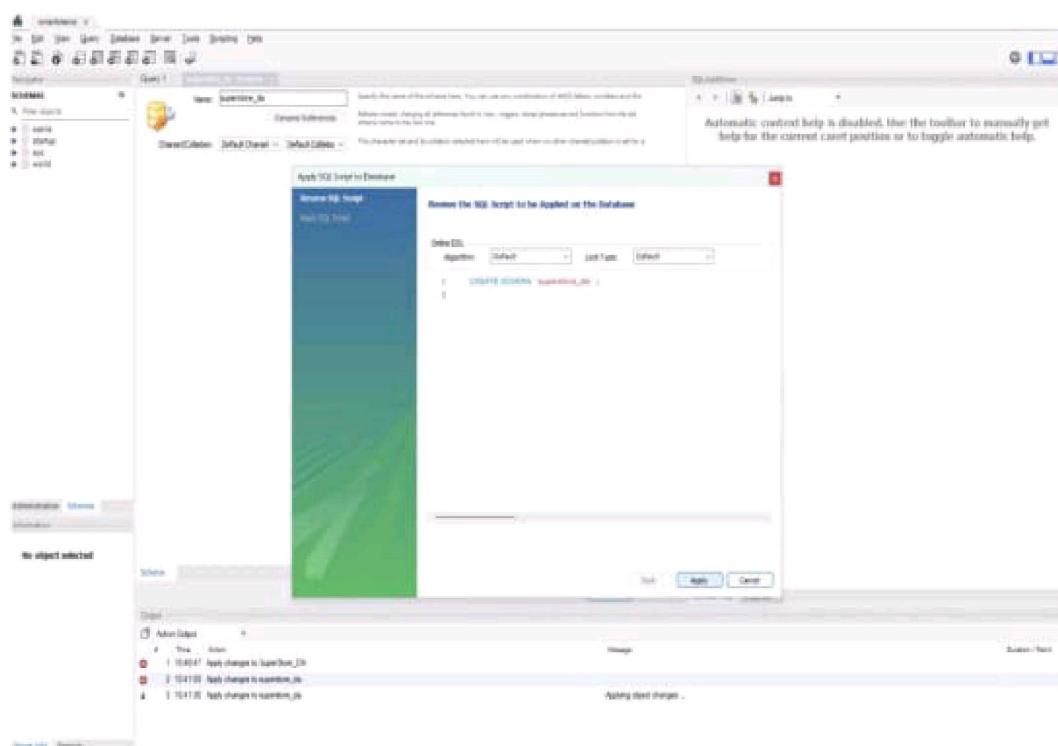


3.2.2.: Creating Database And Table In MYSQL :

- Click on the database icon on the icon menu panel to create the schema.
- Give the name of the schema and click on apply

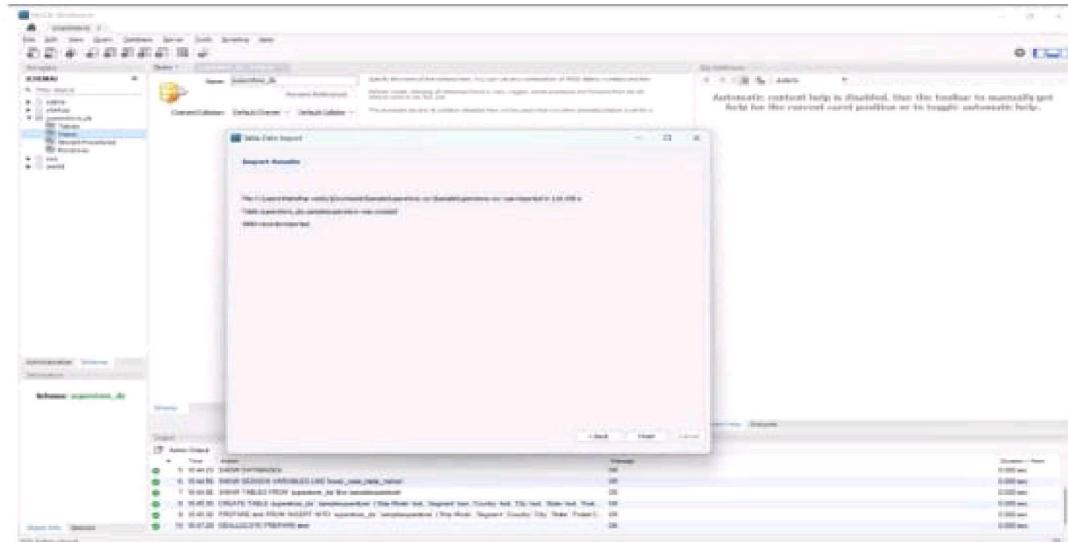


- Here you can see SQL query in SQL script for creation of new schema. Click on Apply.
- As you can see of the left panel Schema with the given name is created.
- Click on schema name and give a Right-Click on tables
- Now click on Table Data Import Wizard to load the dataset.

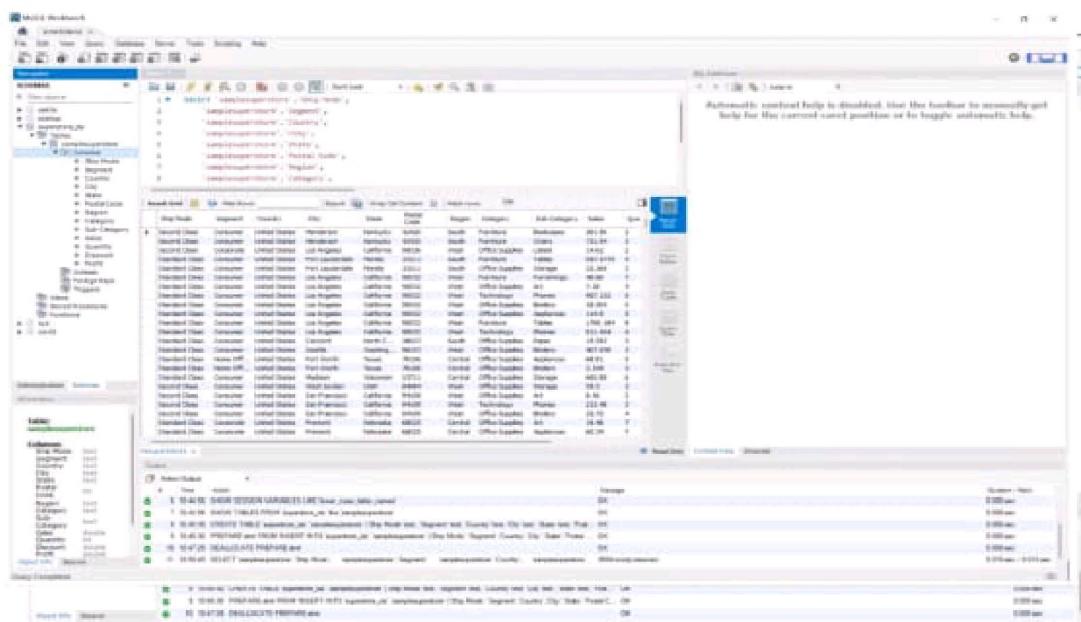


- Click on Browse and select the file in your computer to load the dataset file as a Table into that schema you created in MySQL.

- Here you can see the dataset that loaded from the excel/csv file we have loaded and you can see the datatype of each column too.



- Here you can see the total number of records/rows that are loaded.
 - Here you can see the loaded dataset that we got by using select statement in query tab.



3.2.3 : CRUD Operations :

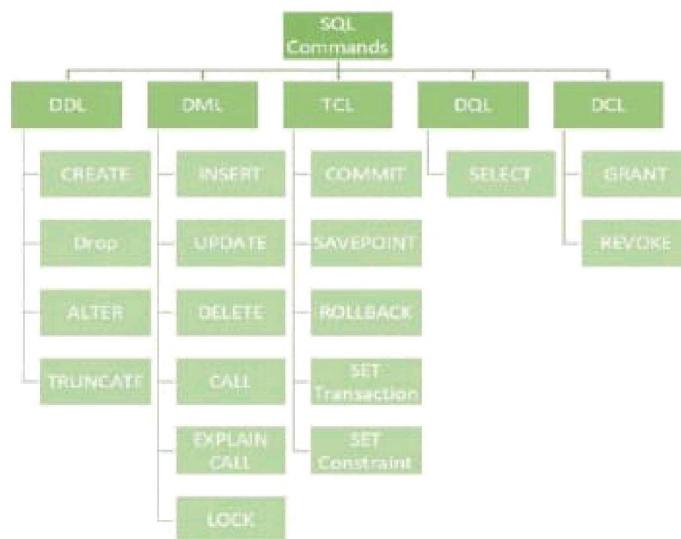
- CRUD is an acronym for CREATE, READ(SELECT), UPDATE, and DELETE statements in SQL Server.



- CRUD in database terms can be mentioned as Data Manipulation Language (DML) Statements.

3.2.4 : Basic SQL Operations :

- DDL – Data Definition Language
- DQL – Data Query Language
- DML – Data Manipulation Language
- DCL – Data Control Language
- TCL – Transaction Control Language



INTRODUCTION TO TABLEAU

4.1.: What is Tableau?

- Tableau is a ground breaking data visualization software created by Tableau Software.
- Tableau connects easily and nearly any data source.
- Tableau allows for instantaneous insight by transforming data into interactive data visualizations called dashboards



4.2.:Features of Tableau :

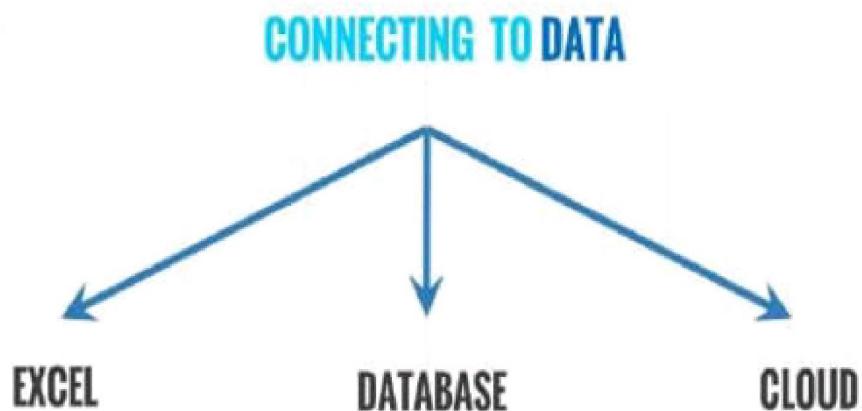
- Informative Dashboards
- Supports numerous Data Sources
- Provides Great Security
- Easy Collaboration & Sharing
- Provides Mobile Version
- Trend lines and Predictive analysis
- Availability of Geo Maps

4.3.: Products of Tableau :

- Tableau Public
- Tableau Server
- Tableau Desktop



4.4.: Connecting Tableau with Data Sources :







4.5:Working with Flat files :

- In the To a File section you can see the list of file extensions.
- In the below you can see more option if the list of your file extension is not there.

4.5.:Working with the Spreadsheets :

- Tableau enables us to connect with spreadsheets to import the data.

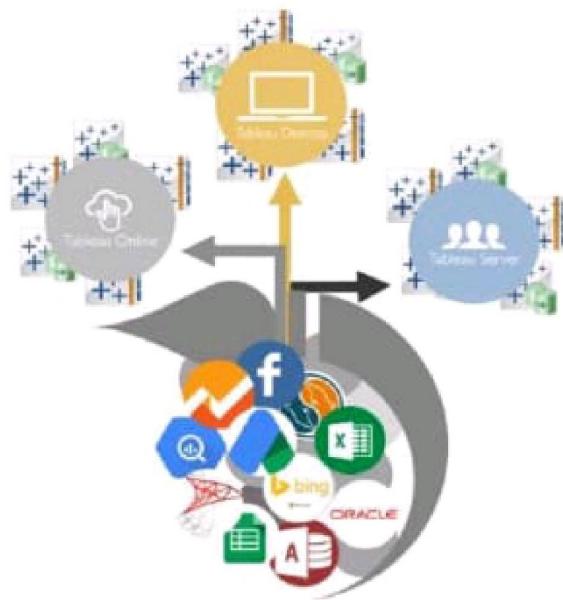
The screenshot shows the Tableau Data Source Editor interface. On the left, the 'Connections' pane displays a single connection named 'SampleSuperstore'. Below it, the 'Files' pane shows a file named 'SampleSuperstore.csv'. The main workspace is titled 'SampleSuperstore' and contains a preview of the 'Sales' data table. The table has columns: ID, Order Date, Ship Mode, Segment, Country, City, State, Zip Code, Customer Demographic, and Product Category. The preview shows several rows of data, including entries for different customers across various states and product categories like Office Supplies and Technology.

ID	Order Date	Ship Mode	Segment	Country	City	State	Zip Code	Customer Demographic	Product Category
1000000000	2010-01-01	Next Day	Consumer	United States	Henderson	Kentucky	40420	Young	Food
1000000001	2010-01-01	Next Day	Consumer	United States	Henderson	Kentucky	40420	Young	Food
1000000002	2010-01-01	Next Day	Consumer	United States	Los Angeles	California	98030	West	Office Supply
1000000003	2010-01-01	Next Day	Consumer	United States	Fort Lauderdale	Florida	33333	South	Food
1000000004	2010-01-01	Next Day	Consumer	United States	Fort Lauderdale	Florida	33333	South	Office Supply
1000000005	2010-01-01	Next Day	Consumer	United States	Los Angeles	California	90022	West	Food
1000000006	2010-01-01	Next Day	Consumer	United States	Los Angeles	California	90022	West	Office Supply
1000000007	2010-01-01	Next Day	Consumer	United States	Los Angeles	California	90022	West	Technology
1000000008	2010-01-01	Next Day	Consumer	United States	Los Angeles	California	90022	West	Office Supply
1000000009	2010-01-01	Next Day	Consumer	United States	Los Angeles	California	90022	West	Office Supply

CONNECTING DATABASE AND TABLEAU

5.1.: Connecting Database and Tableau :

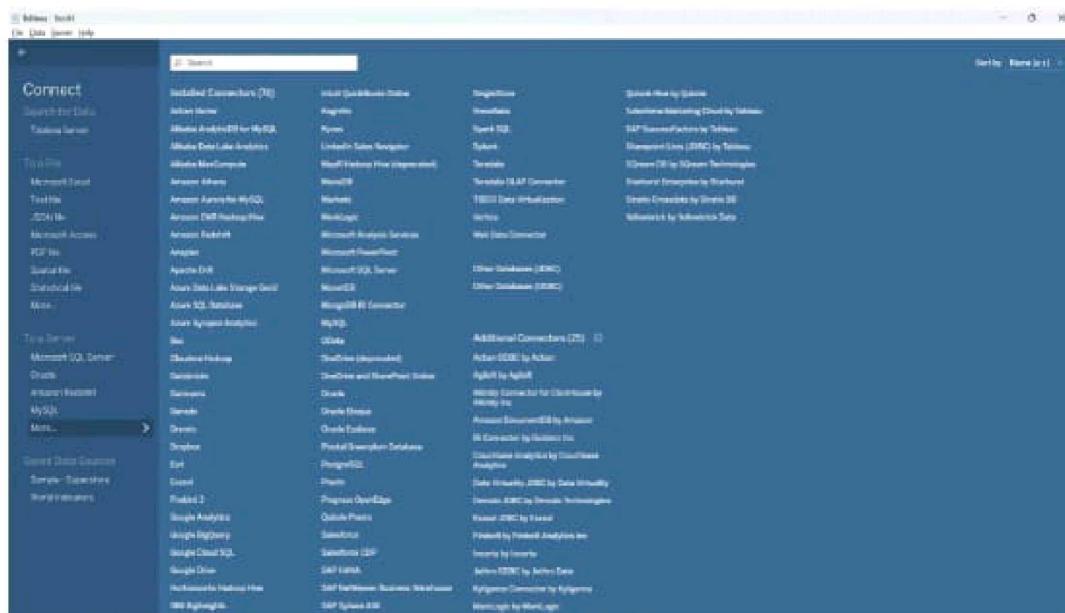
- Before you begin your analysis, you must connect to your data and then set up the data source.
- Before you can build a view and analyze your data, you must first connect Tableau to your data.
- Tableau supports connecting to a wide variety of data, stored in a variety of places.
- For example, your data might be stored on your computer in a spreadsheet or a text file, or in a big data, relational, or database on a server in your enterprise.



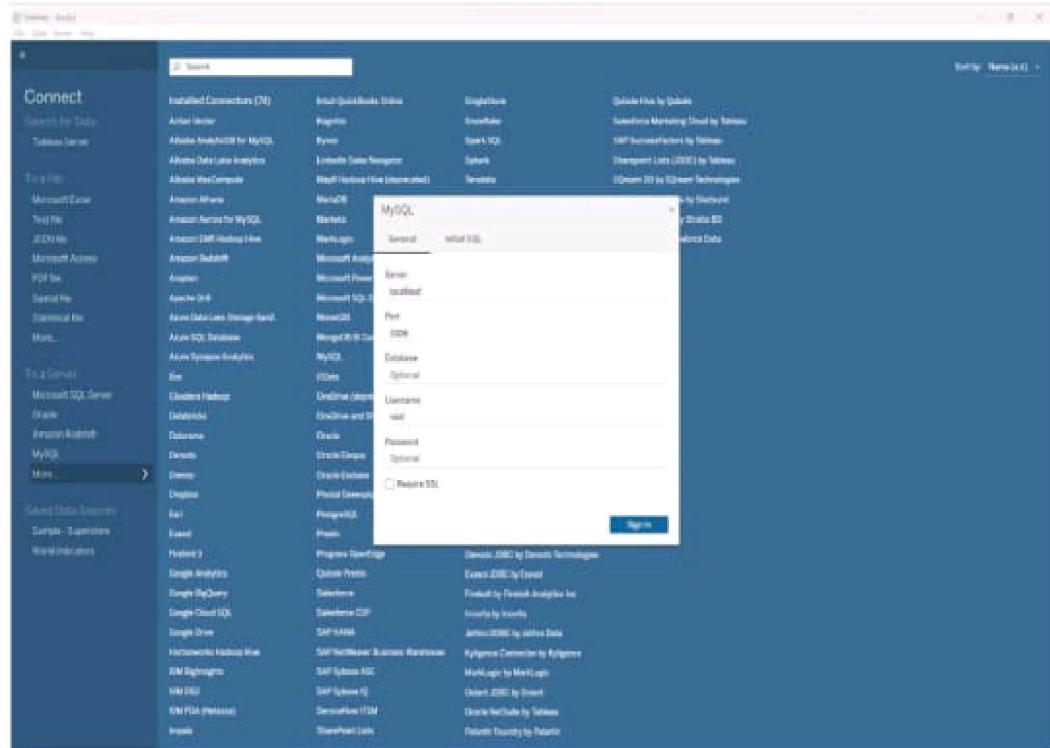


5.2.: List of Data Sources Supported by Tableau Desktop :

- When you launch Tableau Desktop, the data connectors that are available to you are listed on the Connect pane, which is the left pane on the Start page.



- Name of the server that hosts the database you want to connect to.
 - Username and password
 - Are you connecting to an SSL server?
 - (Optional) Initial SQL statement to run every time Tableau connects. If the connection is success you can see this page.



- Now you can go to sheets and start working on the dataset to create visualizations.

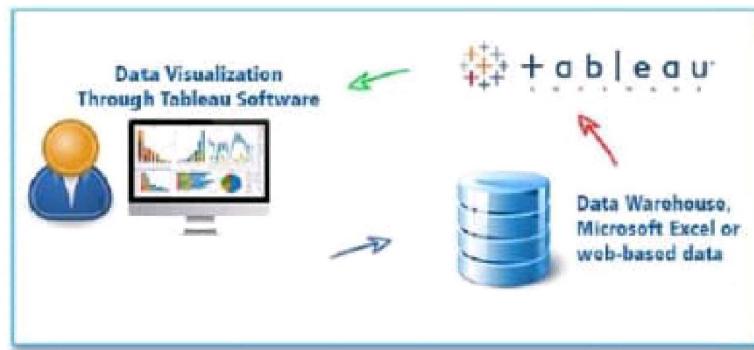
Name	Type	Field Name	Physical Type	Memory File
CustomerID	Text	CustomerID	Text	Segment
CustomerName	Text	CustomerName	Text	
Segment	Text	Segment	Text	
City	Text	City	Text	
State	Text	State	Text	
ProductCode	Text	ProductCode	Text	
Sales	Number	Sales	Number	

DATA VISUALIZATION

6.1.: What is Data Visualization...??

- Data visualization is the graphical representation of information and data. By using visual elements like chart, graph and maps.

- Data visualization tools provide an accessible way to see and understand trends, outliers, and patterns in data.



Advantages :

- Easily sharing information.
- Interactively explore opportunities.
- Visualize patterns and relationships.

6.2 : Types of Visualization in Tableau :

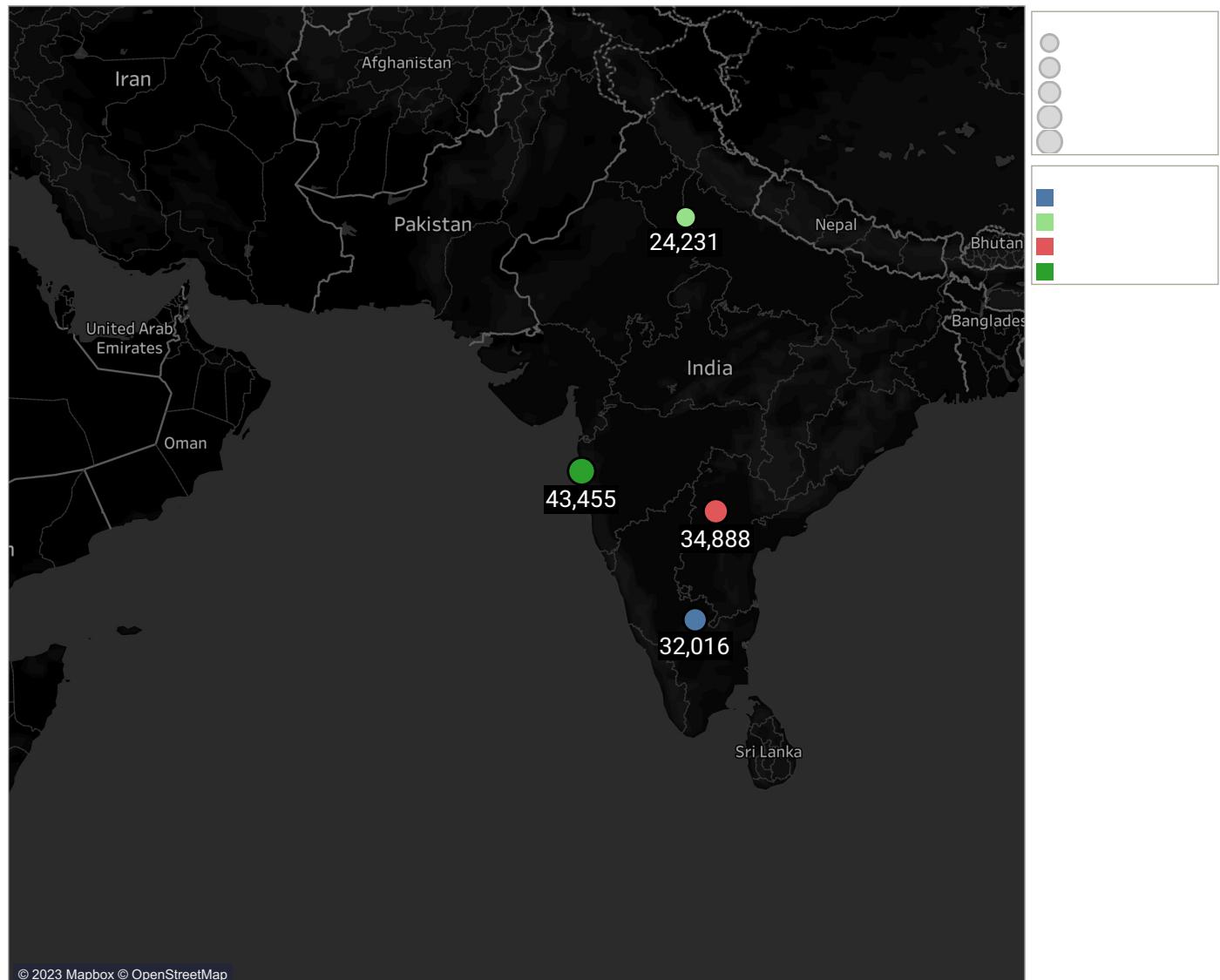
Histograms	Box plot
Motion	Pie
Bar	Line
Bubble	Bullet
Scatter	Tree

DASHBOARD AND

STORIES

RADISSON ANALYSIS STORY

Mumbai has made highest no of successful bookings-43,455	room class	other platforms and make your trip contributed 40% of the total checked out bookings	all properties has average 25% cancellation rate and 50% occupancy rate	guest prefer luxury as 61.61%
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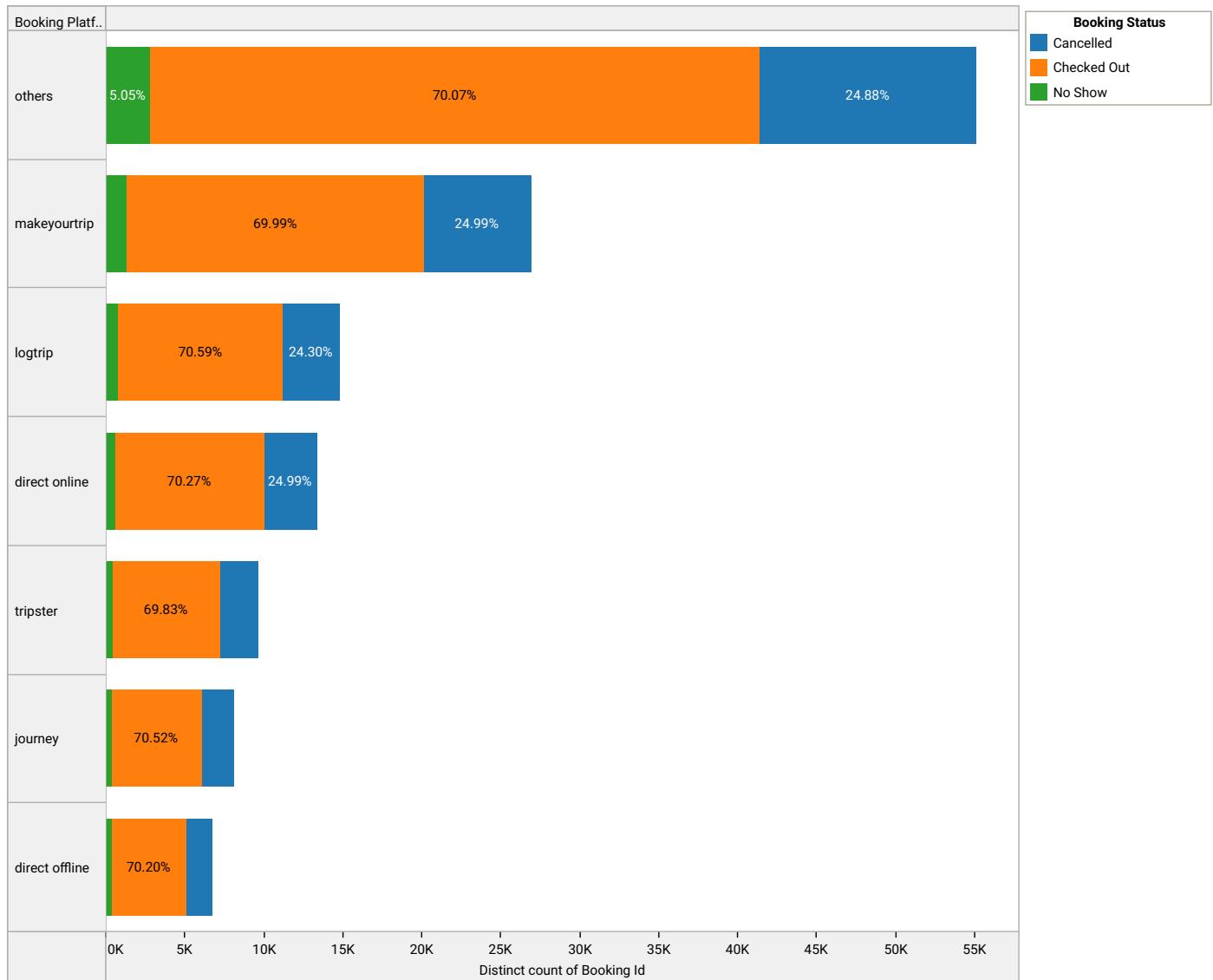
RADISSON ANALYSIS STORY

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RADISSON ANALYSIS STORY

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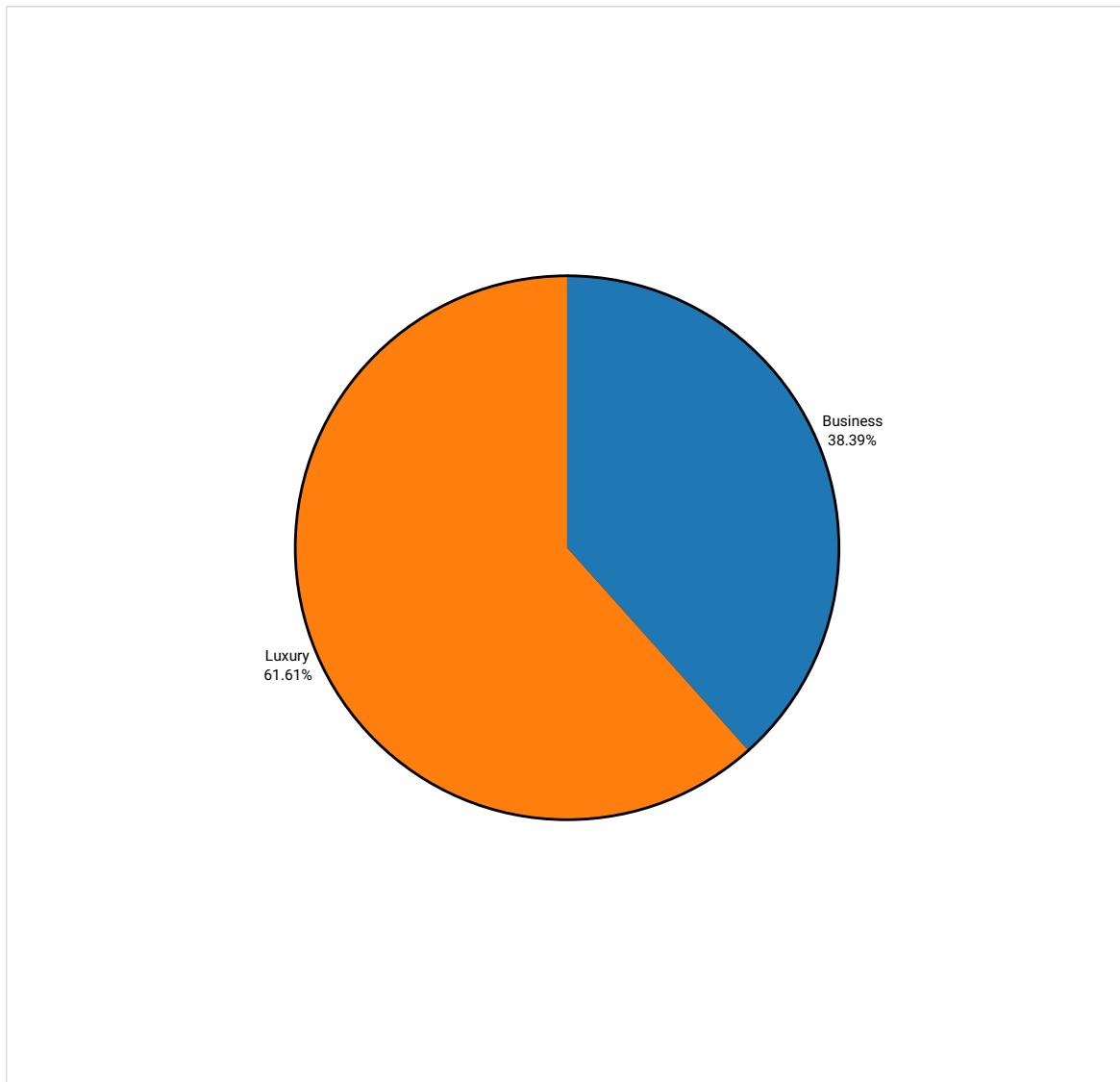
RADISSON ANALYSIS STORY

room class	other platforms and make your trip contributed 40% of the total checked out bookings	all properties has average 25% cancellation rate and 50% occupancy rate	guest prefer luxury as 61.61%	radisson exotica approached more in cities
------------	--	--	-------------------------------	--

Property Name	Property ..	Revenue	Capacity	Successful Booki..	occupancy %	Cancelled booking..
Radisson Bay	16562	56,437,570	9,016	4,820	53.46%	25.27%
	17562	51,914,158	7,636	3,424	44.84%	25.44%
	18562	69,255,910	11,132	7,333	65.87%	24.70%
	19562	82,443,540	8,832	5,812	65.81%	24.33%
Radisson Blu	16561	57,933,400	6,716	4,418	65.78%	25.51%
	17561	73,918,312	7,820	5,183	66.28%	24.52%
	18561	56,040,450	9,844	6,458	65.60%	24.17%
	19561	72,963,360	10,764	5,736	53.29%	24.65%
Radisson City	16560	54,932,178	8,740	4,693	53.70%	24.12%
	17560	87,996,216	11,316	6,013	53.14%	25.06%
	18560	61,007,200	10,028	6,638	66.19%	24.03%
	19560	81,876,345	9,108	5,979	65.65%	26.38%
Radisson Exotica	16559	118,448,418	11,132	7,338	65.92%	24.61%
	17559	93,996,570	9,292	6,142	66.10%	24.01%
	18559	47,844,020	11,776	5,256	44.63%	24.35%
	19559	60,023,460	8,740	4,705	53.83%	24.48%
Radisson Grands	16558	36,061,172	4,784	3,153	65.91%	25.06%
	17558	74,730,742	9,384	5,036	53.67%	25.66%
	18558	46,246,510	8,372	4,475	53.45%	24.98%
	19558	54,494,340	9,844	4,371	44.40%	24.55%
Radisson Palace	16563	89,135,998	10,764	7,147	66.40%	25.26%
	17563	101,511,080	9,568	6,337	66.23%	24.38%
	18563	44,838,780	8,924	4,728	52.98%	25.95%
	19563	68,596,005	10,120	5,413	53.49%	25.35%
Radisson Seasons	17564	66,125,495	8,924	3,982	44.62%	24.79%

RADISSON ANALYSIS STORY

room class	other platforms and make your trip contributed 40% of the total checked out bookings	all properties has average 25% cancellation rate and 50% occupancy rate	guest prefer luxury as 61.61%	radisson exotica approached more in cities
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Revenue	\$1,708,771,229.00
Category	
Business	
Luxury	

RADISSON ANALYSIS STORY

room class	other platforms and make your trip contributed 40% of the total checked out bookings	all properties has average 25% cancellation rate and 50% occupancy rate	guest prefer luxury as 61.61%	radisson exotica approached more in cities
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RADISSON HOSPIT..

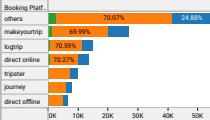
OCCUPANCY SPLIT BY CITY

Property Name	19.64%	28.46%	23.41%
Radisson Bay	19.64%	28.46%	23.41%
Radisson Blu	27.03%	25.85%	25.85%
Radisson City	22.19%	27.82%	22.46%
Radisson Executive	67.13%	10.13%	10.13%
Radisson Grand	24.92%	24.91%	26.77%
Radisson Hotel	27.59%	22.15%	27.59%
Radisson Soho	27.59%	22.15%	27.59%

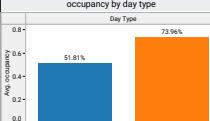
REVENUE SPLIT BY CITY

Property Name	14.90%	21.65%	21.20%	31.20%
Radisson Bay	14.90%	21.65%	21.20%	31.20%
Radisson Blu	33.54%	21.48%	22.31%	27.87%
Radisson City	38.79%	20.33%	19.22%	28.55%
Radisson Executive	68.52%	14.94%	14.94%	18.74%
Radisson Grand	35.83%	25.74%	25.74%	22.65%
Radisson Hotel	30.58%	29.31%	29.31%	22.58%
Radisson Seasons	100.00%			

booking % by platform



occupancy by day type



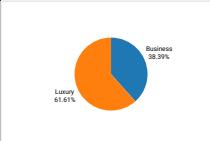
property by key metrics

Property ..	Property ..	Revenue	Capacity	S
		56,473,720	9,000	4,
Radisson	19562	51,100,000	14,536	4,
Bay	18562	69,253,010	11,132	7,
	19562	82,443,540	8,832	5,
	19561	57,933,400	6,716	4,
Radisson	17561	73,918,312	7,820	5,
Blu	18561	72,963,559	9,644	5,
	19561	72,963,559	9,644	5,
	19560	54,932,178	8,740	4,
Radisson	17560	87,996,216	11,310	6,
City	19560	81,007,290	10,098	6,

successful bookings by city



Revenue contribution % by category



successful bookings

134.59K

revenue by room class

\$1,708.77M

successful booking datawise



All

revenue
\$1,708.77M

occupancy in %

57.87%

ADVANTAGES &

DISADVANTAGES

ADVANTAGES

Customer Data Analysis & Market Segmentation

- Analyzing customer data allows hoteliers to understand the preferences and purposes of a customer.
- Customers could then be categorized into market segments.
- This segmentation helps target the right audience for marketing and sales.
- Data analytics in hotels enables you to share relevant promotional information with the right market segment.

Managing Hotel Booking Channels

- Hotels receive bookings from various channels such as online travel agencies (OTA), direct bookings, and website bookings.
- Data analytics in hotels looks at the different mediums to determine the volume of booking received from each channel.
- Hoteliers can use this information to understand which channel yields the most bookings and which channel needs to be worked on.
- This data is important to formulate the right marketing strategy that gives your hotel bookings the right push on all channels.

Inventory Management

- Data Analytics in hotels is useful for inventory management.
- Keep a close track of your supply with data analytics in hotels and identify usage trends as time passes.
- This helps you maintain a balance of inventory – you neither run out of inventory nor have an excess of it at any point.
- Efficient inventory management is also helpful for successfully implementing hotel pricing strategies.

Demand Forecasting

- Analyzing customer behavior patterns and real-time data can help you forecast demand with higher accuracy.
- Demand forecasting analysis is useful for revenue management, inventory management, and implementing dynamic pricing strategies.
- Data Analytics and machine learning help define the optimal room rate in real-time to maximize revenue.

DISADVANTAGES

Losing Customers

Business intelligence tools for hotels give valuable insight into guest behavior. It uses collected data to perform analysis and to determine how your guests think.

This analysis gives you the necessary tools to create guest profiles based on their history, preferences, interests, and such likes.

As a result, any hotel can deliver a personalized experience to its customers and build long-term relationships.

Slow Market Response

This is one of the easiest ways to lose money and guests.

Hotel business intelligence solutions help you study market trends and analyze how it affects your guests' behaviors.

You can even view these reports on a daily basis instead of waiting until the end of the quarter. If market shifts occur unexpectedly, you are better prepared to make quick decisions.

You'll also predict how your customers will react, and make adequate changes to your services.

Addressing these issues will not only boost productivity, but also increase revenue. BI makes this process easier as evident in the examples we'll show below.

CONCLUSION & FUTURE SCOPE

According to us, it has been identified that good and satisfactory service provided by employees will lead to customer satisfaction. In addition to that, it has been observed that when an employee is satisfied with the management of the company, they finally give better services to customers and good customer service is the essence of the Hotel Industry. Loyalty with customers is also linked with the performance of employees. If an employee is greeting well, this customers will increase customer loyalty towards the brand. Satisfaction of employees had an impact on employees' perception about the company.

Making improvements involve working together measuring employee and customer satisfaction. To increase customer satisfaction, the management of Radisson Hotels needs to focus on the satisfaction of employees. To do so, the management needs to implement several programs that will ensure the satisfaction of employees so that efficiency and performance of the organization can be enhanced. The efficiency and performance will increase that will reinforce customer service. The management of the company needs to understand that employee should better understand the Radisson's vision and mission to be aligned with the firm. Radisson can do that by motivating its employees through Rewards and Incentives which in turn will present a chance for advancement.