<Data Visualization(INTB233)> PROJECT REPORT

(6 Semester January-May 2024)

Dashboard(Visualization of British Airways)

Submitted by

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Programme and Section : BTECH(CSE) KMO54

Course Code :INTB233

Under the Guidance of

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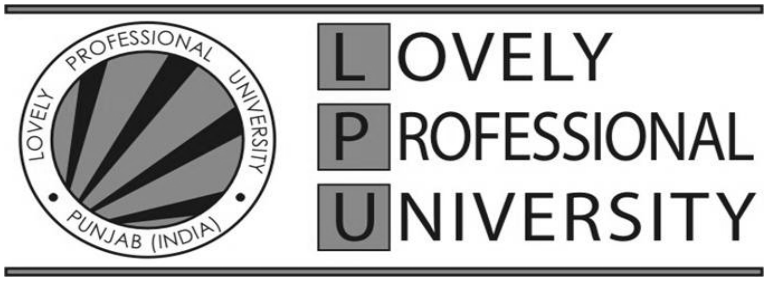
Discipline of CSE/IT

Lovely School of Computer Science and Engineering

Lovely Professional University, Phagwara



DECLARATION

I, Ritik Katoch student of Lovely Professional University (BTECH(CSE)) under CSE/IT Discipline at, Lovely Professional University, Punjab, hereby declare that all the information furnished in this project report is based on my own intensive work and is genuine.

Date: 17/04/2024

Signature

Registration No. 12106091 Ritik Katoch

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to the Mrs.Baljinder Kaur and LPU for their guidance, support, and encouragement throughout the duration of this project. Their expertise and mentorship have been invaluable in shaping the development and execution of this visualization project. I extend my appreciation to my fellow classmates for their collaboration, dedication, and teamwork. Their contributions have enriched the project and facilitated its successful completion.

Thank you to everyone who has played a part in making this project possible.

Table of Content

Introduction

This project aims to visualize and analyze data related to British airways, utilizing techniques of data visualization to extract insights and trends. By employing visual representations such as charts, graphs, and maps, the project endeavors to present complex information in an accessible and comprehensible manner.

Through this endeavor, we seek to explore reviews of airways, shedding light on key patterns, correlations, and anomalies within the data. Additionally, the project aims to demonstrate the significance of data visualization as a powerful tool for communication, decision-making, and understanding complex phenomena.

In this report, we will delve into the methodology employed, the findings discovered, and the implications of the insights gained through the visualization process.

OBJECTIVES

1. **Identify Trends:** Visualize the frequency and distribution of positive and negative reviews over time to identify trends in customer sentiment towards British Airways services.

2. **Segment Analysis:** Segment reviews based on factors such as flight routes, cabin classes, and travel purposes to uncover patterns in customer satisfaction across different segments.

3. **Sentiment Analysis:** Utilize sentiment analysis techniques to visualize the overall sentiment polarity of reviews (positive, negative, neutral) and understand the factors driving positive or negative feedback.

4. **Comparison with Competitors:** Compare British Airways' review metrics with those of its competitors in the airline industry to benchmark performance and identify areas for improvement.

5. **Geographical Analysis:** Visualize the geographical distribution of reviews to understand regional variations in customer satisfaction and identify potential areas for targeted improvements.

6. **Topic Modeling:** Employ topic modeling techniques to identify recurring themes and topics within reviews, allowing for deeper insights into customer concerns and priorities.

7. **Interactive Visualization:** Develop interactive visualizations that allow stakeholders to explore the data dynamically, enabling them to drill down into specific aspects of the reviews for deeper analysis.

8. **Performance Tracking:** Track key performance indicators derived from reviews (e.g., overall rating, customer service satisfaction) over time to monitor trends and assess the effectiveness of initiatives aimed at improving customer experience.

Sources of Dataset

https://www.kaggle.com/

ETL PROCESS

In the ETL process for our project, we start by extracting customer review data from various sources such as online review platforms like Kaggle, customer feedback forms, and social media channels. This data will encompass a wide range of sentiments and opinions regarding British Airways services.

Next, we embark on the transformation phase, where we'll cleanse and preprocess the extracted data to ensure consistency and accuracy. This involves tasks such as removing duplicates, standardizing formats, and categorizing reviews based on factors like flight experience, customer service, and amenities.

Once the data is transformed into a uniform structure, we'll proceed with loading it into our target database or data warehouse. This involves carefully mapping the transformed data to the appropriate tables or schemas, ensuring that it aligns with our analytical requirements.

Throughout the ETL process, we'll implement quality checks and validation procedures to maintain data integrity and reliability. This includes verifying data completeness, accuracy, and consistency at each stage of the pipeline.

By meticulously executing the ETL process, we aim to create a robust foundation for our visualization project, enabling us to uncover actionable insights from the wealth of customer feedback on British Airways services.

Analysis on dataset

1. Introduction:

This analysis aims to explore the sentiment and geographical distribution of British Airways reviews, utilizing data from the "British Airways Reviews" dataset. By examining the characteristics of customer feedback and its correlation with geographic regions, we aim to gain insights into customer satisfaction and identify potential areas for improvement in service delivery.

2. General Description:

   The "British Airways Reviews" dataset consists of 1325 of records representing customer reviews of British Airways services. Each record includes attributes such as review text, rating, flight route, and travel date. The dataset is structured as a CSV file .

3. Specific Requirements, Functions, and Formulas:

   Geographical Mapping: Employed geocoding libraries to map review data to corresponding countries, utilizing the "Countries" dataset for reference.

   Data Aggregation: Calculated aggregate statistics such as average rating and sentiment score by country and flight route.

4. Analysis Results:

   Avg rating:4.2

   Avg Cabin staff service : 3.3

   Avg Ground service: 3.0

   Avg food Beverages: 2.4

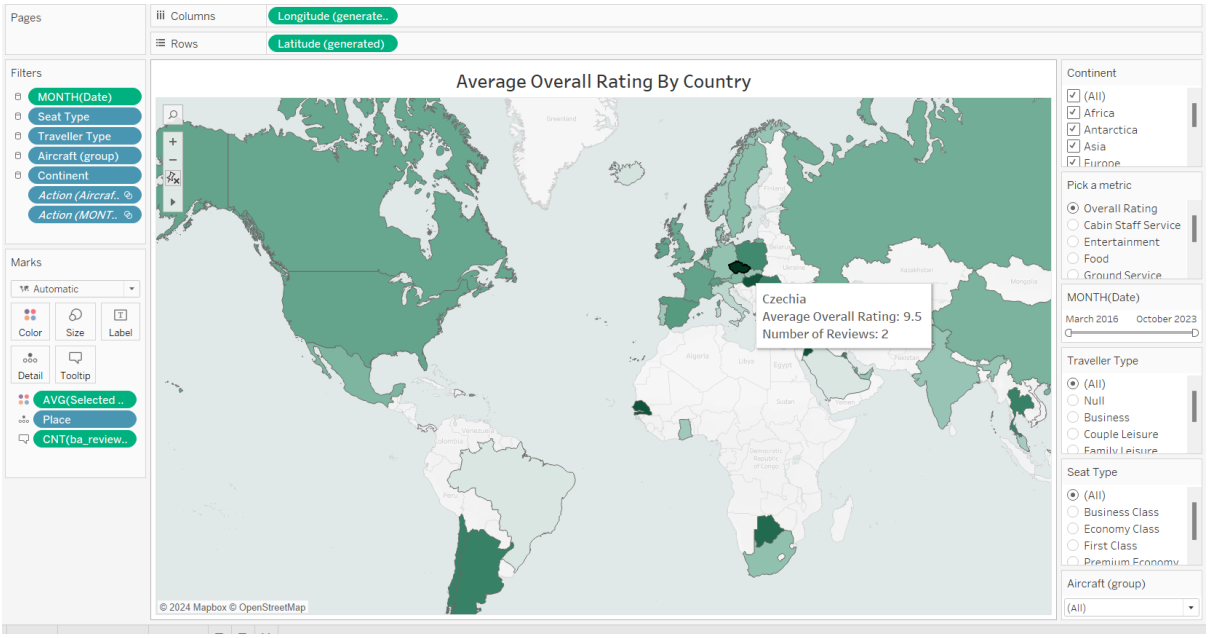
5. Visualization:

   Included average overall rating by month -line chart

   Average overall rating by Country -Maps

   Average Overall rating by aircraft -Bar graph

Results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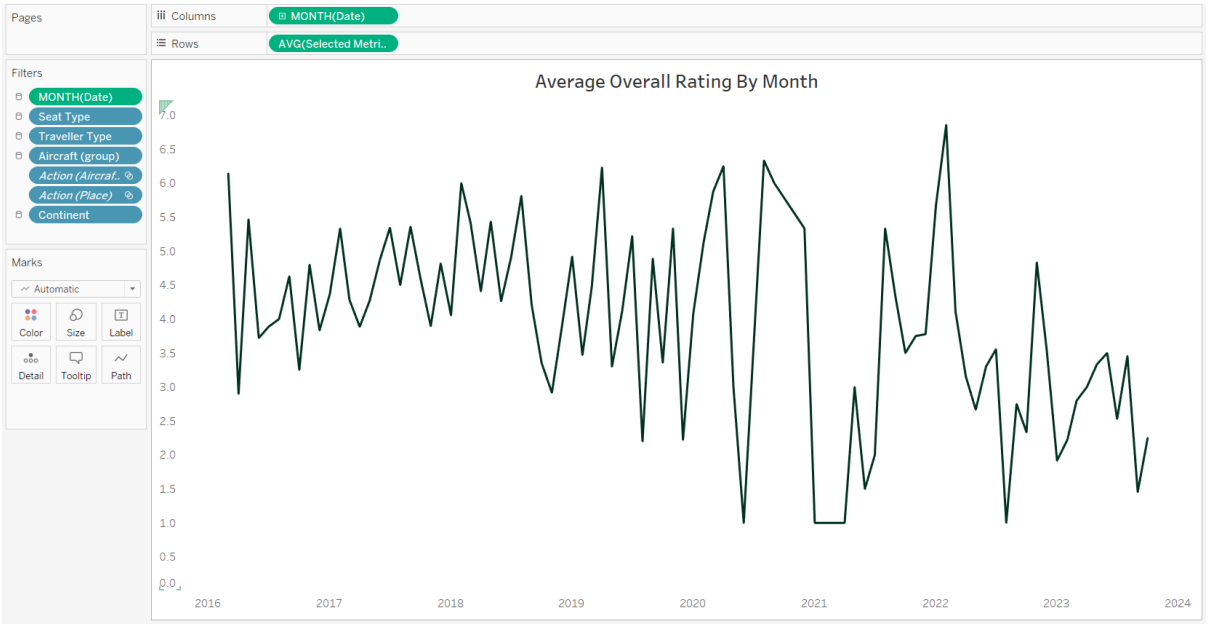
Average Overall Rating By Country
Czechia
Average Overall Rating: 9.5
Number of Reviews: 2
© 2024 Mapbox © OpenStreetMap
Continent
(All)
Africa
Antarctica
Asia
Europe
Pick a metric
Overall Rating
Cabin Staff Service
Entertainment
Food
Ground Service
MONTH(Date)
March 2016
October 2023
Traveller Type
(All)
Null
Business
Couple Leisure
Family Leisure
Seat Type
(All)
Business Class
Economy Class
First Class
Premium Economy
Aircraft (group)
(All)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Average Overall Rating By Month
7.0
6.5
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4.0
3.5
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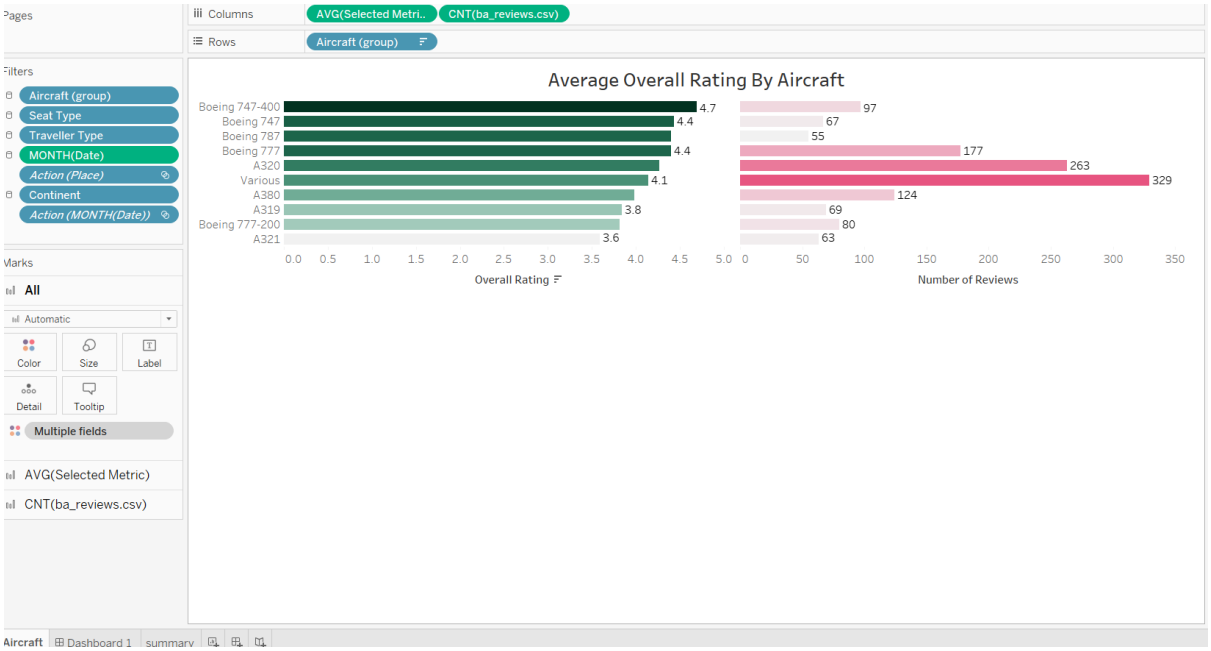
2023
2024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Aircraft (group)
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Traveller Type
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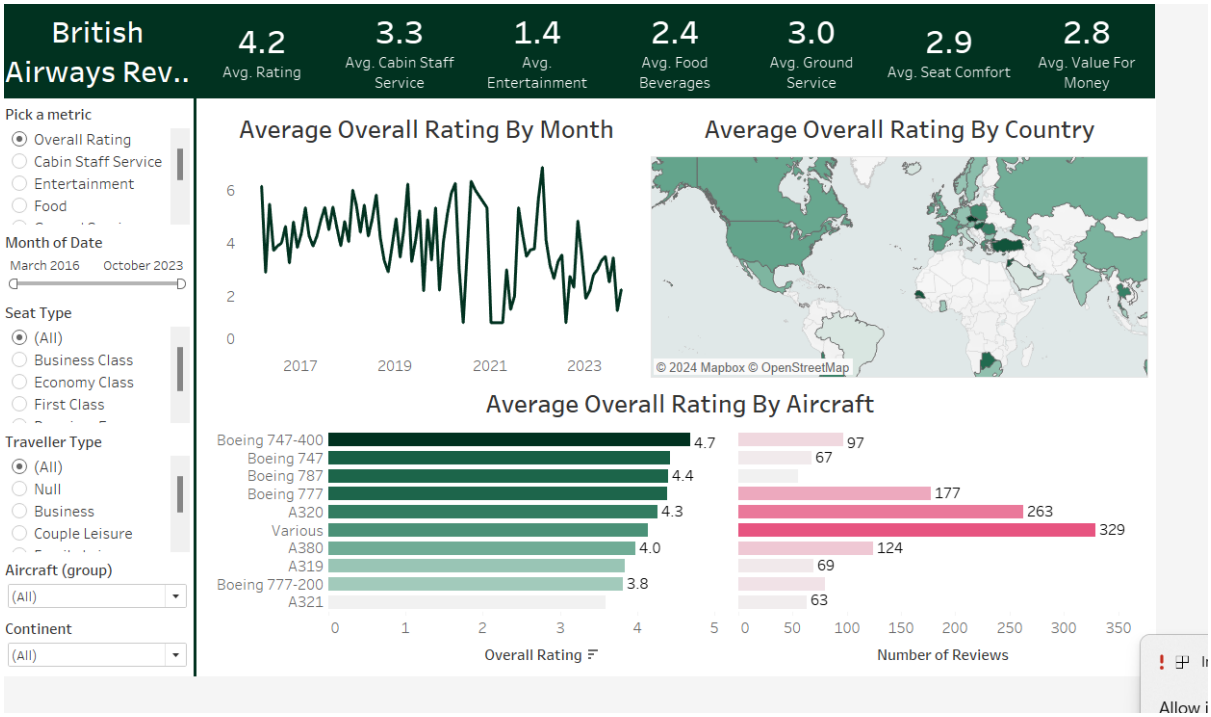
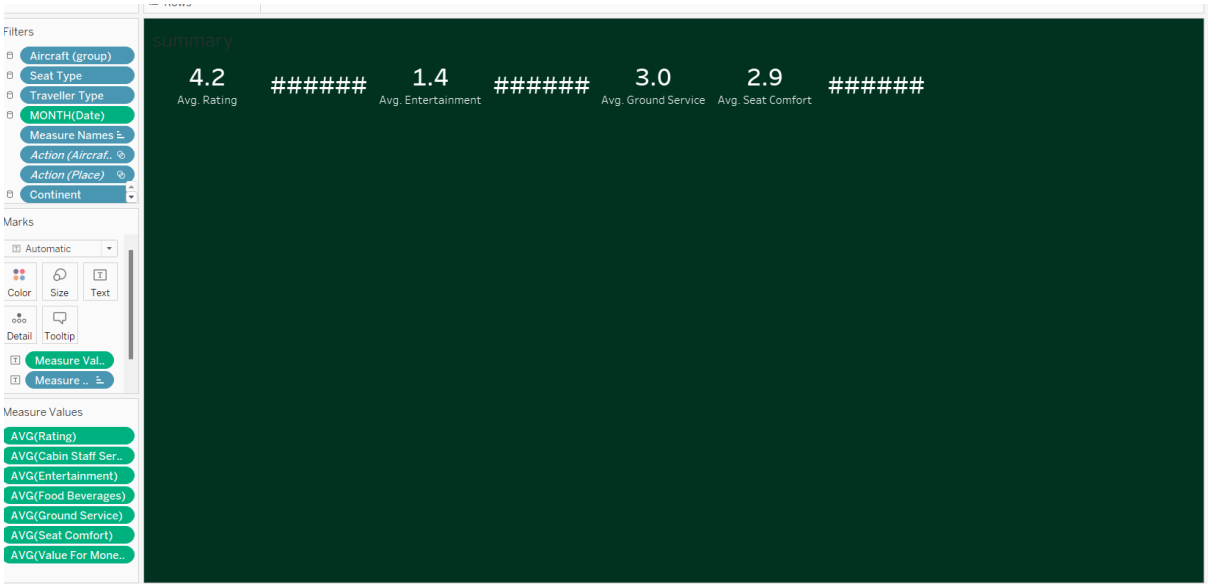
Action (MONTH(Date))
Marks
All
Automatic
Color
Size
Label
Detail
Tooltip
Multiple fields
AVG(Selected Metric)
CNT(ba_reviews.csv)
Average Overall Rating By Aircraft
Boeing 747-400
Boeing 747
Boeing 787
Boeing 777
A320
Various
A380
A319
Boeing 777-200
A321
4.7
4.4
4.4
4.4
4.1
3.8
3.6
97
67
55
177
263
329
124
69
80
63
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0
0 50 100 150 200 250 300 350
Overall Rating
Number of Reviews
Aircraft
Dashboard 1
summary


British Airways Rev..
4.2
Avg. Rating
3.3
Avg. Cabin Staff Service
1.4
Avg. Entertainment
2.4
Avg. Food Beverages
3.0
Avg. Ground Service
2.9
Avg. Seat Comfort
2.8
Avg. Value For Money
Pick a metric
Overall Rating
Cabin Staff Service
Entertainment
Food
Month of Date
March 2016
October 2023
Seat Type
(All)
Business Class
Economy Class
First Class
Traveller Type
(All)
Null
Business
Couple Leisure
Aircraft (group)
(All)
Continent
(All)
Average Overall Rating By Month
6
4
2
0
2017
2019
2021
2023
Average Overall Rating By Country
© 2024 Mapbox © OpenStreetMap
Average Overall Rating By Aircraft
Boeing 747-400
Boeing 747
Boeing 787
Boeing 777
A320
Various
A380
A319
Boeing 777-200
A321
4.7
4.4
4.3
4.0
3.8
97
67
177
263
329
124
69
63
0 1 2 3 4 5
0 50 100 150 200 250 300 350
Overall Rating
Number of Reviews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summary
4.2
Avg. Rating
######
1.4
Avg. Entertainment
######
3.0
Avg. Ground Service
2.9
Avg. Seat Comfort
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