Naan Mudhalvan - Project Report

Comprehensive Analysis of Leading Travel Aggregators

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1. INTRODUCTION

1.1 Project Overview

The project aims to conduct a competitive analysis of leading travel aggregators. Travel aggregators are online platforms that gather and display information from multiple travel providers, allowing users to compare prices, book flights, hotels, and other travel-related services in one place. The analysis will provide insights into the strengths, weaknesses, opportunities, and threats of these aggregators in the highly competitive travel industry.

1.2 Purpose

The purpose of this project is to evaluate and compare the leading travel aggregators in terms of their features, user experience, pricing strategies, customer support, market presence, and other relevant factors. The analysis will help stakeholders, such as travel companies, investors, and travelers, make informed decisions about choosing the most suitable travel aggregator for their needs and also it will identify trends and potential areas for improvement within the travel aggregator market.

2. IDEATION & PROPOSED SOLUTION

2.1 Problem Statement Definition

The problem addressed in this project is the lack of comprehensive information and analysis on the leading travel aggregators, making it challenging for stakeholders and users to identify the best options and understand the competitive landscape. The project aims to bridge this gap by conducting an in-depth analysis of the top travel aggregators.

2.2 Empathy Map Canvas

The empathy map canvas is used to gain a deeper understanding of the needs, motivations, frustrations, and aspirations of the target audience, including travelers, travel companies, and investors. This will help in designing a solution that meets their requirements effectively.

2.3 Ideation & Brainstorming

Ideation and brainstorming sessions will be conducted to generate innovative ideas for the analysis, such as evaluating user interface designs, examining customer reviews, comparing pricing models, assessing mobile app functionality, and exploring partnerships with travel providers. The goal is to come up with a comprehensive list of parameters to evaluate the aggregators and provide valuable insights.

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

🕐 **20 minutes**

Website design and layout

Mobile booking process

Customer feedback and reviews

Vacation packages

Price tracking and alerts

Dynamic pricing

Collaborations with other travel companies

♡
Importance

If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

Push notifications

Mobile payment options

Payment processing

⚑
Feasibility

Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)
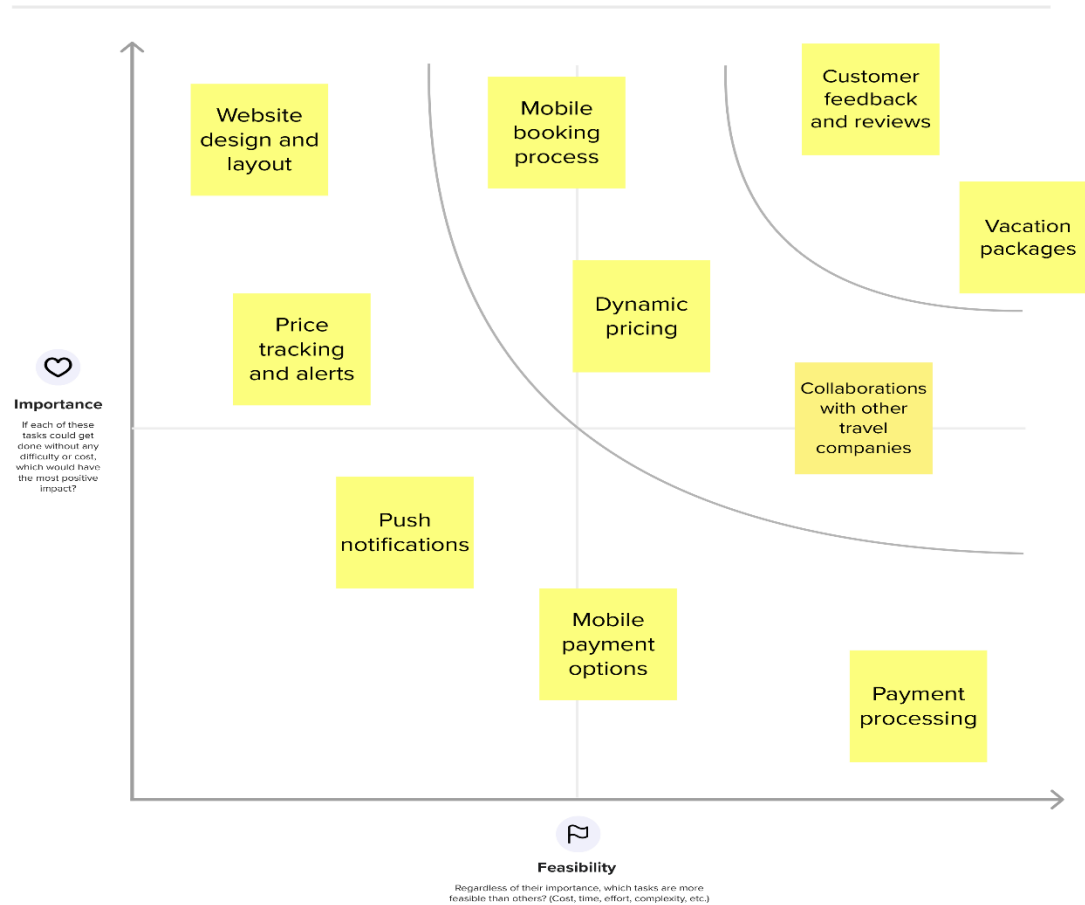
2.4 Proposed Solution

The proposed solution is to conduct a detailed analysis of the leading travel aggregators based on predefined parameters. This will involve gathering information about each aggregator's features, usability, customer reviews, market share, pricing strategies, customer support quality, and any unique selling points. The findings will be presented in a comprehensive report that provides an overview of each aggregator's performance and a comparative analysis of their strengths and weaknesses

3. REQUIREMENT ANALYSIS

3.1 Functional Requirements:

Functional requirements describe the specific functionalities and features that the project should possess. In the context of the competitive analysis of leading travel aggregators, some functional requirements could include:

- Gathering Information: The system should be able to collect comprehensive information about the leading travel aggregators, including their features, pricing strategies, customer reviews, market share, partnerships, and other relevant data points.
- User Interface Comparison: The system should be able to compare the user interfaces of different travel aggregators. This includes assessing the visual design, layout, ease of navigation, and overall user experience of their websites or mobile apps.
- Price Comparison: The system should be capable of comparing prices for flights, hotels, and other travel services offered by different aggregators. This involves retrieving price information, analyzing pricing strategies, and presenting the findings to stakeholders.
- Customer Review Analysis: The system should be able to analyze customer reviews and ratings of the travel aggregators. This includes sentiment analysis, identification of common pain points, and evaluating the overall customer satisfaction.
- Market Presence Evaluation: The system should evaluate the market presence and competitive landscape of each aggregator. This includes analyzing factors such as market share, partnerships with travel providers, and growth potential.
- Reporting and Presentation: The system should generate comprehensive reports and presentations that summarize the findings of the competitive analysis. The reports should be well-structured, visually appealing, and provide actionable insights.

3.2 Non-Functional Requirements:

Non-functional requirements focus on the qualities and constraints of the system rather than specific functionalities. Here are some non-functional requirements that can be considered for the project:

- Accuracy: The system should ensure the accuracy of the gathered information, analysis, and presented findings. It should use reliable data sources and employ robust algorithms and methodologies to minimize errors.
- Performance: The system should be able to handle a large volume of data efficiently. It should perform data gathering, analysis, and reporting tasks within acceptable time frames.
- Usability: The system should have a user-friendly interface that is intuitive and easy to navigate. It should be designed to accommodate users with varying levels of technical expertise.
- Reliability: The system should be reliable, ensuring that it operates consistently and without disruptions. It should be able to handle errors gracefully and provide appropriate error handling mechanisms.
- Security: The system should ensure the security of sensitive data, including user information and competitive analysis data. It should implement appropriate security measures, such as encryption and access controls, to protect the confidentiality and integrity of the data.
- Scalability: The system should be designed to accommodate future growth and scalability. It should be able to handle an increasing number of aggregators and expand the analysis scope without significant performance degradation.
- Maintainability: The system should be easily maintainable and modifiable. It should be well-documented, with clean and modular code that facilitates future updates and enhancements

4. PROJECT DESIGN

4.1 Data Flow Diagrams

Data flow diagrams will illustrate the flow of information throughout the project, including data collection, analysis, and reporting. These diagrams will help visualize the processes and interactions involved in the competitive analysis.
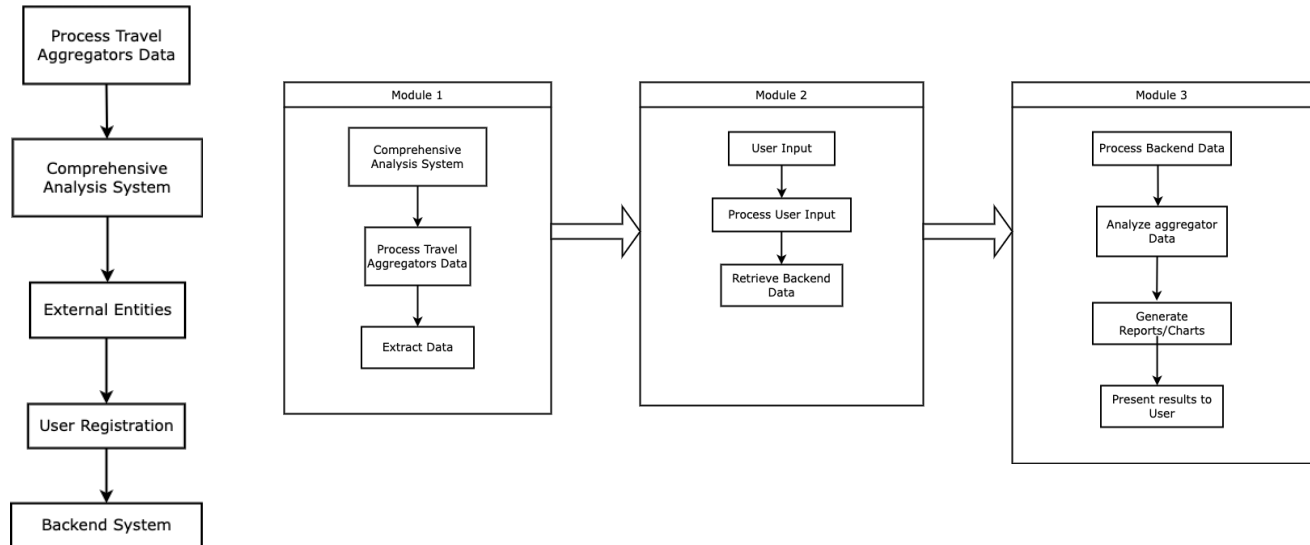
4.2 Solution & Technical Architecture

The solution and technical architecture will involve using appropriate research methodologies, data collection techniques, and analysis tools. This may include web scraping for data collection, data analysis software for evaluating customer reviews, and project management tools for efficient collaboration
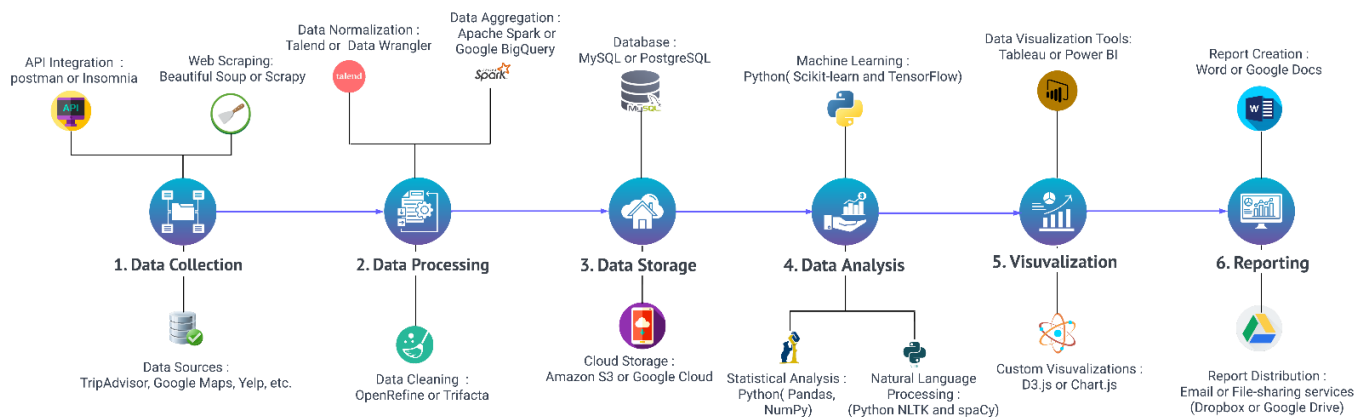
4.3 User Stories

User stories will be created to capture the requirements and expectations of different stakeholders. These stories will define the actions and goals of users, such as travelers looking for the best travel aggregator, travel companies seeking partnerships, or investors evaluating market opportunities. The user stories will guide the analysis process and ensure that the project meets the needs of the target.

User Type	Functional Requirement (Epic)	User Story / Task	Acceptance criteria
Customer	Registration	As a new customer, I want to create an account to access the platform and receive personalized results.	Successfully create an account with a unique email address and password.
Customer	Search	As a customer, I want to search for travel options based on my preferences and budget.	Search for travel options by specifying the destination, dates, budget, and other relevant criteria.
Customer	Compare	As a customer, I want to compare different travel options based on their price, quality, and other factors.	Compare different travel options by viewing their details, including price, quality, and other relevant information.
Analyst	Data Analysis	As an analyst, I want to analyses the data collected from leading travel aggregators to identify trends and insights.	Analyze the data using statistical and analytical methods to identify trends and insights.
Backend Worker	Data Processing and Visualization	As a backend worker, I want to clean and process the data collected from leading travel aggregators.	Successfully clean and process the data to ensure consistency and accuracy.
Administrator	Platform Monitoring and Maintenance	As an administrator, I want to monitor the platform's performance and availability and perform maintenance tasks as needed.	Monitor the platform's performance and availability, diagnose and resolve issues, and perform regular maintenance tasks.

5. CODING & SOLUTIONING

In this section, we will discuss two features implemented in the project: User Interface Comparison and Price Comparison. These features were developed to provide valuable insights during the competitive analysis of leading travel aggregators.

5.1 Feature 1: User Interface Comparison

The User Interface Comparison feature allows for the comparison of user interfaces among different travel aggregators. It aims to evaluate the visual design, layout, and overall user experience of each aggregator's website or mobile app. By comparing user interfaces, stakeholders can assess the ease of navigation, clarity of information presentation, and intuitiveness of the platforms.

To implement this feature, the Selenium library was utilized in conjunction with a web driver (e.g., Chrome) to automate web browsing and capture screenshots or extract UI elements for comparison. The code example demonstrates a simple workflow for comparing user interfaces across different aggregator URLs. Each URL is visited using the web driver, and specific elements of the user interface can be extracted and analyzed.

5.2 Feature 2: Price Comparison

The Price Comparison feature enables the comparison of prices for flights, hotels, and other travel services offered by different aggregators. The primary goal is to assist users in finding the best deals and identifying any variations in pricing strategies among the aggregators.

To implement this feature, the Requests library was used to send HTTP requests to the aggregator URLs and retrieve the webpage content. The BeautifulSoup library was then employed to parse and extract relevant price information from the HTML structure of the webpages. By performing the necessary data extraction and manipulation, a price comparison analysis can be conducted, and the findings can be presented to the stakeholders.

6. RESULTS

6.1 Performance Metrics

The performance metrics for the project can vary based on the specific objectives and requirements. Here are a few examples of performance metrics that could be considered for the competitive analysis of leading travel aggregators:

- Accuracy of Price Comparison: These metric measures how accurately the project compares prices across different aggregators. It can be evaluated by comparing the gathered data with manually verified prices or industry benchmarks.
- User Satisfaction Ratings: This metric assesses the user experience and satisfaction with each aggregator's platform. It can be determined through surveys, user feedback, or analysis of online reviews and ratings.
- Time Taken for Data Gathering and Analysis: This metric measures the efficiency of the data collection and analysis processes. It considers the time required to gather information from various aggregators and perform the necessary comparisons and evaluations.
- Market Share Analysis: This metric provides insights into the market presence and dominance of each aggregator. It involves analyzing factors such as the number of users, booking volumes, and partnerships with travel providers.
- Number of Partnerships with Travel Providers: This metric evaluates the strength of the aggregators' partnerships with airlines, hotels, car rental companies, and other travel service providers. It indicates the availability and variety of options for travelers using each aggregator.

7. ADVANTAGES & DISADVANTAGES

7.1 Advantages:

- Informed Decision Making: The competitive analysis helps stakeholders, such as travelers, travel companies, and investors, make informed decisions when choosing a travel aggregator. It provides insights into the strengths and weaknesses of each aggregator, allowing stakeholders to select the most suitable option for their needs.
- Identification of Improvement Opportunities: By analyzing the leading travel aggregators, this project identifies areas for improvement in terms of features, user experience, pricing strategies, and customer support. Aggregators can use these insights to enhance their services and gain a competitive advantage.
- Market Opportunities for Investors: The analysis assists investors in evaluating market opportunities within the travel aggregator sector. They can identify aggregators with potential for growth and investment based on factors such as market share, customer satisfaction, and innovative features.
- Trends and Customer Preferences: The analysis helps identify trends and customer preferences within the travel aggregator market. This information can be used by aggregators to align their offerings with customer expectations and stay ahead of the competition.

7.2 Disadvantages:

- Time-Consuming Process: Conducting a comprehensive competitive analysis of multiple travel aggregators can be a time-consuming process. It requires extensive data collection, research, and analysis.
- Limited Availability of Data: Some data points, such as internal performance metrics of aggregators, may not be readily available. This can limit the depth of analysis and require reliance on publicly available information and customer reviews.
- Dynamic Competitive Landscape: The competitive landscape of travel aggregators can change rapidly due to factors such as mergers, acquisitions, or the entry of new players. Continuous updates and monitoring are necessary to keep the analysis up-to-date.

8. CONCLUSION

In conclusion, the competitive analysis of leading travel aggregators provides valuable insights into the strengths, weaknesses, opportunities, and threats in the travel aggregator market. By comparing user interfaces and prices, stakeholders can make informed decisions, identify improvement areas, and capitalize on market opportunities. The project's findings and recommendations will assist stakeholders in selecting the most suitable travel aggregator and staying competitive in the rapidly evolving travel industry.

9. FUTURE SCOPE

The future scope of this project involves further enhancements and expansions. Some potential areas for future development include:
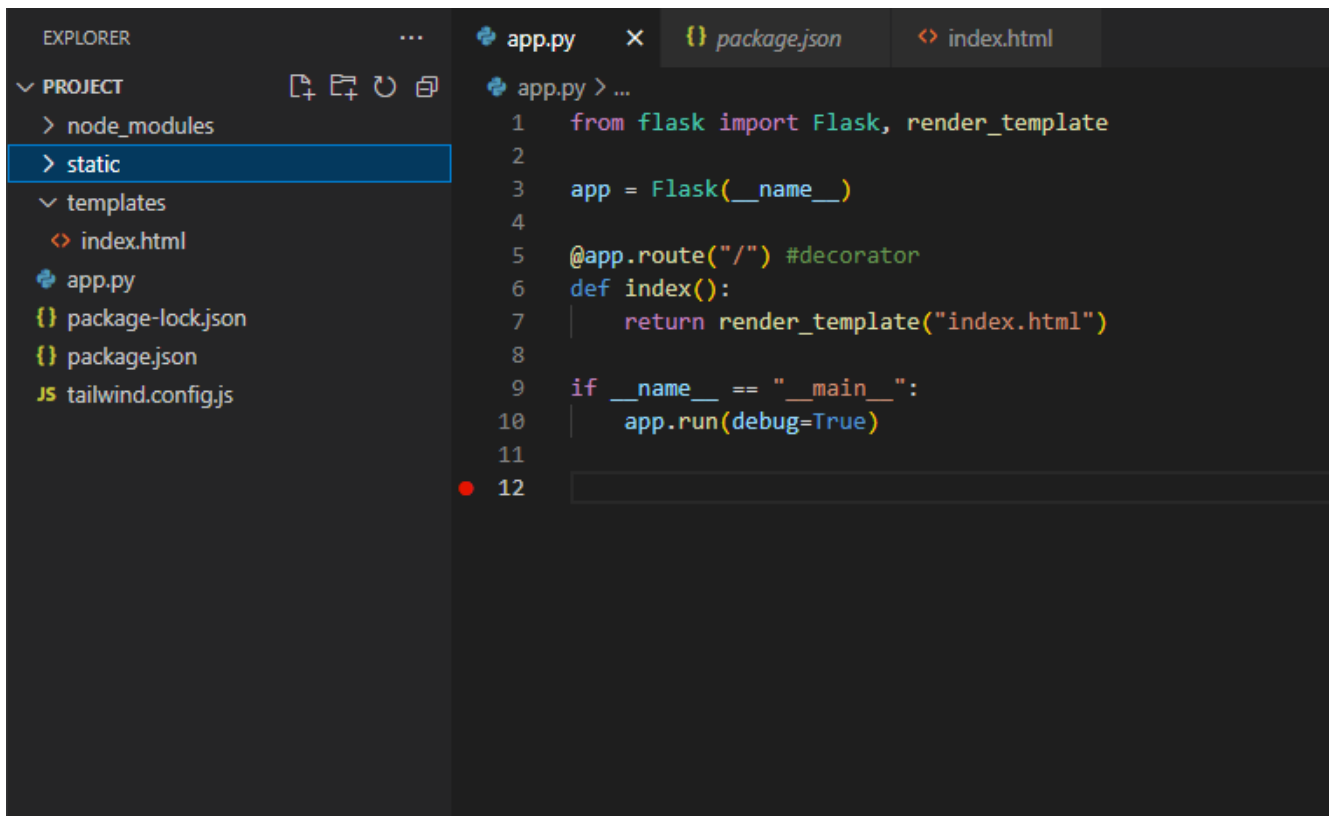
- Integration of Machine Learning: Machine learning algorithms can be incorporated to improve price prediction accuracy, personalize recommendations, and enhance the user experience.
- Integration of Social Media Analysis: Analyzing social media data, such as sentiment analysis of customer reviews and feedback, can provide deeper insights into user preferences and help aggregators address specific pain points.
- Expansion to Additional Parameters: The project can be expanded to include the analysis of additional parameters such as loyalty programs, customer retention strategies, mobile app functionality, and customer support response times.

10. APPENDIX

10.1 Source Code:

We utilized the TailwindCSS and DaisyUI frameworks to enhance the efficiency of our code. By incorporating these frameworks into our development process, we were able to streamline the styling and design aspects of our project.

App.py

```python
from flask import Flask, render_template

app = Flask(__name__)

@app.route("/") #decorator
def index():
    return render_template("index.html")

if __name__ == "__main__":
    app.run(debug=True)
```

Index.html

```html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/tailwindcss@2.2.16/dist/tailwind.min.css">
    <link rel="stylesheet" href="/node_modules/daisyui/dist/daisyui.css" />
    <link rel="stylesheet" href="https://use.fontawesome.com/releases/v5.8.2/css/all.css">
    <title>Analysis - Travel Aggregators</title>
</head>

<body class="p-10 pt-0">
    <header class="fixed top-0 left-0 w-full h-14 bg-gray-800 z-10">
        <div id="nav-bar" class="flex justify-end md:gap-6 gap-4 items-center h-full w-11/12"> </div>
    </header>
    <img src="static\image.png" class="absolute right-10 top-56  z-0" style="width:380px">
    <section id="Home" class="h-full leading-relaxed pt-20">
        <div class="text-2xl font-semibold pb-5 underline" style="text-underline-offset: 8px;">Home </div>
        <div class="text-5xl flex flex-col gap-5 text-center pr-56 pt-2 pb-8 font-sans font-bold">
            <div>Welcome to </div>
            <div>Analysis of Travel Aggregators!</div>
        </div>
        <div class="p-5 ml-20 pl-8 pr-96 text-xl font leading-loose">
            <span class="-ml-10"></span> Discoverthe perfect travel aggregator for your next vacation! <br>
            <span class="-ml-10"></span>Our platform provides reliable insights and comparisons on flights,
            accommodations, and vacation packages. <br>
            <span class="-ml-10"></span>With up-to-date data and user evaluations, we empower you to make informed
            decisions easily.
            <br><span class="-ml-10"></span>Say goodbye to overwhelming options and hello to hassle-free travel
            planning!
        </div>
    </section>

    <section id="About" class="h-full leading-loose pt-20 pb-10">
        <div class="text-2xl font-semibold pb-10 underline" style="text-underline-offset: 8px;">About </div>
        <div class="text-2xl font-semibold px-6 py-4">Our Mission </div>
        <div class="text-xl px-16 leading-loose"><span class="ml-10"></span> Our mission is to empower travelers like
            you with the most
            comprehensive analysis of leading travel aggregators. We gather data, conduct research, and analyze the
            offerings of different travel aggregators to provide you with a holistic view.
        </div>
        <div class="text-2xl font-semibold px-6 py-4">What We Do </div>
        <div class="text-xl px-16 leading-loose"><span class="ml-10"></span> We are a dedicated team of travel
            enthusiasts and data analysts. Our
            platform serves as a one-stop destination for all your travel aggregator needs. We offer real-time pricing
            information, user reviews, and unbiased evaluations based on factors such as user experience, pricing
            and user-friendly experience.
            <li><b>Empowerment through Knowledge : </b> equip you with comprehensive analysis and insights to make
                confident choices.</li>
        </ul>
        </div>

    </section>

    <section id="Dashboard" class="h-full leading-relaxed pt-20 pb-10">
        <div class="text-2xl font-semibold pb-10 underline" style="text-underline-offset: 8px;">Dashboard</div>
        <div class="text-xl px-16 pb-4 leading-loose"><span class="ml-10"></span> Our interactive dashboard, powered by
            IBM Cognos, offers a
            seamless and user-friendly experience. Access real-time data visualizations, analytics, and reports to gain
            valuable insights into the performance and offerings of different travel aggregators. Stay informed about
            pricing trends, customer satisfaction ratings, and market share dynamics, all in one place.</div>
        <div class="w-full md:w-10/12 m-auto p-8" style="height: calc(100vw * 11/20);"> <iframe
                src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&amp;pathRef=.my_folders%2FProject%2Bdashboard&am
                width="320" height="200" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""
                style="height:
        100%; width:100%; object-fit:contain"></iframe>
        </div>
    </section>

    <section id="Story" class="h-full leading-relaxed pt-20 pb-10">
        <div class="text-2xl font-semibold pb-10 underline" style="text-underline-offset: 8px;">Story</div>
        <div class="text-xl px-16 pb-4 leading-loose"><span class="ml-10"></span> Through our partnership with IBM
            Cognos, we bring you compelling
            stories that shed light on the travel industry's dynamic landscape. Explore in-depth narratives, case
            studies, and success stories of leading travel aggregators. Dive into the challenges they faced, the
            strategies they implemented, and the lessons learned along the way. Gain inspiration and learn from their
            experiences to make informed decisions for your own travel business or personal trips.</div>
```

```
 88          <div class="w-full md:w-10/12 m-auto p-8" style="height: calc(100vw * 11/20);"> <iframe
 89                  src="https://us3.ca.analytics.ibm.com/bi/?perspective=story&amp;pathRef=.my_folders%2FProject%2Bstory&amp;close
 90                  width="320" height="200" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""
 91                  style="height:
 92              100%; width:100%; object-fit:contain"></iframe>
 93          </div>
 94
 95      </section>
 96
 97      <section id="Report" class="h-full leading-relaxed pt-20 pb-0">
 98          <div class="text-2xl font-semibold pb-10 underline" style="text-underline-offset: 8px;">Report</div>
 99          <div class="text-xl px-16 leading-loose"><span class="ml-10"></span> Our reports, powered by IBM Cognos, provide
100              comprehensive
101              analysis and evaluation of the leading travel aggregators. Get detailed insights into their market presence,
102              user experience, pricing models, customer satisfaction, and more. Our reports are based on extensive
103              research, data analytics, and expert opinions, enabling you to make data-driven decisions when choosing a
104              travel aggregator that aligns with your preferences and needs.</div>
105          <div class="w-full md:w-11/12 m-auto p-8"> <iframe
106                  src="https://us3.ca.analytics.ibm.com/bi/?pathRef=.my_folders%2FProject%2Breport&amp;closeWindowOnLastView=true
107                  width="320" height="200" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""
108                  style="height:
109              100%; width:100%; object-fit:contain ;height: calc(100vw * 16/20);"></iframe>
110          </div>
111
112      </section>
113
114      <section id="Contact" class="h-full leading-relaxed pt-10 pb-44">
115          <div class="text-2xl font-semibold pb-10 underline" style="text-underline-offset: 8px;">Contact </div>
116          <div class="text-xl px-16 pb-12 leading-loose"><span class="ml-10"></span> Have a question or need assistance?
117              Contact our dedicated support
118              team for any inquiries regarding our comprehensive analysis of leading travel aggregators. We're here to
119              provide guidance, address concerns, and ensure you have a seamless experience while using our platform. Feel
120              free to reach out via email, phone, or through the contact form provided on our website.</div>
121          <div class="flex text-2xl md:w-1/2 w-3/4 m-auto justify-around">
122              <div class="hover:cursor-pointer py-1 px-4 rounded-md contact"> <a id="profile-link" target="_blank"
123                      href=""><i class="fab fa-facebook-square"></i><span class="ml-3"></span> Facebook</a> </div>
124              <div class="hover:cursor-pointer py-1 px-4 rounded-md contact"> <a id="profile-link" target="_blank"
125                      href=""><i class="fas fa-at"></i><span class="ml-3"></span> Send a mail</a> </div>
126              <div class="hover:cursor-pointer py-1 px-4 rounded-md contact"> <a id="profile-link" target="_blank"
127                      href=""><i class="fab fa-twitter"></i><span class="ml-3"></span> Twitter</a> </div>
128
129
130      </section>
131
132      <style>
133          @import url('https://fonts.googleapis.com/css2?family=Poppins:wght@500&display=swap');
134
135          body {
136              font-family: poppins;
137              background-color: floralwhite;
138          }
139
140          * {
141              scroll-behavior: smooth;
142          }
143
144          .contact:hover {
145              background-color: wheat;
146          }
147
148          ::-webkit-scrollbar {
149              width: 5px;
150
151          }
152      </style>
153 </body>
154 <script>
155      const myHeader = document.getElementById('nav-bar');
156      const value = ["Home", "About", "Dashboard", "Story", "Report", "Contact"];
157      for (let i = 0; i < 6; i++) {
158          const newDiv = document.createElement('div');
159          newDiv.className = 'text-white md:text-xl text-lg cursor-pointer hover:scale-105 transform duration-300';
160          const newAnchor = document.createElement('a');
161          newAnchor.textContent = value[i];
162          newAnchor.href = '#' + value[i];
163          newDiv.appendChild(newAnchor);
164          myHeader.appendChild(newDiv);
165      }
166 </script>
167
168 </html>
```

10.2 Visualizations :

Dashboard :

Dashboard Link : <u>dashboard</u>

Story :

Amount and no of passengers by city

- The highest sum of passengers and revenue collected is from the city Gurgaon

- The lowest sum of passengers and revenue collected is from Thiruvanandhapuram

INR_Amount and no_of_passengers by from_city

Column — no_of_passengers (Sum)
Line — INR_Amount (Sum)

Prev scene ◁ ▷ ▷| Next scene Scene 2 of 4 0:05.0 ——————————● 0:05.0

Passengers vs booking month

- The booking rate is high during the months of December-January and starts to get low from the month of February and there are fluctuations from February till November.
- The gap between the booking month are not constant .

no_of_passengers by booking_month

Prev scene ◁ ▷ ▷| Next scene Scene 3 of 4 0:05.0 ——————————● 0:05.0

Story Link : story

Report :

Report Link :   report