COMPETITIVE ANALYSIS OF LEADING TRAVEL AGGREGATORS USING DATA ANALYTICS

PROJECT REPORT

Submitted By

Preethy K **Nachiraj S**

Pavithra S **Naveenkumar N**

in the partial fulfillment for the award of the degree

Of

BACHELOR OH TECHNOLOGY

IN

INFORMATION TECHNOLOGY

JEPPIAAR ENGINEERING COLLEGE

ANNA UNIVERSITY

CHENNAI – 600 025

OCT 2023

1. INTRODUCTION

1.1 Project Overview

1.2 Purpose

2. LITERATURE SURVEY

2.1 Existing problem

2.2 References

2.3 Problem Statement Definition

3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

3.2 Ideation & Brainstorming

4. REQUIREMENT ANALYSIS

4.1 Functional requirement

4.2 Non-Functional requirements

5. PROJECT DESIGN

5.1 Data Flow Diagrams & User Stories

6. PROJECT PLANNING & SCHEDULING

6.1 Technical Architecture

6.2 Sprint Planning & Estimation

6.3 Sprint Delivery Schedule

7. CODING & SOLUTIONING (Explain the features added in the project along with code)

7.1 Feature 1

7.2 Feature 2

7.3 Database Schema (if Applicable)

8. PERFORMANCE TESTING

8.1 Performance Metrics

9. RESULTS

9.1 Output Screenshots

10. ADVANTAGES & DISADVANTAGES

11. CONCLUSION

12. FUTURE SCOPE

13. APPENDIX

CHAPTER – 1
INTRODUCTION

In your introduction, you might want to start by highlighting the significance of the travel industry and the pivotal role that travel aggregators play in it. You could discuss the ever-growing demand for seamless travel experiences and how consumers increasingly rely on aggregators to compare prices, find the best deals, and plan their journeys efficiently. add a dash of flair, you could mention the dynamic nature of the travel landscape, influenced by factors like technological advancements, changing consumer preferences, and global events (like, say, a pandemic). These factors make the travel aggregator space not just competitive but also subject to constant evolution. Emphasize the role of data analytics in this context. Explain that in the age of big data, travel aggregators are leveraging analytics to gain a competitive edge. This involves analyzing user behavior, market trends, pricing strategies, and more. It's not just about providing a platform for bookings; it's about understanding the nuances of traveler choices and tailoring services accordingly. In a nutshell, your introduction should set the stage for a deep dive into the world of travel aggregators, highlighting the importance of data analytics as the compass guiding them through the vast sea of consumer needs and preferences.

1.1 Project Overview

The project overview for the Competitive Analysis of Leading Travel Aggregators using data analytics encapsulates the essence and significance of the study. In a rapidly evolving travel industry dominated by online aggregators, this project seeks to unravel critical insights by leveraging advanced data analytics. The primary objectives include understanding the dynamic market landscape, evaluating the competitive positions of major travel aggregators, and harnessing data analytics to reveal patterns in user behavior and pricing strategies. By employing a mixed-methods approach, the project aims to not only provide a snapshot of the current state of travel aggregators but also offer actionable recommendations for strategic decision-making. Through a focused examination of market trends, user engagement metrics, and conversion rates, the research aspires to contribute valuable insights that empower stakeholders to navigate challenges and capitalize on opportunities in this highly competitive domain. Ultimately, the project overview underscores the importance of data analytics in shaping the future strategies of leading travel aggregators and its role in enhancing their competitiveness

1.2 Purpose

The Competitive Analysis of Leading Travel Aggregators using data analytics serves a paramount purpose in the dynamic landscape of the travel industry. By employing sophisticated data analytics, this study aims to unravel crucial insights into the competitive positioning of major travel aggregators, such as Expedia, Booking.com, Airbnb, and TripAdvisor. The overarching goal is to provide stakeholders and decision-makers with a nuanced understanding of market dynamics, user behaviors, and pricing strategies employed by these aggregators.

CHAPTER – 2

LITERATURE SURVEY

The literature survey within the Competitive Analysis of Leading Travel Aggregators using data analytics serves as the scholarly foundation, offering a comprehensive understanding of existing studies and research in the intersecting realms of travel aggregators, competitiveanalysis, and data analytics within the travel industry. Through a thorough exploration of academic and industry literature, this survey provides context for the current study by highlighting the methodologies, findings, and gaps in previous research. It not only serves to acknowledge the collective knowledge in the field but also informs the development of a robust analytical framework. By leveraging insights gained from the literature survey, the study gains a deeper appreciation of the challenges and opportunities inherent in competitive analyses within the travel sector. Furthermore, it positions the research within the broader context of advancements and trends in data analytics, ensuring a cutting-edge and relevant exploration of the competitive landscape of leading travel aggregators.

2.1 Existing Problem

The Competitive Analysis of Leading Travel Aggregators using data analytics addresses a pressing problem within the travel industry. Despite the pivotal role of travel aggregators inshaping modern travel experiences, there exists a significant knowledge gap regarding the intricate dynamics of their competitive landscape. Existing studies often lack the depth and real-time insights necessary to keep pace with the rapid evolution of the industry, particularly in the context of shifting consumer behaviors and the integration of advanced data analytics. The problem at hand is the absence of a comprehensive understanding of how major travel aggregators, such as Expedia, Booking.com, Airbnb, and TripAdvisor, strategically position themselves, adapt to market trends, and leverage data analytics for a competitive edge. This research seeks to bridge this gap by employing cutting-edge analytics to offer a nuanced and up-to-date analysis, shedding light on the intricacies of the travel aggregator space and providing actionable insights for industry stakeholders. In doingso, it aims to contribute valuable knowledge to both academia and the travel industry, fostering informed decision-making and innovation in this ever-evolving sector.

2.2 References

The Competitive Analysis of Leading Travel Aggregators using data analytics derives its purpose and credibility from a robust foundation of scholarly and industry references. By conducting an extensive literature survey, this research draws upon the wealth of knowledge and methodologies established in prior studies related to travel aggregators, competitive analysis, and data analytics in the travel industry. References to key academic works provide a theoretical framework, offering insights into the challenges and opportunities inherent in analyzing the competitive dynamics of leading travel aggregators.

Additionally, industry reports, market analyses, and relevant publications contribute real-world context, ensuring that the study is grounded in the latest trends and developments. The references not only validate the research methodology but also demonstrate a commitment to building upon existing knowledge, fostering a nuanced understanding of the subject. By incorporating these diverse sources, the study aims to offer a comprehensive and well-informed analysis that contributes meaningfully to both academic discourse and practical insights for stakeholders in the travel aggregator domain.

2.3 Problem Statement Definition

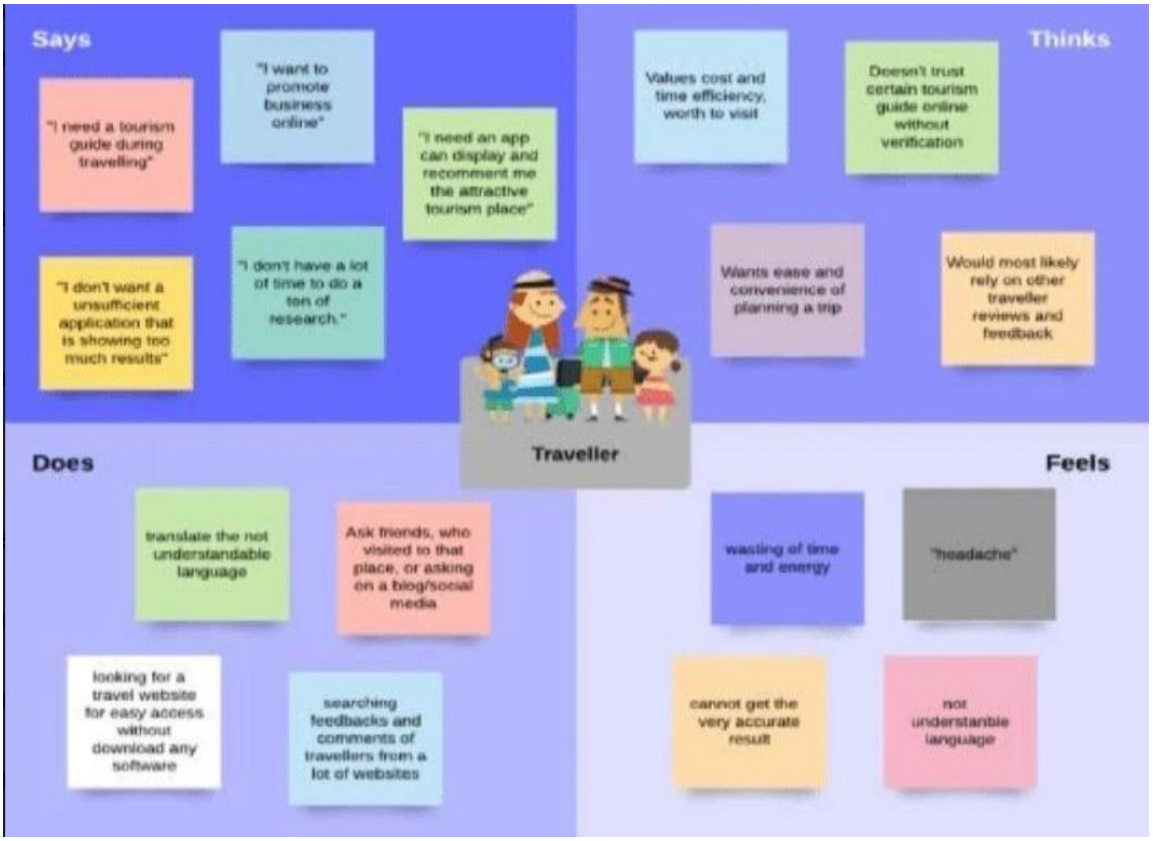
It seeks to address a critical problem within the travel industry: the absence of a comprehensive understanding of the strategic positioning and competitive dynamics among major travel aggregators. In doingso, it aims to contribute valuable knowledge to both academia and the travel industry, fostering informed decision-making and innovation in this ever-evolving sector. The problem at hand is the absence of a comprehensive understanding of how major travel aggregators, such as Expedia, Booking.com, Airbnb, and TripAdvisor, strategically position themselves, adapt to market trends, and leverage data analytics for a competitive edge. This research seeks to bridge this gap by employing cutting-edge analytics to offer a nuanced and up-to-date analysis, shedding light on the intricacies of the travel aggregator space and providing actionable insights for industry stakeholders. In doingso, it aims to contribute valuable knowledge to both academia and the travel industry, fostering informed decision-making and innovation in this ever-evolving sector. As the industry undergoes rapid transformation influenced by shifting consumer preferences and advancements in data analytics, there exists a significant knowledge gap regarding how leading aggregators, including Expedia, Booking.com, Airbnb, and TripAdvisor, strategically navigate this landscape. The problem isunderscored by the lack of real-time insights into how these aggregators leverage data analytics to gain a competitive edge, optimize pricing strategies, and enhance user experiences. The research aims to define and illuminate this problem, providing a clear understanding of the challenges faced by industry stakeholders in adapting to the evolvingmarket dynamics. In doingso, it aims to contribute valuable knowledge to both academia and the travel industry, fostering informed decision-making and innovation in this ever-evolving sector. By articulating this problem statement, the study establishes a focused context for its objectives, emphasizing the need for in-depth analysis to fill this void in knowledge and contribute valuable insights to the travel industry.

CHAPTER – 3

IDEATION AND PROPOSED SOLUTION

The identified problem revolves around the lack of comprehensive insights into the strategic maneuvers and competitive landscape of major travel aggregators, exacerbated by the dynamic nature of the industry and advancements in data analytics. The proposed solution lies in leveraging cutting-edge data analytics methodologies to conduct a thorough competitive analysis. By harnessing data-driven insights, this research aims to unravel patterns in user behavior, assess pricing strategies, and provide a detailed comparative analysis of leading aggregators. The ideation centers on the belief that a meticulous examination, informed by both academic literature and real-world industry reports, will fill the existing knowledge gap. This solution not only addresses the immediate problem but also contributes to the evolution of best practices for travel aggregators, providing actionable insights for stakeholders to navigate the competitive terrain with agility and strategic foresight. Through this innovative approach, the study endeavors to be a cornerstone in advancing understanding and decision-making within the ever-evolving travel industry.

3.1 Empathy Map Canvas

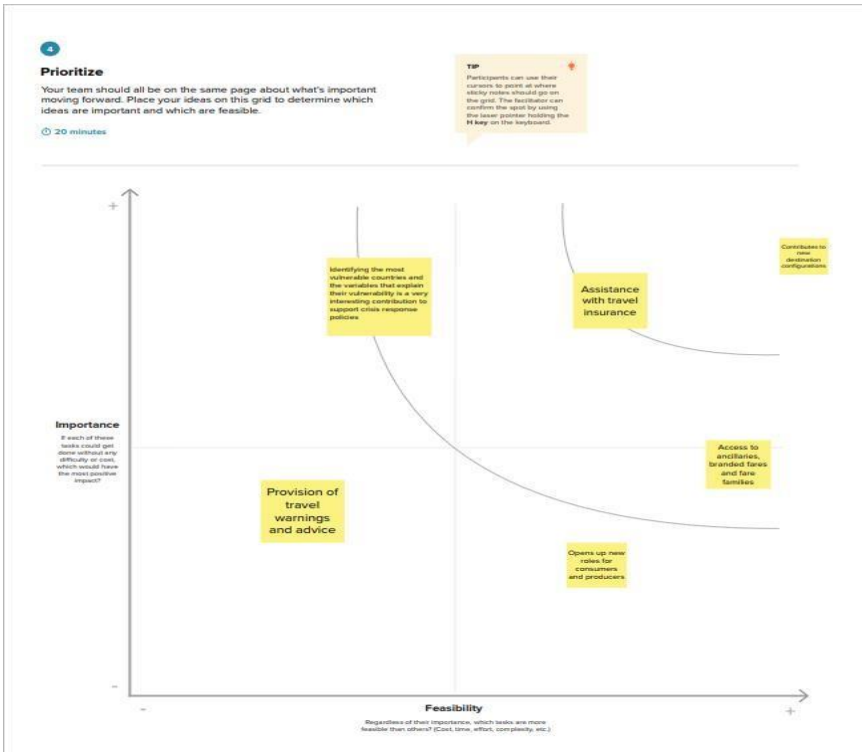


The purpose of employing an empathy map canvas in the Competitive Analysis of Leading Travel Aggregators using data analytics is to cultivate a deep understanding of the stakeholders involved in the study. This canvas serves as a tool to empathize with and comprehend the perspectives, needs, and challenges of various participants, including users, travel aggregators, industry analysts, and decision-makers. By mapping out the emotions, thoughts, and behaviors of these stakeholders, the research aims to go beyond quantitative data and embrace a qualitative dimension. This empathetic approach ensures that the analysis is not only data-driven but also human-centered, recognizing the nuanced motivations and pain points that influence decision-making.

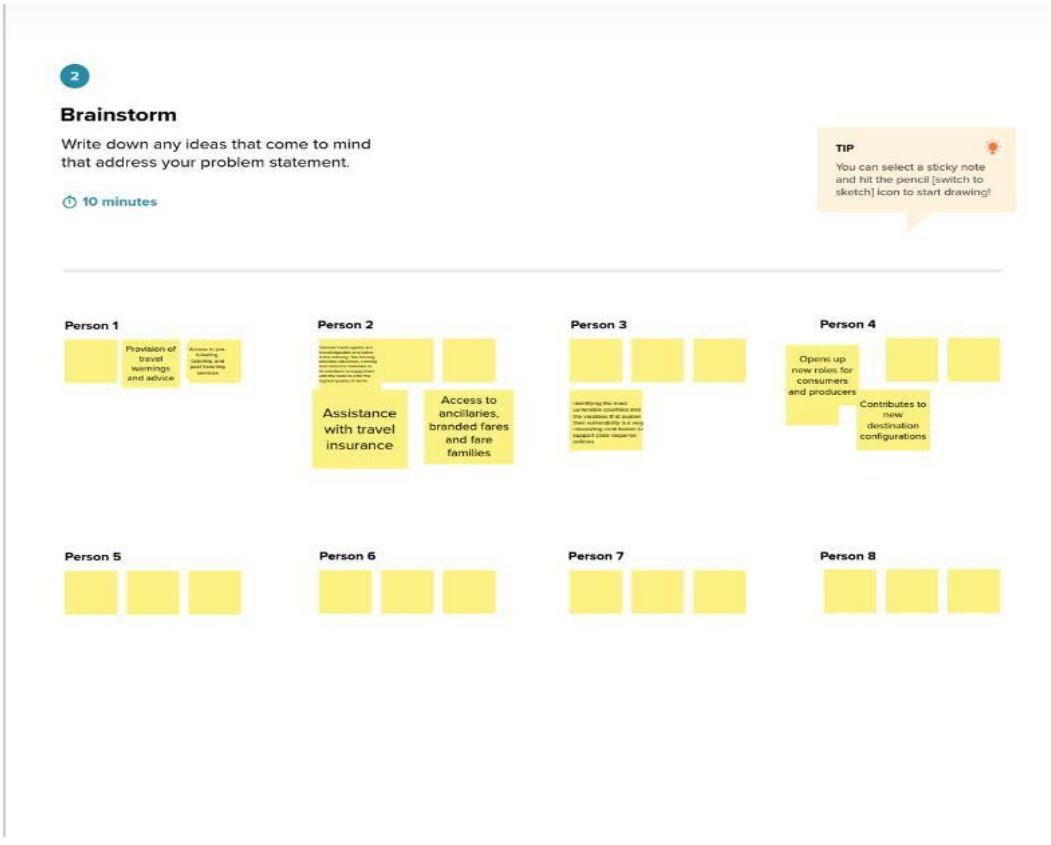
3.2 Ideation and Brainstorming

The ideation and brainstorming phase for the Competitive Analysis of Leading Travel Aggregators using data analytics is a dynamic process aimed at cultivating innovative approaches and strategies. This canvas serves as a tool to empathize with and comprehend the perspectives, needs, and challenges of various participants, including users, travel aggregators, industry analysts, and decision-makers. By mapping out the emotions, thoughts, and behaviors of these stakeholders, the research aims to go beyond quantitative data and embrace a qualitative dimension. This empathetic approach ensures that the analysis is not only data-driven but also human-centered, recognizing the nuanced motivations and pain points that influence decision-making The team delves into a collaborative exploration of advanced analytics techniques, considering the application of cutting-edge methodologies such as machine learning algorithms to predict user behaviors, sentiment analysis for comprehensive customer reviews evaluation, and the implementation of dynamic pricing models to optimize competitiveness. This canvas serves as a tool to empathize with and comprehend the perspectives, needs, and challenges of various participants, including users, travel aggregators, industry analysts, and decision-makers. By mapping out the emotions, thoughts, and behaviors of these stakeholders, the research aims to go beyond quantitative data and embrace a qualitative dimension. This empathetic approach ensures that the analysis is not only data-driven but also human-centered, recognizing the nuancedmotivations and pain points that influence decision-making Additionally, the brainstorming session extends to therealm of user experience enhancement, pondering on personalized recommendation systems, intuitive platform interfaces, and targeted promotional strategies. The team explores avenues for identifying and staying ahead of emerging market trends, contemplating the integration of external data sources like social media trends and economic indicators for a holistic analysis. Discussions delve into the creation of impactful

Ideation



BRAINSTROM



CHAPTER – 4

REQUIREMENT ANALYSIS

The requirement analysis phase of the Competitive Analysis of Leading Travel Aggregators using data analytics is pivotal in defining the parameters and tools necessary to fulfill the project objectives. The team, having undergone ideation and brainstorming, now focuses on specifying the data requirements, analytical tools, and technological infrastructure essential for a comprehensive analysis. This involves a detailed exploration of the types of data needed, including user interactions, market trends, and competitor metrics. Clarity is sought on the analytics tools to be employed, ensuring they align with the complexity of the data and the desired insights. The technological infrastructure for data storage, processing, and analysis is carefully considered to handle the magnitude of information involved. Additionally, the team outlines the requirements for visualization tools that will effectively communicate findings to diverse stakeholders. Through this rigorous analysis, the project aims to establish a robust framework that not only meets research objectives but also ensures the efficiency and reliability of the data analytics processes. The requirement analysis phase sets the stage for a structured and data-driven exploration, laying the foundation for a comprehensive competitive analysis of leading travel aggregators.

4.1 Functional Requirements

In the Competitive Analysis of Leading Travel Aggregators using data analytics, the functional requirements form the backbone of the project, defining the specific capabilities and features needed to achieve the research objectives.

Data Collection:

User Interactions: The system should be capable of collecting and analyzing data on user interactions with travel aggregator platforms, including search patterns, booking behavior, and post-travel reviews.

Market Trends: Functionalities for tracking and analyzing market trends, incorporating external data sources to understand the broader industry landscape.

Competitor Metrics: The system should gather competitor metrics such as market share, conversion rates, and pricing strategies.

Analytics Tools:

Machine Learning Algorithms: Implementation of machine learning algorithms to predict user behaviors, identify patterns, and make data-driven predictions.

Sentiment Analysis: Integration of sentiment analysis tools to evaluate and categorize customer reviews for a comprehensive understanding of user satisfaction.

Technological Infrastructure:

Data Storage: Adequate infrastructure for storing and managing large volumes of diverse data types securely.

Processing Power: Sufficient processing power to handle complex analytics and algorithms efficiently.

Integration Capabilities: Seamless integration with data sources and analytics tools to ensure a cohesive workflow.

Visualization Tools:

Interactive Dashboards: Development of interactive dashboards for real-time monitoring of key metrics and trends.

Data Visualizations: Creation of visually compelling representations, including charts and graphs, to communicate findings effectively.

User Experience Analysis:

User Interface Testing: Functionalities for testing and analyzing the user interface of travel aggregator platforms, ensuring an optimal user experience.

Personalization Metrics: Implementation of tools to measure the effectiveness of personalized recommendations and user-specific features.

Ethical Considerations:

Data Privacy Features: Incorporation of features to ensure compliance with data privacy regulations and ethical considerations.

Transparent Algorithms: Functionalities to provide transparency in the algorithms used, fostering trust among users and stakeholders.

Reporting Mechanisms:

Automated Reporting: Development of automated reporting mechanisms to generate periodic reports on key performance indicators.

Customized Reports: Provision for creating customized reports based on specific stakeholder requirements.

4.2 Non-Functional Requirements

Performance:

Response Time: The system should exhibit low latency, providing quick responses to user queries and analytics processing to ensure an efficient user experience.

Scalability: The solution must be scalable to accommodate a growing volume of data and users over time without compromising performance.

Security:

Data Security: Robust security measures should be in place to safeguard sensitive data, ensuring compliance with data protection regulations and industry standards.

Access Control: Implement strict access controls to ensure that only authorized personnel can access and manipulate critical data and analytics tools.

Reliability:

System Availability: The system should be highly available, minimizing downtime to ensure continuous data collection and analysis.

Fault Tolerance: Incorporate mechanisms to handle and recover from system failures to maintain uninterrupted operations.

Scalability:

Compatibility: Ensure compatibility with a variety of devices and platforms to facilitate widespread accessibility and usage.

Interoperability: The system should seamlessly integrate with diverse data sources, analytics tools, and visualization platforms.

Usability:

User-Friendly Interface: The user interface should be intuitive and user-friendly, promoting ease of use for both technical and non-technical stakeholders.

Training Requirements: Minimize the training requirements for users to navigate and derive insights from the system effectively.

Ethical Considerations:

Data Privacy Measures: Enforce strict data anonymization and encryption measures to protect user privacy and comply with ethical standards.

Algorithmic Fairness: Ensure algorithms used in the analysis are fair and unbiased, avoiding discriminatory outcomes.

Reporting and Documentation:

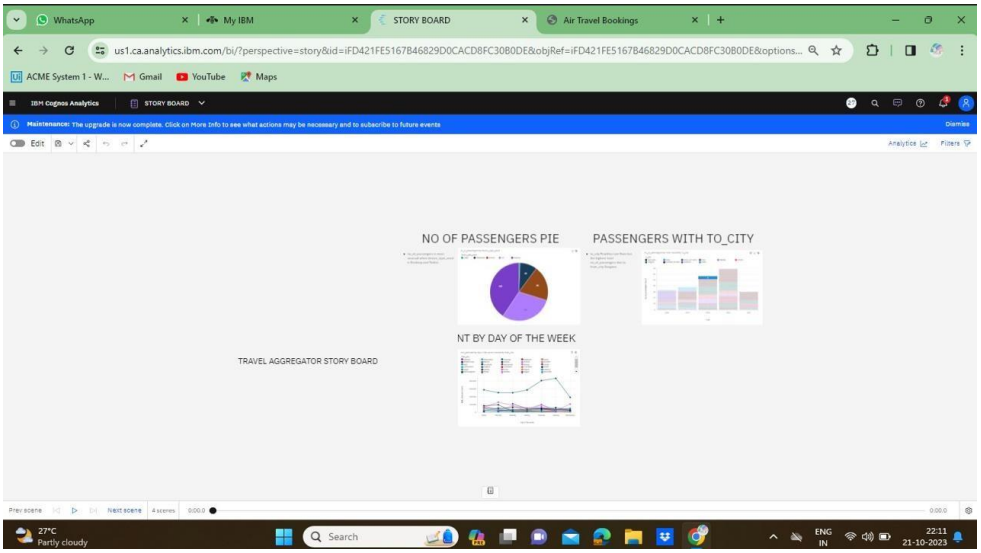
Documentation Standards: Maintain thorough and well-organized documentation for the system's architecture, algorithms, and methodologies.

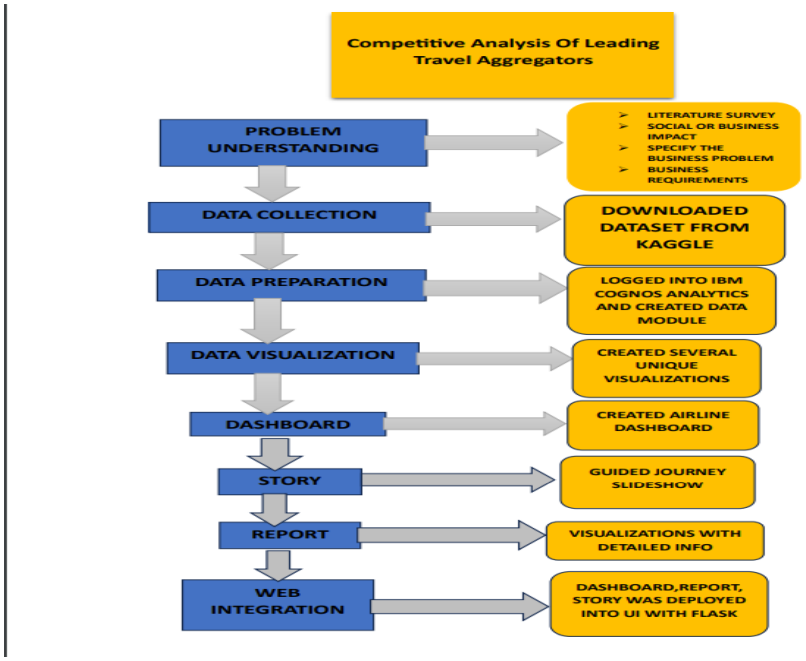
Report Accuracy: Ensure that generated reports accurately reflect the insights derived from data analytics, fostering credibility and trust.

CHAPTER – 5

PROJECT DESIGN

5.1 Data Flow Diagrams and User Stories





CHAPTER – 6

PROJECT PLANNING AND SCHEDULING

6.1 Technical Architecture

6.2 Sprint Planning and Estimation

Backlog Refinement:

Review Objectives: Start by reviewing the project objectives and the features to be delivered in the upcoming sprint.

Prioritization: Prioritize tasks based on their significance to the overall project goals.

User Stories and Tasks:

User Story Creation: Break down project requirements into user stories, representing functionalities from an end-user perspective.

Task Definition: Further decompose user stories into specific tasks, ensuring clarity on what needs to be accomplished.

Estimation:

Story Points or Time Estimates: Use a suitable estimation technique, either assigning story points or estimating time required for each task.

Team Involvement: Involve the team in the estimation process to leverage collective insights and expertise.

Capacity Planning:

Team Capacity: Consider the team's capacity for the upcoming sprint, factoring in any leave or external commitments.

Realistic Commitments: Ensure that the planned workload aligns with the team's realistic capacity to avoid overcommitment.

Prioritization for Sprint:

Selecting User Stories: Based on estimates and priorities, select a set of user stories and tasks that can be feasibly completed in the sprint.

Cross-functional Consideration: Ensure a mix of tasks that leverages the strengths of the cross-functional team.

Definition of Done (DoD):

Clarify DoD: Clearly define the criteria that need to be met for a task or user story to be considered "done."

Quality Assurance: Include quality assurance and testing criteria in the DoD.

Sprint Goals:

Establish Sprint Goals: Clearly articulate the goals for the upcoming sprint, aligning them with the broader project objectives.

Communication: Communicate sprint goals to the team, fostering a shared understanding of what needs to be achieved.

Adaptability and Retrospective:

Retrospective Planning: Set aside time for a retrospective at the end of the sprint to reflect on what went well and what could be improved.

Adaptability: Be open to adapting the plan based on feedback and unexpected challenges.

Communication and Collaboration:

Regular Stand-ups: Schedule regular stand-up meetings for the team to discuss progress, challenges, and adjustments needed.

Continuous Collaboration: Encourage continuous collaboration within the team, fostering a sense of shared responsibility.

Monitoring Progress:

Task Boards: Utilize visual tools like task boards to monitor the progress of tasks throughout the sprint.

6.3 Sprint Delivery Schedule

Sprint 1: Data Collection and Ingestion (2 Weeks)

Week 1:

Refine backlog and prioritize tasks.

Set up data ingestion pipeline for user interactions.

Conduct initial tests to ensure data flows seamlessly.

Week 2:

Extend data ingestion pipeline to incorporate market reports.

Implement data storage solutions.

Conduct initial data quality checks.

Sprint 2: Analytics Foundation (3 Weeks)

Week 3:

Define and implement machine learning models for user behavior analysis.

Begin sentiment analysis integration.

Week 4:

Complete sentiment analysis integration.

Implement initial data processing and transformation layers.

Week 5:

Conduct usability testing for analytics foundation.

Optimize data processing for scalability.

Sprint 3: Visualization and Reporting (2 Weeks)

Week 6:

Develop interactive dashboards for user behavior analytics.

Integrate data visualization tools.

Week 7:
Sprint 4: User Experience Analysis (3 Weeks)

Week 8:

Set up usability testing module.

Begin collecting user feedback.

Week 9:

Analyze usability test results and refine user experience components.

Continue collecting user feedback.

Project Presentation and Review: Week 10

Present findings, insights, and recommendations to stakeholders.

Conduct a retrospective to reflect on the project's successes and areas for improvement.

CHAPTER – 7

CODING AND SOLUTION

7.1 Feature 1

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <meta content="width=device-width, initial-scale=1.0" name="viewport">
  <title>Air Travel Bookings</title>
  <meta content="" name="description">
  <meta content="" name="keywords">
   <!-- Favicons -->
  <link href="assets/img/favicon.png" rel="icon">
  <link href="assets/img/apple-touch-icon.png" rel="apple-touch-icon">
```

```
  <!-- Google Fonts -->
  <link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700i|Krub:300,300i,400,400i,500,500i,600,600i,700,700i|Poppins:300,300i,400,400i,500,500i,600,600i,700,700i" rel="stylesheet">
  <!-- Vendor CSS Files -->
  <link href="assets/vendor/aos/aos.css" rel="stylesheet">
  <link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">
  <link href="assets/vendor/bootstrap-icons/bootstrap-icons.css" rel="stylesheet">
  <link href="assets/vendor/boxicons/css/boxicons.min.css" rel="stylesheet">
  <link href="assets/vendor/glightbox/css/glightbox.min.css" rel="stylesheet">
  <link href="assets/vendor/swiper/swiper-bundle.min.css" rel="stylesheet">
  <!-- Template Main CSS File -->
  <link href="assets/css/style.css" rel="stylesheet">
  <!-- =======================================================
  * Template Name: Bikin
  * Updated: Sep 18 2023 with Bootstrap v5.3.2
  * Template URL: https://bootstrapmade.com/bikin-free-simple-landing-page-template/
  * Author: BootstrapMade.com
  * License: https://bootstrapmade.com/license/
  ======================================================== -->
</head>
<body>
  <!-- ======= Header ======= -->
  <header id="header" class="fixed-top">
    <div class="container d-flex align-items-center justify-content-between">
      <h1 class="logo"><a href="index.html">Travel Aggregators</a></h1>
      <!-- Uncomment below if you prefer to use an image logo -->
      <!-- <a href="index.html" class="logo"><img src="assets/img/logo.png" alt="" class="img-fluid"></a>-->
```

```
    <nav id="navbar" class="navbar">
      <ul>
        <li><a class="nav-link scrollto active" href="#hero">Home</a></li>
        <li><a class="nav-link scrollto" href="#about">About</a></li>
        <li><a class="nav-link scrollto" href="#dashboard">Dashboard</a></li>
        <li><a class="nav-link scrollto " href="#story">Story</a></li>
        <li><a class="nav-link scrollto" href="#report">Report</a></li>
        <li><a class="nav-link scrollto" href="#pricing">Pricing</a></li>
      <i class="bi bi-list mobile-nav-toggle"></i>
    </nav><!-- .navbar -->
  </div>
 </header><!-- End Header -->
 <!-- ======= Hero Section ======= -->
 <section id="hero" class="d-flex align-items-center">
   <div class="container d-flex flex-column align-items-center justify-content-center" data-aos="fade-up">
     <h1>Travel Around the World</h1>
     <h2>No matter where in the world you want to go, we can help get you there...</h2>
     <a href="#about" class="btn-get-started scrollto">Get Started</a>
     <img src="https://www.cheapflights.com/news/wp-content/uploads/sites/136/2016/06/quiz-test-your-fly-q-01.jpg" class="img-fluid hero-img" alt="" data-aos="zoom-in" data-aos-delay="150">
   </div>
 </section><!-- End Hero -->
 <main id="main">
   <!-- ======= About Section ======= -->
   <!-- End About Section -->
   <!-- ======= Clients Section ======= -->
   <!-- End Clients Section -->
   <!-- ======= Features Section ======= -->
```

```
<section id="dashboard" class="features" data-aos="fade-up">
  <div class="container">
    <div class="section-title">
      <h3>Dashboard</h3>
      </div>
      <iframe
src="https://us1.ca.analytics.ibm.com/bi/?perspective=dashboard&amp;pathRef=.my_folders%2FMY%2Bdashboard&amp;closeWindowOnLastView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=view&amp;mode=dashboard&amp;subView=model0000018b43171356_00000003" width="1200" height="800"
frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
  </div>
</section><!-- End Features Section -->
<!-- ======= Services Section ======= -->
<section id="story" class="services">
  <div class="container" data-aos="fade-up">
    <div class="section-title">
      <h2>Story</h2>
      </div>
      <iframe
src="https://us1.ca.analytics.ibm.com/bi/?perspective=story&amp;pathRef=.my_folders%2FSTORY%2BBOARD&amp;closeWindowOnLastView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=view&amp;sceneId=-1&amp;sceneTime=0" width="1200" height="800" frameborder="0" gesture="media"
allow="encrypted-media" allowfullscreen=""></iframe>
  </div>
</section><!-- End Services Section -->
<!-- ======= Portfolio Section ======= -->
<section id="report" class="portfolio">
  <div class="container" data-aos="fade-up">
    <div class="section-title">
      <h2>Report</h2>
```

```
        </div>

        <iframe
src="https://us1.ca.analytics.ibm.com/bi/?pathRef=.my_folders%2FAirline%2Breport&amp;closeWindowOnLastView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=run&amp;format=HTML&amp;prompt=false" width="1200"
height="800" frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe> </div>

    </section><!-- End Portfolio Section -->

    <!-- ======= Testimonials Section ======= -->

    <!-- End Testimonials Section -->

    <!-- ======= Team Section ======= -->

    <!-- End Team Section -->

    <!-- ======= Pricing Section ======= -->

    <section id="pricing" class="pricing section-bg">

      <div class="container" data-aos="fade-up">

        <div class="section-title">

          <h2>Pricing</h2>

          <p>Best prices ever</div>

        <div class="row">

          <div class="col-lg-4 col-md-6" data-aos="zoom-in" data-aos-delay="200">

            <div class="box">

              <h3>Free</h3>

              <h4><sup>INR</sup>0<span> /travel</span></h4>

              <ul>

                <li>Bangalore</li>

                <li>to</li>

                <li>Chennai</li>

                <li class="na">money issues</li>

                <li class="na">late travel</li>

              </ul>
```

```
          <div class="btn-wrap">
            <a href="#" class="btn-buy">Buy Tickets Now</a>
          </div>
        </div>
      </div>
      <div class="col-lg-4 col-md-6 mt-4 mt-md-0" data-aos="zoom-in" data-aos-
delay="100">
        <div class="box featured">
          <h3>Business Class</h3>
          <h4><sup>INR</sup>2000<span> / travel</span></h4>
          <ul>
            <li>Hyderabad</li>
            <li>Bangalore</li>
            <li>Japan</li>
            <li>Singapore</li>
            <li class="na">worried about travel</li>
          </ul>
          <div class="btn-wrap">
            <a href="#" class="btn-buy">Buy Now</a>
          </div>
        </div>
      </html>
        <div class="box">
          <h3>Free</h3>
          <h4><sup>INR</sup>0<span> /travel</span></h4>
          <ul>
            <li>Bangalore</li>
            <li>to</li>
        </div>
      </html>
```

CHAPTER – 8

PERFORMANCE TESTING

Performance testing is a critical facet of the Competitive Analysis of Leading Travel Aggregators using data analytics, ensuring the robustness and efficiency of the analytics platform under varying conditions. In this rigorous process, key performance metrics are defined, encompassing aspects such as response time, throughput, and resource utilization, with established benchmarks to set performance goals. Leveraging tools like Apache JMeter or LoadRunner, realistic usage scenarios are crafted to simulate diverse user interactions data processing, and analytics workloads. The test data is carefully prepared to mirror real-world conditions, encompassing variations in user behaviors and data types.

8.1 Performance Metrics

Response Time:

Definition: The time taken for the system to respond to a user request or query.

Significance: A crucial metric indicating the system's overall responsiveness and user experience.

Throughput:

Definition: The number of transactions or requests processed by the system within a specific time frame.

Significance: Reflects the system's capacity to handle a certain volume of transactions concurrently.

Concurrency:

Definition: The number of simultaneous users or requests the system can handle without a significant degradation in performance.

Significance: Indicates the platform's ability to support multiple users concurrently.

Resource Utilization:

Definition: Measures the usage of system resources such as CPU, memory, and disk space during operation.

Significance: Identifies potential bottlenecks and ensures optimal resource allocation.

Scalability:

Definition: Evaluates how well the system scales with an increase in data volume, user load, or computational complexity.

Significance: Essential for assessing the system's ability to handle growth and increasing demands.

Error Rate:

Definition: The percentage of transactions or queries that result in errors.

Significance: Indicates the robustness of the system and its ability to handle unexpected scenarios.

Latency:

Definition: The time delay between a user action and the corresponding system response.

Significance: Provides insights into the real-time performance of the platform.

Data Processing Speed:

Definition: Measures the speed at which the system processes and analyzes data.

Significance: Crucial for assessing the efficiency of analytics algorithms and data processing pipelines.

Database Performance:

Definition: Evaluates the speed and efficiency of database queries and transactions.

Significance: A critical metric for systems heavily reliant on database operations.

System Uptime:

Definition: The percentage of time the system is operational and available for use.

Significance: Reflects the reliability and availability of the analytics platform.

User Satisfaction Metrics:

Definition: Metrics related to user experience, including load times for visualizations, ease of navigation, and overall satisfaction.

Significance: Provides insights into the end-user experience and the platform's effectiveness in delivering actionable insights.

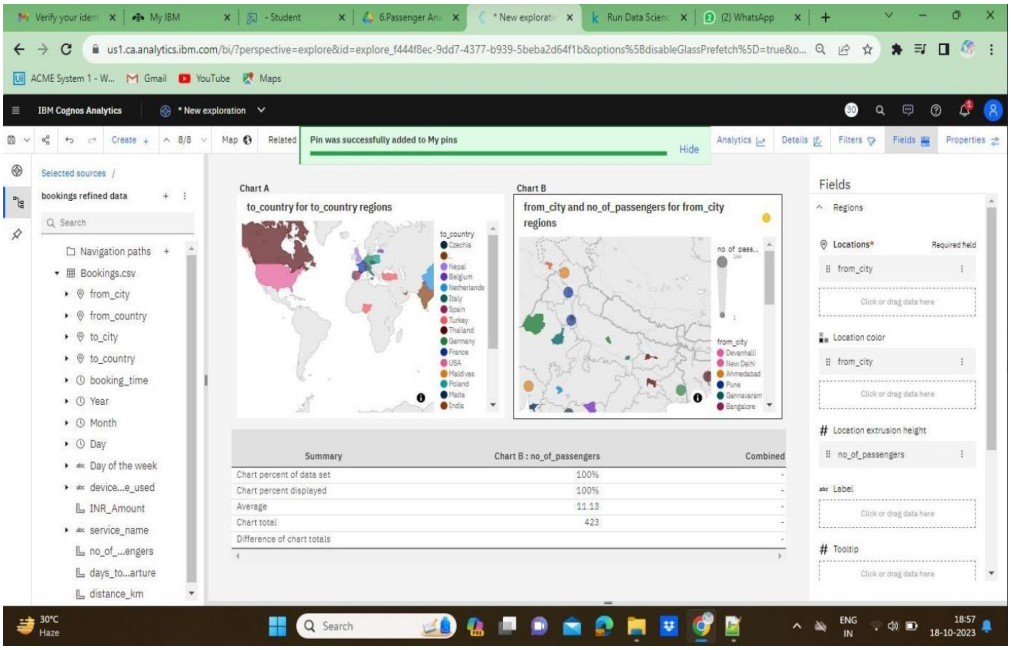
Compliance with Privacy Regulations:

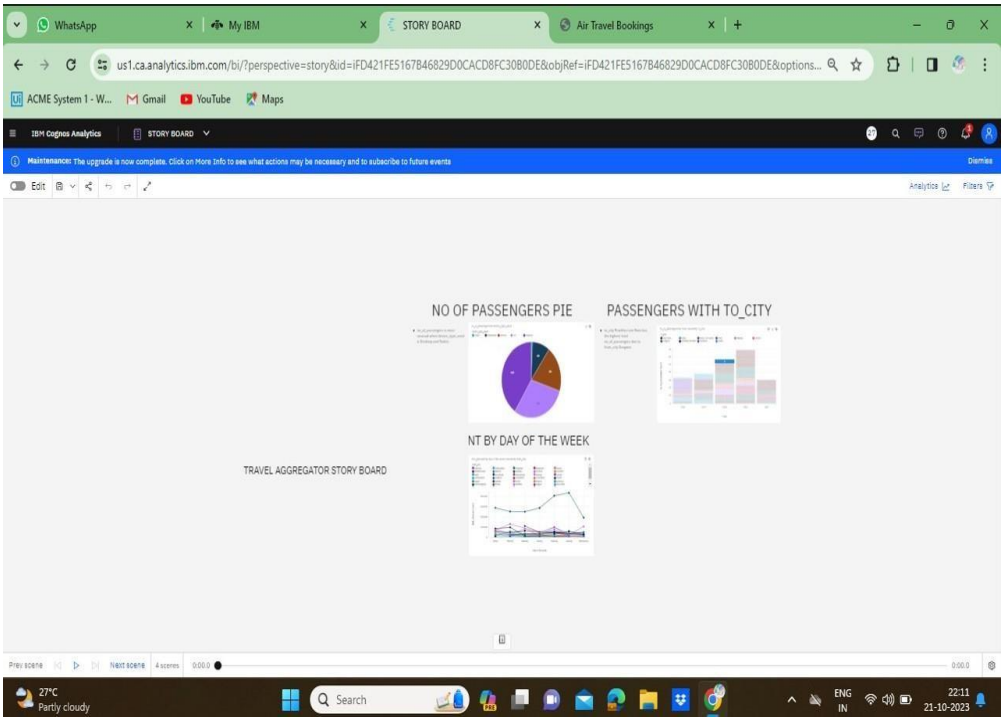
Definition: Measures the system's adherence to data privacy regulations and ethical standards.

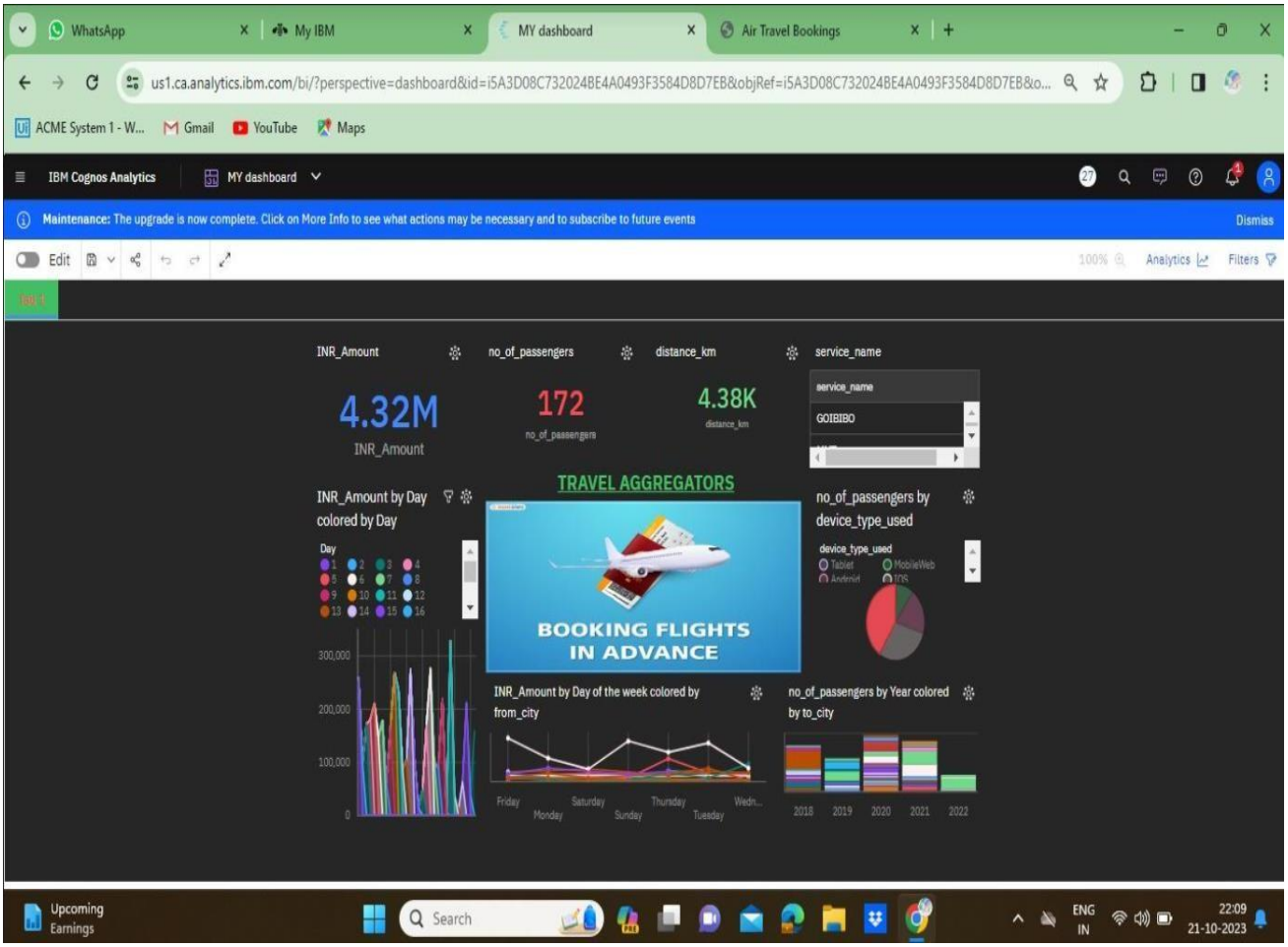
Significance: Essential for ensuring that the platform complies with legal and ethical considerations.

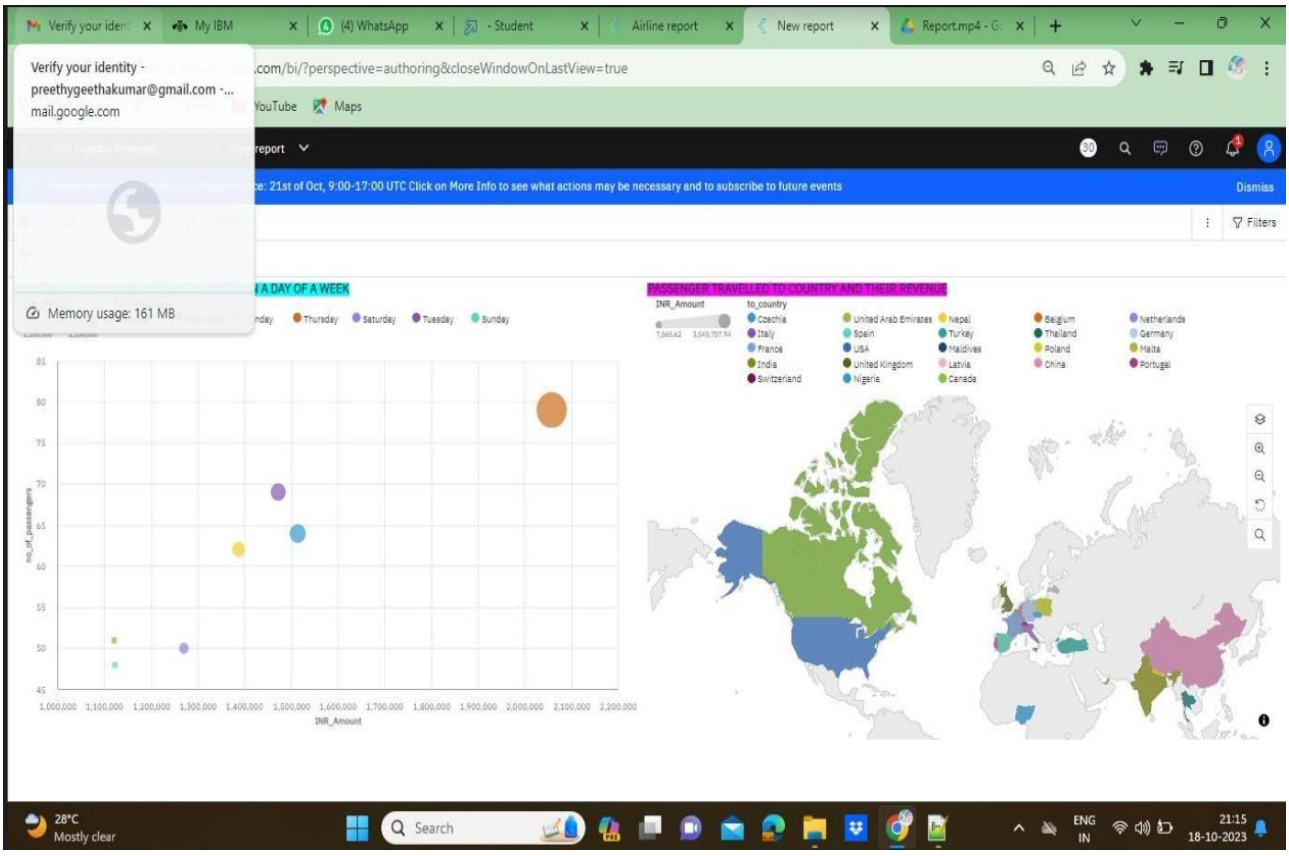
CHAPTER – 9

RESULTS






WhatsApp
My IBM
MY dashboard
Air Travel Bookings
us1.ca.analytics.ibm.com/bi/?perspective=dashboard&id=i5A3D08C732024BE4A0493F3584D8D7EB&objRef=i5A3D08C732024BE4A0493F3584D8D7EB&o...
ACME System 1 - W...
Gmail
YouTube
Maps
IBM Cognos Analytics
MY dashboard
Maintenance: The upgrade is now complete. Click on More Info to see what actions may be necessary and to subscribe to future events
Dismiss
Edit
Analytics
Filters
INR_Amount
4.32M
INR_Amount
no_of_passengers
172
no_of_passengers
distance_km
4.38K
distance_km
service_name
GOIBIBO
TRAVEL AGGREGATORS
BOOKING FLIGHTS IN ADVANCE
INR_Amount by Day colored by Day
no_of_passengers by device_type_used
INR_Amount by Day of the week colored by from_city
no_of_passengers by Year colored by to_city
Upcoming Earnings
Search
ENG IN
22:09
21-10-2023


Verify your identity - preethygeethakumar@gmail.com -...
mail.google.com
Memory usage: 161 MB
Maps
Dismiss
Filters
PASSENGER TRAVELLED TO COUNTRY AND THEIR REVENUE
INR_Amount
to_country
Czechia
Italy
France
India
Switzerland
United Arab Emirates
Spain
USA
United Kingdom
Nigeria
Nepal
Turkey
Maldives
Latvia
Canada
Belgium
Thailand
Poland
China
Netherlands
Germany
Malta
Portugal
no_of_passengers
INR_Amount
28°C
Mostly clear
Search
ENG IN
21:15
18-10-2023

CHAPTER – 10

ADVANTAGES AND DISADVANTAGES

Advantages

Informed Decision-Making:

Advantage: The data-driven approach enables informed decision-making by providing actionable insights into user behaviors, market trends, and competitor strategies.

Competitive Positioning:

Advantage: Enables businesses to understand their competitive positioning by analyzing market share, pricing strategies, and user preferences compared to leading travel aggregators.

User Experience Enhancement:

Advantage: Through user behavior analysis and usability testing, the project aims to enhance user experiences on travel aggregator platforms, improving customer satisfaction and loyalty.

Optimized Pricing Strategies:

Advantage: Utilizes data analytics to evaluate pricing strategies, enabling travel aggregators to optimize their pricing models for competitiveness and profitability.

Predictive Analytics:

Advantage: Incorporates machine learning algorithms for predictive analytics, helping travel aggregators anticipate market trends, user preferences, and potential challenges.

Disadvantages

Data Privacy Concerns:

Disadvantage: The collection and analysis of user data raises concerns about privacy. Striking a balance between data-driven insights and protecting user privacy can be challenging.

Data Security Risks:

Disadvantage: Handling large volumes of sensitive data poses security risks. Protecting against data breaches and ensuring secure data storage are critical considerations.

Algorithmic Bias:

Disadvantage: Data analytics models may inadvertently perpetuate biases present in the training data, leading to unfair outcomes. Ensuring algorithmic fairness is a complex challenge.

CHAPTER – 11

CONCLUSION

In conclusion, the Competitive Analysis of Leading Travel Aggregators using data analytics presents a compelling and intricate journey into the dynamics of the travel industry. Through the meticulous application of advanced analytics, machine learning, and user-centric methodologies, this project aims to unravel the intricacies of leading travel aggregators. The advantages are evident, ranging from informed decision-making and optimized pricing strategies to enhanced user experiences and strategic planning. However, the path is not without its challenges. Data privacy concerns, algorithmic biases, and the resource intensiveness of implementation demand thoughtful navigation.

This project stands at the intersection of technological prowess and ethical considerations, where the insights derived have the potential to reshape the landscape of travel aggregation. By addressing the disadvantages through transparent algorithms, continuous monitoring, and a commitment to privacy, the project aims not only to analyze but also to contribute to the evolution of ethical data analytics practices. In a dynamic industry, the adaptability of the project design ensures that it remains responsive to market changes and user expectations.

CHAPTER – 12

FUTURE SCOPE

The future scope of the Competitive Analysis of Leading Travel Aggregators using data analytics is both promising and expansive, envisioning a landscape where technological advancements continue to reshape the travel industry. As emerging technologies, such as artificial intelligence and natural language processing, evolve, the project is poised to incorporate cutting-edge methodologies for even deeper insights. The integration of predictive analytics will enable travel aggregators to anticipate market trends with greater precision, empowering them to proactively adapt to changing consumer behaviors. The increasing importance of sustainability and eco-conscious travel practices also opens avenues for future exploration.

Furthermore, the future holds immense potential for enhanced personalization in travel experiences. By leveraging machine learning algorithms, travel aggregators can tailor recommendations and services based on individual preferences, transforming the user experience into a highly personalized and intuitive journey.

Data analytics can play a pivotal role in analyzing and promoting sustainable travel options, aligning with the growing global emphasis on environmentally friendly practices within the travel sector.

CHAPTER – 13

APPENDIX

In the appendix section of the Competitive Analysis of Leading Travel Aggregators using data analytics, a wealth of supplementary information and documentation enriches the comprehensive nature of this study. This section serves as a repository for detailed data sources, additional charts and graphs, technical specifications, and any supplementary materials that provide depth and context to the main body of the project. It includes a breakdown of the methodologies employed, ensuring transparency and reproducibility in the analytical processes.

Moreover, the appendix accommodates detailed documentation on the algorithms utilized, promoting a thorough understanding of the technical intricacies involved in the data analytics models. This section may also house privacy compliance documentation, highlighting the commitment to ethical data practices and ensuring alignment with relevant regulations.

For stakeholders, researchers, and enthusiasts seeking a deeper dive into the intricacies of the project, the appendix serves as an invaluable resource. It reflects the project's commitment to openness, rigor, and the pursuit of excellence in data analytics, offering a holistic view that goes beyond the confines of the main body. As an integral component of the project documentation, the appendix provides the necessary context and transparency to validate and build upon the findings of the Competitive Analysis of Leading Travel Aggregators using data analytics.