TRIPPER:

A Smart Travel and- accommodation Management System

By

NAME and ID

Nusrat Monsur – 111 191 001

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Submitted to
Ahmed Imran Kabir
Lecturer, School of Business and Economics
United International University

Department of Business & Economics

United International University

Abstract

The tourism industry is growing fast with smart systems that give travelers personalized experiences. This paper discusses about a smart tour where users pick dates, places, and budgets, and algorithms make customized packages with the best options for accommodation, travel, and sightseeing. This paper introduces a new way to design tourism systems based on what users want. The proposed method uses machine learning to study different data. According to this article, the system makes travel plans tailored to users' preferences, history, and sightseeing habits. This research also suggests the best places to stay, travel options, and attractions based on what users like and can afford. To see if this idea works, a study with many tourists were done. The results show that using personalized recommendations from algorithms boosts tourist satisfaction and business earnings. This research shows it's important to have personalized recommendation systems in smart tourism to make travel better overall.

Keywords: Smart Tourism, Personalized Packaging, User Preferences, and Machine Learning.

Acknowledgement

First and foremost, I would like to thank Almighty Allah. This program would not have been achieved without the collaboration and efforts of many people across the courses. I'm also grateful to everyone who contributed in some form. I would want to thank my renowned academic tutor, lecturer Ahmed Imran Kabir Sir. I'd also like to thank the past researchers whose work influenced my own. Last but not least, I'd like to convey my gratitude to my loving family members for their support during the procedure.

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Chapter 1

Introduction

Tourism is now a big part of our lives, with lots of people exploring new places and cultures daily. Technology has changed the tourism industry a lot, especially with data analytics and machine learning. These helps make personalized travel experiences based on when and where people want to go and how much they want to spend. We want to make travel better for users by giving them customized tours. To do this, we'll use machine learning algorithms to understand what users like and how they travel.

1.1 Project Overview

We're adding a recommendation system that suggests the best lodging, travel options, and destinations based on what users like and their budget. Our goal is to give users a hassle-free travel experience. Users don't need to plan or research manually any longer with our project. We'll gather data like user preferences, travel history, and tourist trends. Then, we'll use advanced data analysis to create algorithms that make personalized travel plans just for you.

1.2 Motivation

We are committed to constructing and bringing this project to life. There are several vital factors in accomplishing this. These are:

- The motivation behind this research is to develop and evaluate algorithmic approaches that offer users a seamless and stress-free travel experience. Byoffering users personalized recommendations of the most appropriate accommodation, travel media, and tourist attractions according to their tastes and budgets.
- Intelligent tourism systems have the potential to revolutionize the tourism industry by offering users personalized travel experiences. However, the effectiveness of these systems is highly dependent on the accuracy and relevance of the recommendations they provide.
- The motivation behind this paper is to address the challenges modern travelers face in planning their trips. Despite the myriad of resources available on the Internet, planning a trip that meets all users' preferences and limitations can be challenging and time-consuming.

1.3 Objectives

- Developing an algorithmic approach, to create personalized travel packages to suit user preferences, constraints, and budgets.
- Integrate a recommendation engine that suggests the best accommodations, travel media, and attractions based on user preferences and budget.
- Evaluate the effectiveness of the proposed approach in terms of user satisfaction.
- To compare the performance of algorithmic approaches with other state-of-the-art approaches for designing intelligent tourism systems.
- Contribute to developing intelligent tourism systems that provide users with a seamless and stress-free travel experience.

1.4 Methodology

We aim to create a web application and accompanying system architecture that allows people of all ages to enjoy their selected trip packages around Bangladesh. So, to do this we need a systemic approach there will be a registration and authentication system. After the registration, for the whole application, we will use HTML, CSS, and JavaScript for the front end. And for the Back-end we will use PHP and MySQL for data storage. To give users their desired package, we will create an auto-generation package using a Heuristic search algorithm and sorting algorithms.

1.5 Project Outcome

The project created a smart travel system. It makes personalized travel plans based on when the user wants to travel, where the user wants to go, and how much the user wants to spend. This system studies what users like, where users have been before, and popular tourist spots to make customized routes for users. It also suggests the best places to stay, travel options, and attractions within your budget. Research showed that this personalized approach made tourists happier. In summary, this project made a smarttravel system to give users a smoother and more enjoyable trip.

Major contributions of this project are summarized below:

- We have built a customized travel package-based intelligent tourism system.
- We have Utilized machine learning techniques to analyze user preferences.
- We have Integrated a recommendation engine that suggests the best accommodations.

- We have conducted an empirical study to evaluate the effectiveness of the proposed approach.

Chapter 2

Background

2.1 Literature Review

2.1.1 Related Application

GoZayaan:

GoZayaan is a Bangladeshi online travel agency that offers a wide range oftravel services, including:

- Flights (both domestic and international)
- Hotels
- Tours and packages
- Car rentals
- Travel insurance

GoZayaan has a wide selection of hotels and resorts to choose from, in popular tourist destinations all over Bangladesh, including Cox's Bazar, Saint Martin's Island, Sylhet, and Dhaka. They also offer a variety of tour packages, ranging from short weekend getaways to longer multi-day trips.

GoZayaan is known for its competitive prices and excellent customer service. They offer a variety of payment options, including credit cards, debit cards, and mobile wallets. They also have a 24/7 customer support team that is always happy to help.

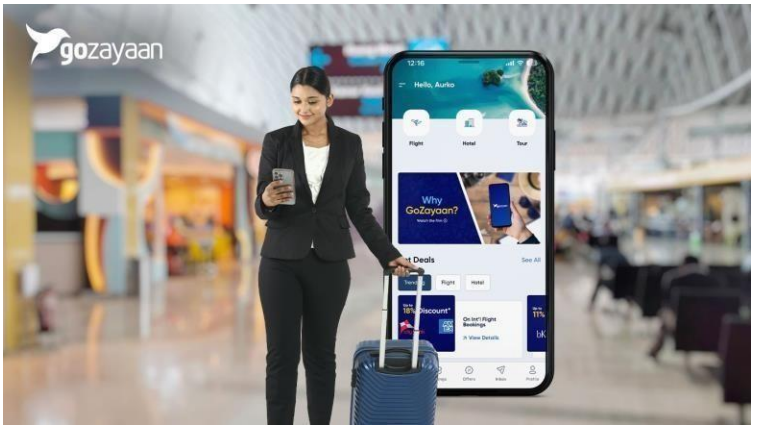


Figure 2.1: GoZayaan

ShareTrip:

ShareTrip is Bangladesh's first and top online travel aggregator (OTA). It started in 2012 by Mr. Shamim Ahsan and Mr. Tanvir Ahmed to make travel easier and cheaper for everyone. ShareTrip gives various travel services like flights, hotels, tours, and packages. It works with over 1,000 airlines and 100,000 hotels worldwide to give customers the best deals. ShareTrip is known for its low prices, great customer service, and easy booking platform. It also has special deals and discounts for its customers.

Figure 2.2: ShareTrip

Figure 2.3: Tour Group BD

Tour Group BD:

Tour Group BD is a famous travel agency in Bangladesh that focuses on group tours. They have different tour packages for popular tourist spots in Bangladesh and around the world. Tour Group BD is known for its good prices, well-planned tours, and knowledgeable tour guides. They also have special deals and discounts for their customers.

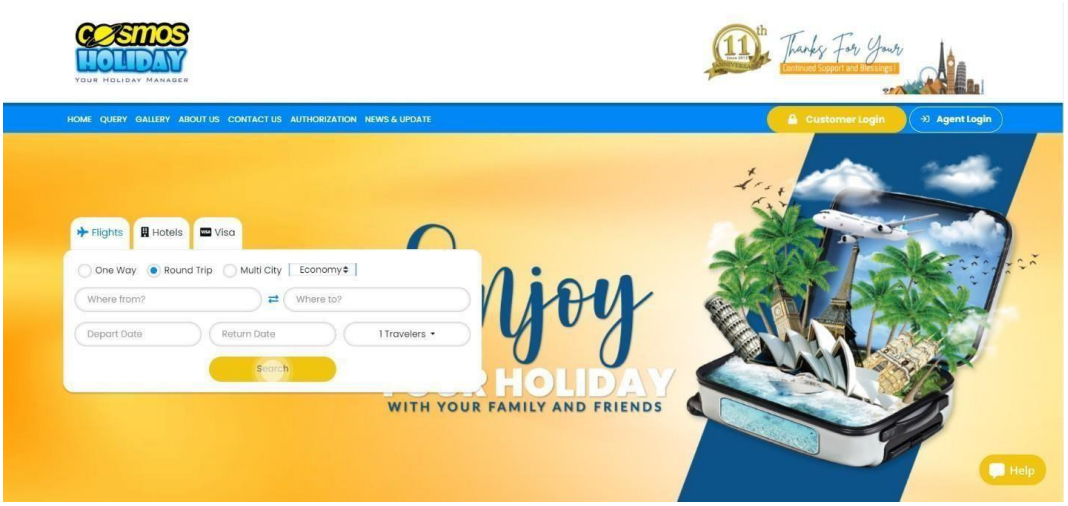


Figure 2.4: Cosmos Holidays

Cosmos Holidays:

Cosmos Holidays is a respected travel agency in Bangladesh. They provide many travel services like flights, hotels, tours, and packages. They are known for their excellent services and skilled team. Cosmos Holidays offers tour packages to famous tourist spots in Bangladesh and abroad. They also make customized tour packages to fit their customers' needs and budgets.

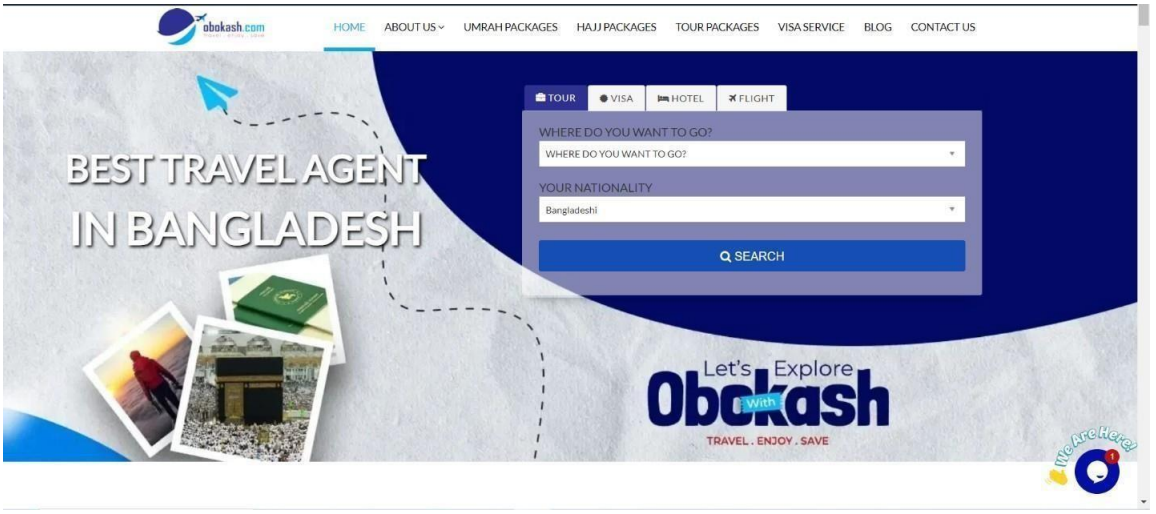


Figure 2.5: Obokash Travel

Obokash Travel:

Obokash Travel is a trusted travel agency in Bangladesh. They provide many travel services like flights, hotels, tours, and packages. They are known for their good prices and great customer service. Obokash Travel offers tour packages to famous tourist spots in Bangladesh and abroad. They also make customized tour packages to fit their customers' needs and budgets.

2.1.2 Related Research

Latifee, Enamul AU, and Tamanna, Mehdina PY [1] discussed the importance of a Smart Travel System called To-Tour. It combines travel and accommodation services into one platform using a Service Oriented Architecture (SOA) and Service Oriented Analysis and Design (SOADL) methodology. This system aims to solve the problem of travelers in Indonesia having to use multiple platforms for different travel needs.

Ernest E. Onuiria, Henry C. Omoroje, and Chukwudi G. Ntimac, Ayokunle A. Omotunde [2] focused on designing and implementing a smart platform to help tourists in Nigeria find information about tourist locations. They used the Rational Unified Process (RUP) methodology and implemented the system using MySQL, HTML, and PHP. Their aim is to help tourists make better decisions by providing accurate information about tourist locations in Nigeria.

Ulrike Gretzel, Marianna Sigala, Zheng Xiang, and Chulmo Koo [3] aimed to define smart tourism and its technological and business foundations. They discussed how smarttourism combines technology and social developments like ICT and big data. Despite its popularity, smart tourism lacks clear definition and theoretical development, highlighting the need for further research.

Mr. Amal Davies, Mr. A. Ganesan, and Dr. V. Kavitha [4] presented a tourism management system that automates processes in the travel industry, including booking and confirmation. The system, developed using HTML, PHP, and Microsoft SQL Server 2008, allows users to access information about travel destinations and book tours easily. It is designed to be efficient, processing records quickly and accurately, and suitable for personal and business travel. The

main objective of the tourism management system is to help tourism companies manage their customers and other stakeholders effectively.

Sandeep Munjal, Parul G. Munjal [5] This paper explores the concept of asustainable tourist destination and its importance in ensuring the continuity of its natural and cultural resources, while also being economically viable. It highlights the challenges faced in balancing the interests of all stakeholders, including the economic health, the well-being of locals, the satisfaction of visitors, culture, and the protection of resources. The impacts of tourism on social, cultural, economic, and environmental dimensions are discussed, with a focus on the negative impacts such as environmental degradation and cultural commodification, as well as the positive impacts such as sustained cultural resources and livelihoods for the local population. The literature review concludes witha discussion on the inherent debate in the term quote; sustainable tourist destination quote; and the dependence of the destination on tourism and sustainability defined from a local perspective. The methodology involves a literature review and aggregation and analysis of the case studies.

Researchers like Kendall Taylor, Kwan Hui Lim, and Jeffrey Chan [6] have studied a tough problem called the TourMustSee problem. It's about planning travel itineraries in cities, suggesting places to visit, and making a schedule considering factors like travel time, visiting hours, and what tourists like. They've come up with different ways to solve this problem, such as using certain types of algorithms. This research helps the tourism industry suggest better travel plans for tourists based on what they like. In short, they're working on making better algorithms to plan travel and improve trip quality.

Yuto Maejima, Hayato Horanai, and Liya Ding [7] proposed a smart system for Tokyo travelers. It uses technology like natural language processing and augmented reality to give personalized travel advice and warn about safety issues. They talk about the problems with current tourism systems and making this new system. Their mobile app suggests personalized plans based on what users like and their past trips. It also has safety features like real-time risk assessment and an emergency button. This system could make traveling better and safer, but more research is needed for sure.

Bhagya Rathnayake and Dharshana Kasthurirathna [8] wrote about making the best travel plans using special algorithms. They made a mix of two algorithms and tested it with a tour company. Their method worked better than others in finding good plans quickly. This article is helpful for anyone planning trips and wants to use smart methods.

Anindo Saka Fitri, Daud Arya Rafa, Achmad Yusuf Al Ma’ruf, Farkhan, Fitri Ana Wati, and Abdul Rezha Efrat Najaf [9] talked about making a website for buying tour tickets. They looked at how important it is to have good websites for tourism and the challenges of making them. They say the website should be easy to use, safe, and fast, and reach

many people.

2.2 Gap Analysis

Following a study of the literature, we realized that the tourism industry primarily relies on traditional methods of providing travel packages to customers. These packages are often predefined and offer limited flexibility in terms of customization. The process of booking travel packages is in most cases manual and does not involve any intelligent algorithms that can analyze user preferences and suggest personalized travel plans. As a result, customers may not be able to fully optimize their travel experience, resulting in lower satisfaction levels and lost revenue opportunities for tourism companies. This study focused on the development of innovative strategies which include an algorithm that uses machine learning techniques for a smart travel and accommodationmanagement system. The main gap between this research and other traveling systems is optimal travel packages that offer the best accommodation, travel medium, and tourism recommendations under the user's criteria. Through the literature reviews, weacknowledged that there is some research capable of generating personalized based on the user's preferences and previous travel behavior but have some constraints in termsof implementations. We got some ideas from that research for generating an optimized solution.

2.2.1 Comparison Table

Table 2.1: Comparison Table of Related Works.

Paper Name	Findings From the Paper	Limitation Of the Paper	Future Work
Bhagya Rath-nayake et al.(2022)[7]	The proposed hybrid algorithm combining the Ant Colony Optimization algorithm and Tabu Search algorithm provides a promising solution methodology for generating optimal tour plans including reducing travel costs and improving customer satisfaction.	The limitations of the paper" Generating an Optimal Tour Plan with Op- optimization" are that the proposed methodology has only been tested on a single case study, and its applicability to other tour planning scenarios requires further research.	Future work for the pa- per" Generating an Optimal Tour Plan with Optimization" may include applying the proposed methodology to different tour planning scenarios and exploring the potential of other optimization techniques for generating optimal tour plans.
JenniferKim Lian Chan et al .[5]	Sustainable tourism is crucial for the long-term viability of destinations, protecting natural and cultural resources, and supporting the local economy and community.	Limitations of the study include a time-bound literature review, non-representative case studies, and a lack of exploration of the challenges and potential trade-offs of implementing sustainability practices in different contexts.	It could focus on developing a comprehensive framework for sustainable tourism, -analyzing theeffectiveness of sustainability initiatives, exploring technology's role, and investigating public-private partnerships and community involvement in promoting sustainability.
KendallTay-lor el at.(2018)[6]	The TourMustSee problem is a challenging task in travel itinerary planning with practical applications in the tourism industry. To solve it researchers have proposed the LP+M algorithm which is an ILP-based approach.	The paper does notprovide an evaluation of the proposed LP+Malgorithm on real-worlddatasets or a comparisonwith state-of-the-artapproaches.	The future work suggested by the paper is to explore incorporating other factors such as travel mode, weather, and traction popularity into the TourMustSee problem to improve itinerary quality.

Paper Name	Findings From the Paper	Limitation Of the Paper	Future Work
Rayan Nur-badi et al .(2019) [1],	A SOA and SOADL methodology-based smart travel system called" To-Tour" in Indonesia to integrate various travel and accommodation services into one platform. It aims to develop a comprehensive travel reservation solution in Indonesia.	The paper lacks a detailed technical analysis andmay have limited generalizability beyond the context of Indonesia.	It may involve the development and implementation of the To-Tour system and evaluating its effectiveness in addressing the problems faced by travelers in Indonesia.
Ernest E. Onuiria et al. (2016) [2]	A user-friendly and easy-to navigate an intelligent platform to provide curate information and recommendations on tourist locations inNigeria. The platform was developed using the Rational Unified Process methodology.	The limitations of the system include dependency on the accuracy and completeness of data, limited success in making recommendations due to available data, and accessibility limitations for tourists without web-enabled platforms.	It could expand the sys-team's capabilities, integrate with other tourism platforms, improve artificial intelligence techniques, develop a mobile application, and conduct re-search on tourists'perceptions of the system'susefulness.
Ulrike Gret-zel et al.(2015)[3]	Smart tourism is a com-plex and multifaceted concept that involves the use of technology, data, and connectivity to improve tourism experiences.	The paper acknowledges the lack of consensus on the definition of smart tourism, the need for further research on its impact, and the challenge of balancing benefits with privacy and data protection.	The paper identifies areas for future research, including de-developing a definition, conducting empirical studies, examining challenges and opportunities, exploring stakeholder roles, and developing theoretical frameworks for smart tourism initiatives.

Table 2.2: Comparison Table of Related Works.

Mr. Amal Davies et al .[4]	The system automates all processes in the tourism industry providing a more efficient and streamlined AP- approach using HTML, PHP, and Microsoft SQL Server 2008 which allows it to run on any browser and process records quickly and efficiently.	Limitations of the pro-posted tourism management systems include potential issues with technology obsolescence, reliance on third-party input that may lead to errors, and the lack of information provided about data privacy and security.	Potential future work for the tourism management system includes implementing user feedback, machine learning-based recommendations , multi-language support, a mobile app version, and blockchain technology for improved security.
Anindo Saka Fitri et al.(2022)[8]	The Bersukaria Tour case study shows that the developed system has improved the efficiency of the booking process and has increased customer satisfaction, indicating the potential benefits of web-based information systems in the tourism industry.	The paper lacks a comprehensive evaluation of the system's usability, security, and scalability.	Future work may include a more in-depth evaluation of the developed system's usability, security, and scalability, as well as the exploration of potential improvements and extensions of the system.

2.3 Summary

This chapter offers important background information that confirms our literature review and establishes the legitimacy of our topic. The results of the survey we performed are also presented. In our section on relevant research, we summarized many of the papers we analyzed. We looked for a few web applications that could be similar to ours. We investigated and analyzed those online applications in order to have a thorough understanding. This offers us a general idea of how our web application compares to the competition. After analyzing multiple publications, we designed a strategy to fill in the gaps. So, to close the deficit, we implemented our strategy.

Chapter 3

Project Design

This paper is intended to serve as a manual for users, administrators, designers, testers, and developers in charge of constructing the tourism-related website. Users should obtain all of the information needed for the software's conception, creation, and testing, and then use it for implementation and development.

3.1 Requirement Analysis

3.1.1 Functional and non-functional requirements.

Requirements for non-registered users:

1. The application should give a brief idea about the application using a tutorial or onboarding screen to unregistered visitors to get information without registration into the system.
2. Non-existing users cannot access the system's functional or secret areas.
3. Users should be able to choose whether to register as an adult or underage (18).

Requirements for registered users:

1. Users must view their personal information upon logging in to the system.
2. Users must provide the necessary information about their travel preferences, including the date of the tour, the destination, and their budget.

3.1.2 Use Case Diagram

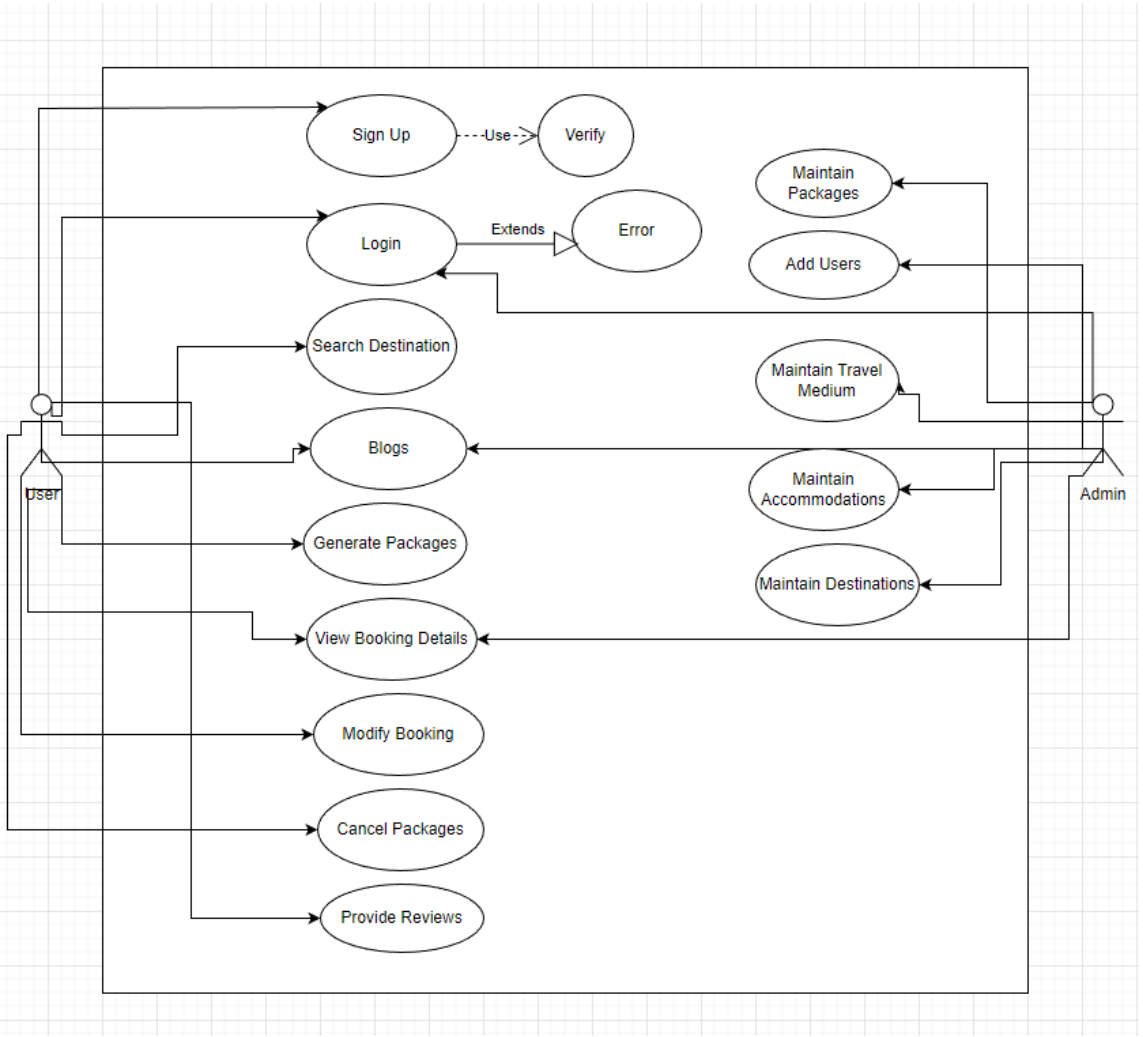
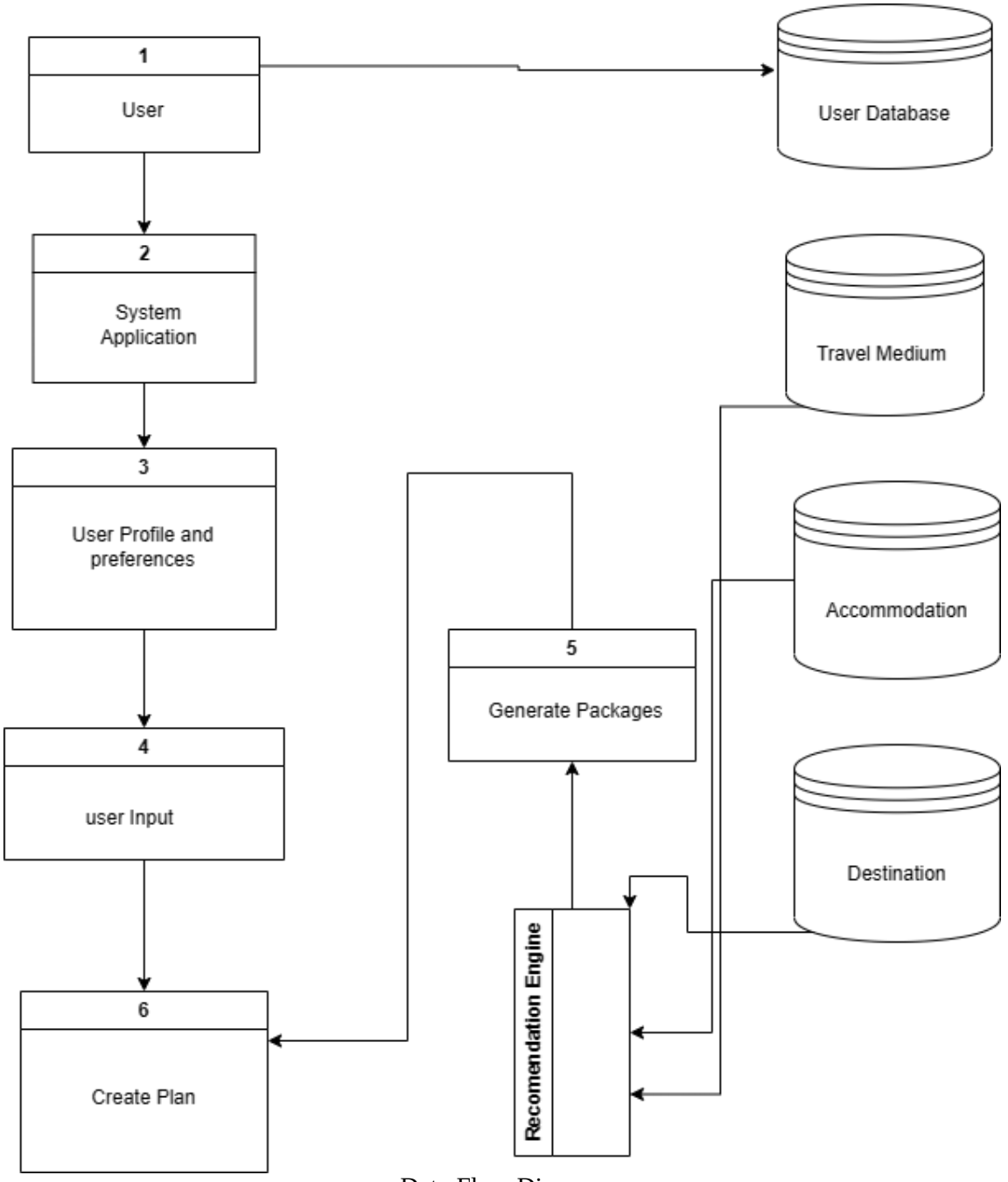


Figure 3.1: Use Case Diagram

3.1.3 Data Flow Diagram



Data Flow Diagram

3.1.4 Class Diagrams

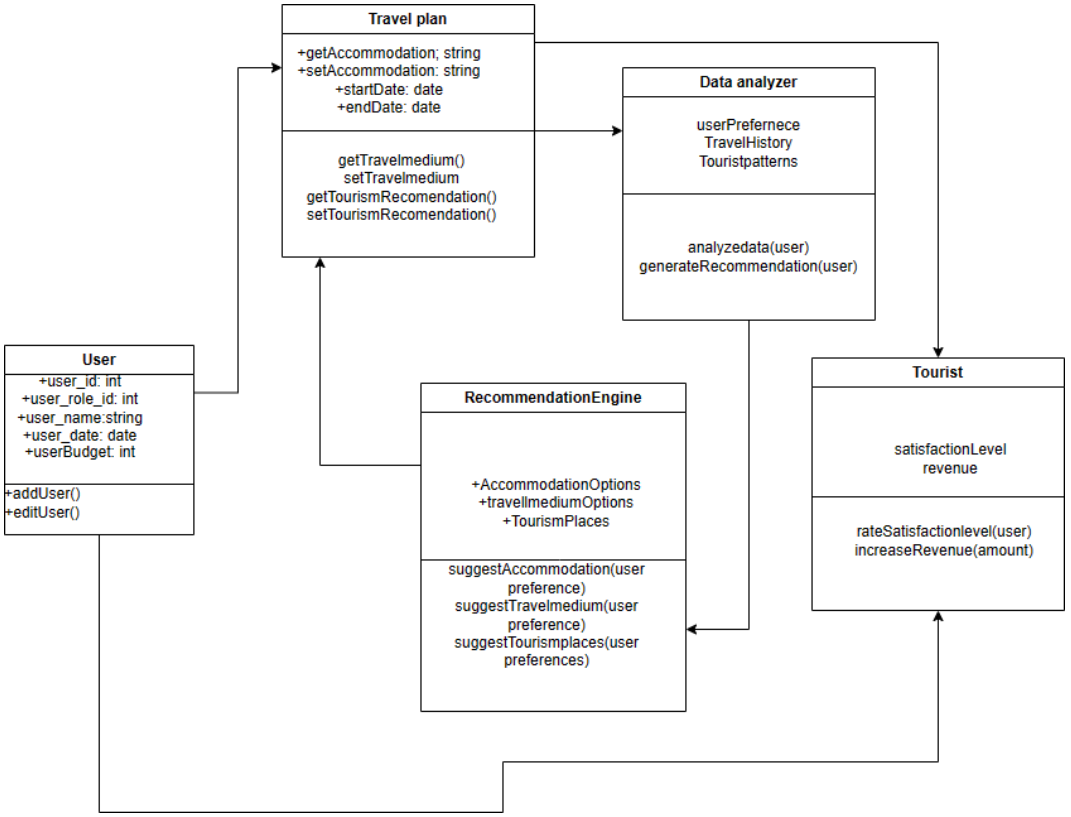


Figure 3.2: Class Diagrams

3.2 Detailed Methodology and Design

We aim to create a web application and associated system infrastructure that allows individuals of all ages to enjoy tourism services. So, to accomplish this, we need a comprehensive strategy. There will be a registration and authentication process. For verification, we shall use the Election Commission's National ID card verification API. After registration, the front end of the application will be built using HTML, CSS, and JavaScript. In the backend, we will utilize PHP and MySQL to store data.

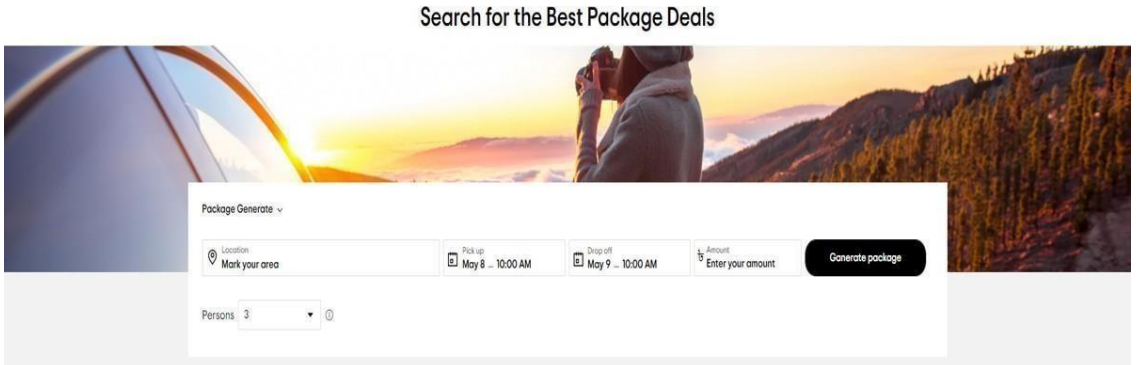


Figure 3.5: search for desired packages

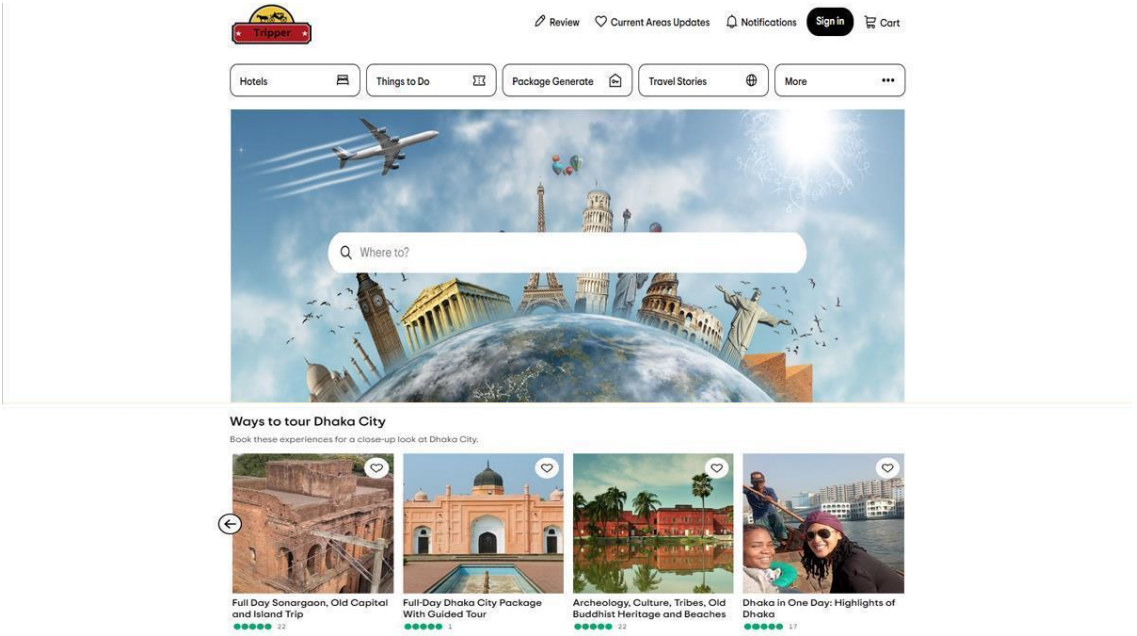


Figure 3.3: Dashboard

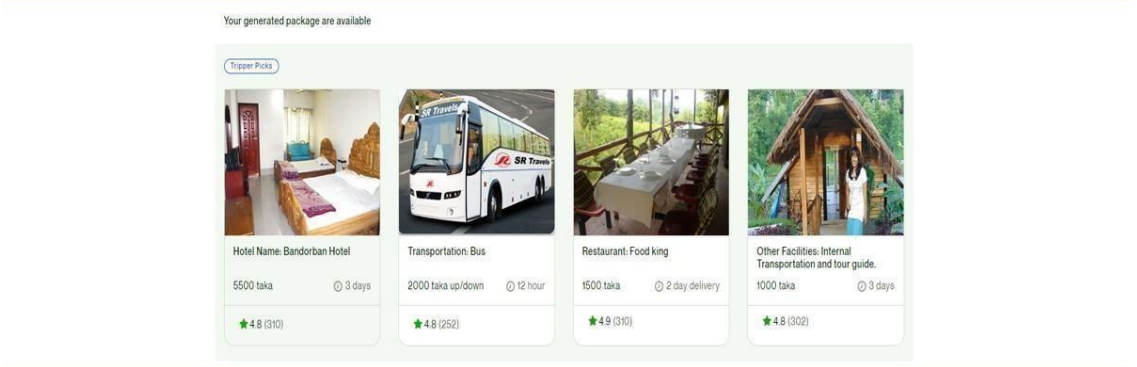


Figure 3.4: result of auto-generated packages

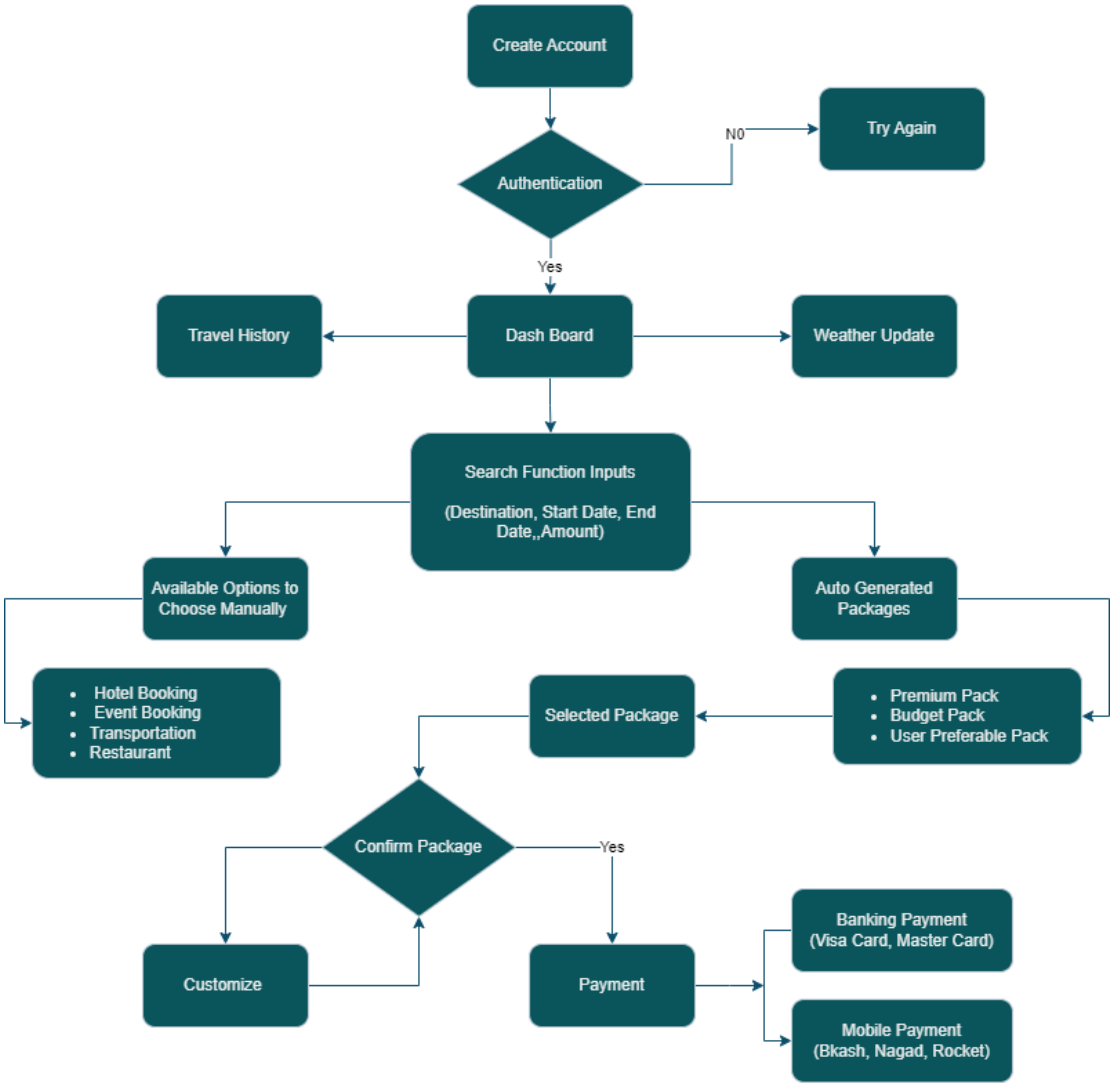


Figure 3.5: System workflow

3.3 Summary

We discussed our functional and non-functional requirements, goals, and objectivesin this chapter, and also provided relevant diagrams such as the class diagram, use case, and proposed architecture. These diagrams portray the system's actors, databases, and internal and external processes. Furthermore, we presented our ongoing task breakdown framework, as well as mentioned potential future expansion plans.

Chapter 4

Implementation and Results

In this chapter, we'll talk about how we want to accomplish the project. This part is grouped by the many methods of execution we will employ to assure the success of our strategy, including what we will utilize and how it will be carried out.

4.1 Environment Setup

This section explains how to set up the environment for our travel website. It covers the hardware and software needs, like what platforms and programming languages we're using. We also talk about adding any other tools we need, like APIs or outside services. Lastly, we explain how to set up the database and server.

4.1.1 Coding Environment

We utilized Visual Studio code as the coding environment here. It is open-source software. It supports debugging, syntax highlighting, intelligent code generation, and Git integration.

4.1.2 Version Controlling Environment

This section will cover our version control system. For a major project like this, we need a version control platform that allows us to manage group activity and efficiently inspect faults. We used Git and GitHub for version management. GitHub: GitHub is an internet-hosted repository and version-control system for software development that uses the git command. Nowadays, it is the most commonly utilized in both professional and nonprofessional settings. Reason for using GitHub (Pros):

- Easy to use: We're all familiar with GitHub's command and interface.
- The repository system is well-documented and has a community to address any issues.
- Easy collaboration: GitHub eliminates the need for additional installation or company services, allowing us to simply upload our work to a private repository. We can collaborate even when we are not in a professional setting.

4.1.3 Design Environment

Another important aspect of a project is design, especially for web-based applications where appearance is important. We divided our environment for design into three primary steps.

- The front-end design was created using HTML, CSS, Figma, and Bootstrap.
- We used PHP for backend design. PHP is a popular general-purpose programming language that is ideal for rapid, flexible, and pragmatic web development.
- Database Design: We focused on designing our database. Our database requirements were originally documented in DFD (data flow diagram). Then we used MySQL to generate the collections we had in mind.

4.2 Testing and Evaluation

In this section, we discuss how we determined whether our travel website functions well. We explain the various tests we conducted, such as testing small elements, determining how everything fits together, and allowing users to try it out. We also describe the exact features we evaluated to ensure that everything works quickly and safely. This section summarizes how we ensured our app's dependability and functionality.

- Unit Testing: We check each function in our project to make sure it works right.
- Integration Testing: Once a feature passes tests, it is integrated with other features to ensure compatibility.
- After unit and integration testing, we conduct black-box testing. We focus on the inputs and outputs to check if our system is functioning properly, rather than on how it works internally.
- User testing: We asked many users to test our app and provide feedback on any issues they encountered.

4.3 Results and Discussion

Here, we share what we found while testing our travel website. We looked at the data we gathered and we pointed out the important discoveries. We also talked about any problems we faced and how we fixed them. Plus, we compare what we expected with what happened, mentioning any differences. This part gives a good look at how well ourapp works.

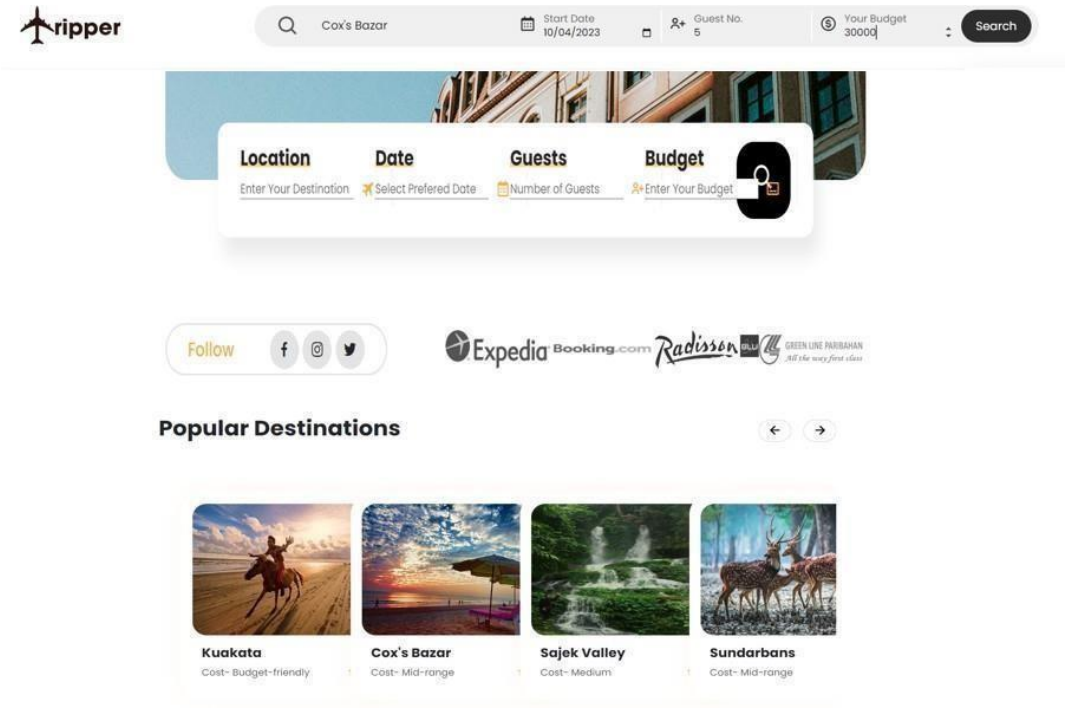


Figure 4.1: Dashboard

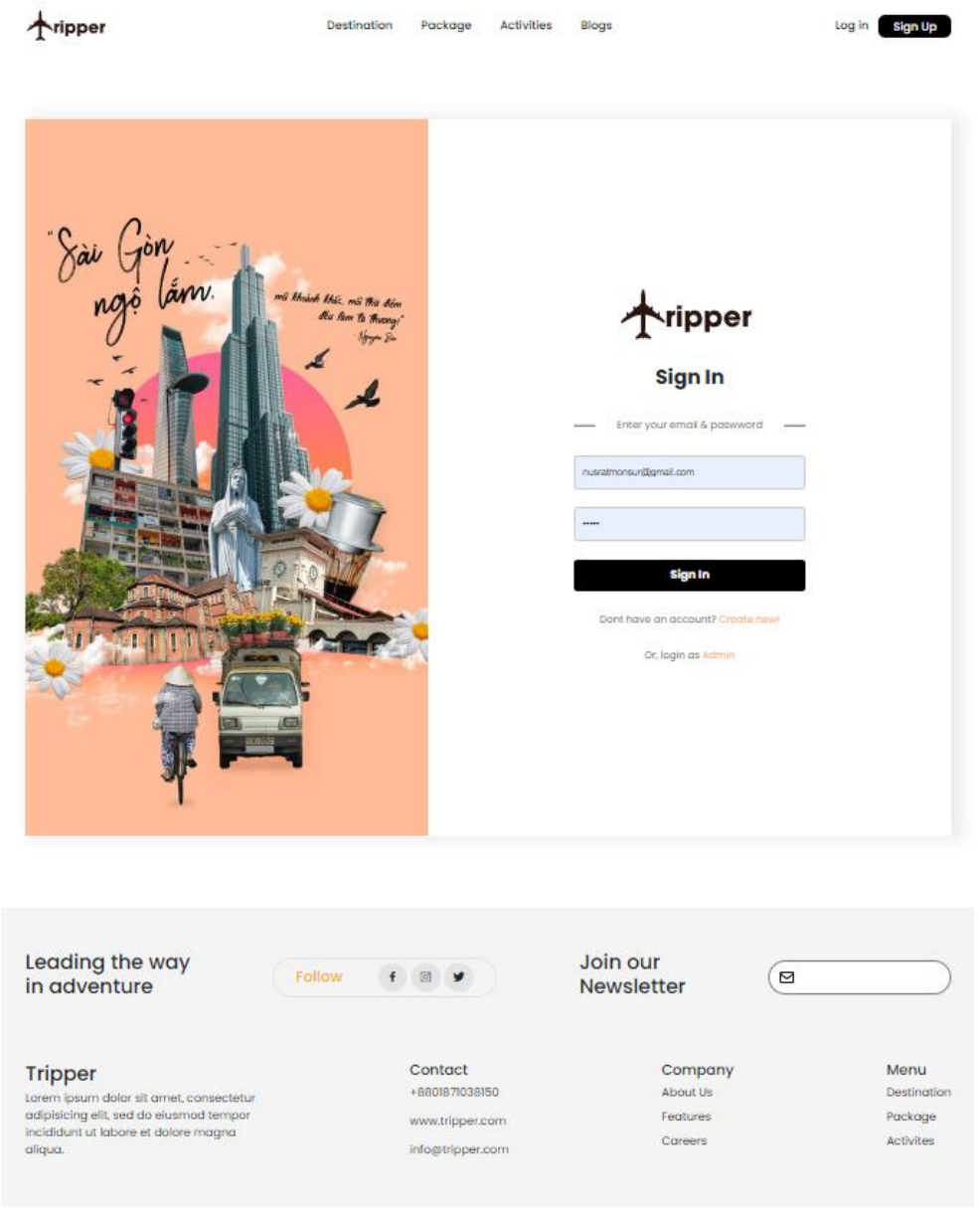


Figure 4.2: Sign In, Sign Up and Profile

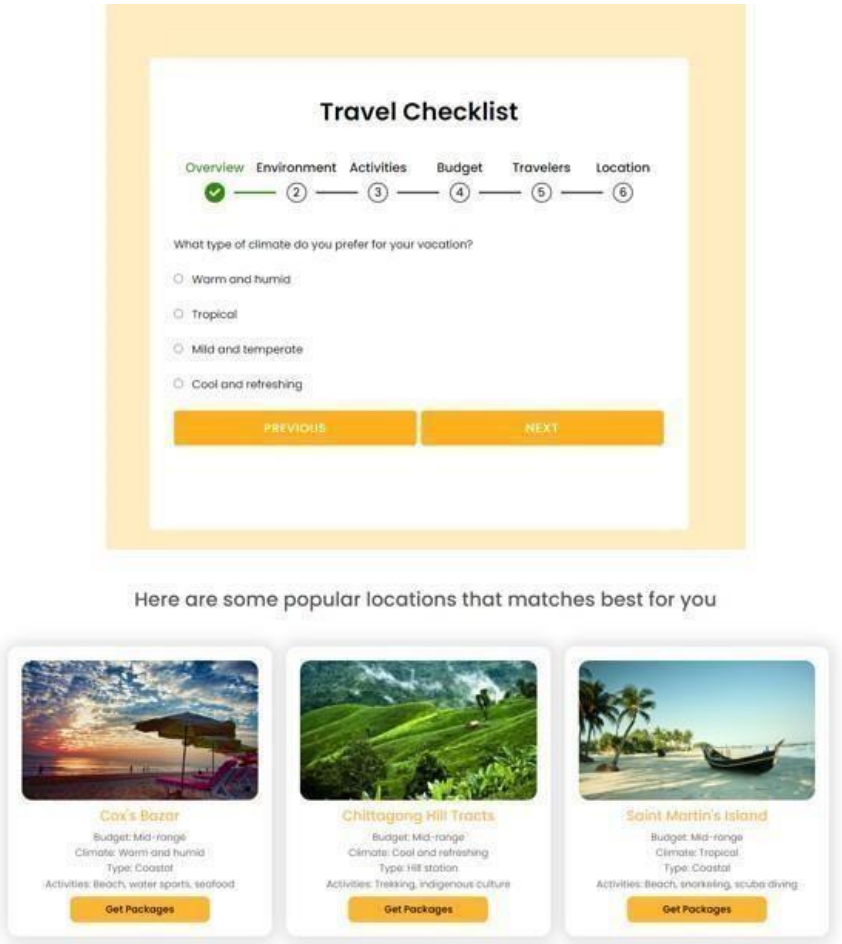


Figure 4.3: Search by Survey

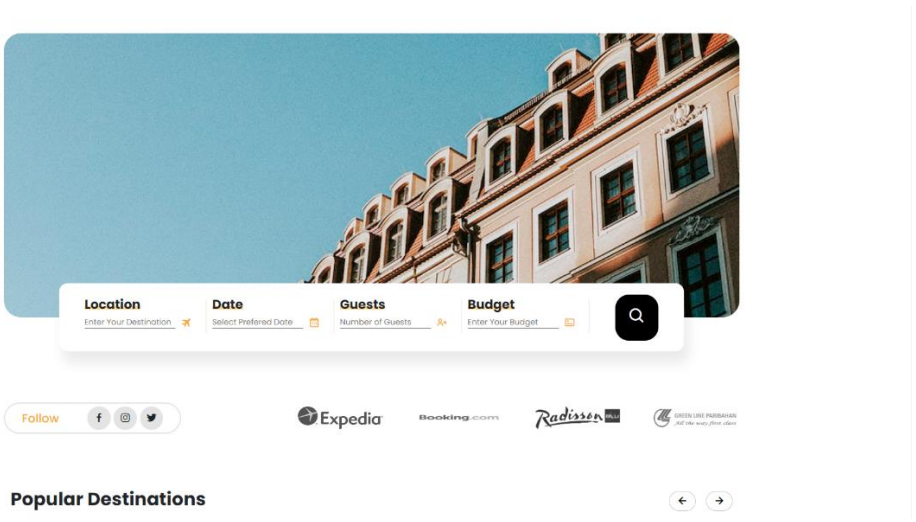


Figure 4.4: Search by Package

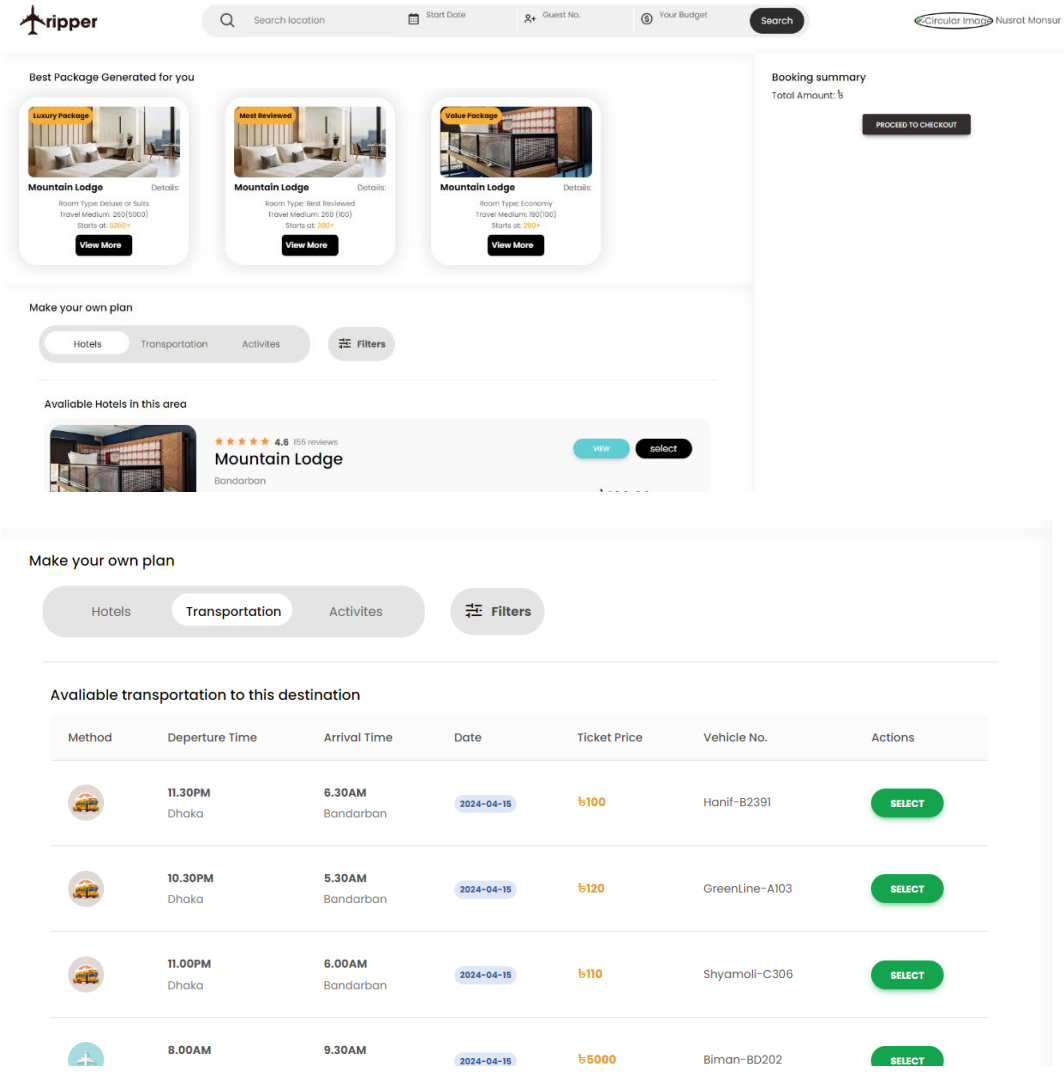


Figure 4.5: Payment Process

4.4 Summary

In this part, we sum up how our travel website was made and what happened. We remind readers of the important things we talked about earlier, focusing on what we achieved. We also talk about any interesting things we learned from the results and what they mean for making things better in the future. This section is like a final look at how we made our travel website and what happened because of it.

Chapter 5

Standards and Design Constraints

This chapter will cover a variety of standards, design limitations, design thinking techniques, complex engineering issues, and cost analyses.

5.1 Compliance with the Standards

For our project, we followed some guidelines. Those are—

5.1.1 Software Standards

Visual Studio Code: Visual Studio is a computer program made by Microsoft. It helps developers write, test, and fix code for different programming languages. It has many tools like editing, debugging, and managing projects. You can also work with others using it. It has extra things you can add to make it better. It also helps with things like keeping track of changes to your code, testing it, and making sure it works well.Basically, Visual Studio is a really useful tool used by developers everywhere.

XAMPP: XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP server, MariaDB database, and interpreters for scripts.

5.1.2 Communication Standards

We'll use WIFI, Ethernet, and GSM. We use WIFI/mobile internet to connect individuals to our platform. WIFI has the advantage of being low-cost and simple to set up, but its range is limited. We use mobile internet to connect devices on a wired local area network. Global System for Mobile Communication. Mobile devices such as phones and tablets use the cellular-wireless telecommunications standard or network. Used in our system to store and transmit data to the server.

5.2 Design Constraints

5.2.1 Economic Constraint

In Bangladesh, many people have low incomes and cannot afford to travel within the country. Even if they want to, the costs can be too high. This means that domestic tourism doesn't grow as much as it could. Our project offers affordable travel packages for people with limited budgets so they can have a great trip and also help boost the economy.

5.2.2 Environmental Constraint

Feeling unsafe in Bangladesh discourages both local and international tourists from visiting. The lack of access to safe drinking water and clean food at hotels, resorts, and tourist spots also deters tourists. Our project helps users find safe tourist destinations and recommend suitable hotels.

5.2.3 Ethical Constraint

Our project is designed to be used only for ethical and fair purposes. We have carefully considered engineering ethics to make sure our project is used for the benefit of all parties involved. We have taken extra measures to prevent any misuse of our project andto ensure that no one is taken advantage of in any way. Our goal is to make sure that our project contributes to the betterment of society and does not cause harm in any way.

5.2.4 Health and Safety Constraints

Our project includes real-time tracking of data to ensure the safety of travelers. If a traveler has any problems, they can send us a signal for help. We'll quickly send a team to assist them. Our aim is to make travelers feel safe and ensure they're okay during their trip. We take our clients' safety seriously and promise to help them promptly and effectively whenever they need it.

5.2.5 Social Constraint

Our system is like a travel website and it's easy to use. We know not everyone is used to travel websites, so we've made ours really easy to understand and use. Our aim is to make sure everyone, even if they're not good with technology, can use our system easily. We think keeping things simple is important so that everyone can travel safely and without any trouble.

5.2.6 Sustainability

Our project aims to help the environment and make travel easier for everyone. It also aims to make travel cheaper and safer. We'll promote responsible tourism to protect nature and keep our country beautiful. We'll encourage travelers to create less waste and choose eco-friendly places to stay. Also, we'll work with local communities to support sustainable tourism and local businesses.

5.3 Complex Engineering Problem

5.3.1 Complex Problem Solving

This section includes a mapping of problem-solving categories as well as quality information for a project.

K1 Natural Science	K2 Mathematics	K3 Engineering Fundamentals	K4 Specialist Knowledge	K5 Engineering Design	K6 Engineering Practice	K7 Comprehension	K8 Research literature
No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 5.1: Mapping with Knowledge Profile.

Table 5.2: Mapping with complex problem-solving.

P1 Dept of Knowledge	Yes	This project needs study websites and papers that meet similar goals of knowing (K8), it needs mathematical approaches like budget calculations and statistical analysis (K2), using a heuristic algorithm to create a recommendation engine (K3, K4), User experience design (UX design), responsive web design, web development, quality assurance (QA)(K5, K6), to ensure the protection of users information and preventing any misuse(K7).
P2 The range of Con- flirting Requirements	Yes	1. User Experience vs. Functionality. 2. Security vs. Convenience 3. Speed vs. Accuracy. 4. Innovation vs. Stability. 5. Cost vs. Quality.
P3 Depth of Analysis	Yes	Developing a successful travel website requires a depth of analysis across a range of areas. This includes conducting user needs analysis, competitor analysis, technical analysis, and market analysis.
P4 Familiarity Of Issues	Yes	No outside problems are encountered by following the practice of professional engineering for this project.
P5 Extent of Applicable Codes	Yes	In our project to address conflicting requirements, stakeholders may need to engage in a collaborative process to reach a mutually acceptable solution.
P6 The extent of Stakeholder Involvement	Yes	For this project, the stakeholders are the admins and investors. Conflicting requirements may arise when stakeholders have different priorities or goals for the project. As, the admin may prioritize technical functionality, while the business owner may prioritize user experience and revenue generation.
P7 Inter-dependence	Yes	In our project, interdependency between stakeholders and designers, also tween designers and developers.

5.3.2 Engineering Activities

In this section, present a map of engineering activity. Add subsections to each mapping to provide the rationale.

Table 5.3: Mapping with complex engineering activities.

A1 Range of source s	Yes	Resources include 1. Human resources. 2. Hardware andsoftware resources. 3. Data and information resources. 4. Financial resources.5. Security resources. Time resources.
A2 Level of Interaction	Yes	The level of interactions includes 1. Integrating multiple data sources. 2. Balancing user preferences and budget. 3. Managing user feedback. 4. Ensure user data privacy.
A3 Innovation	Yes	The use of algorithms and data analysis can enable the website to generate customized travel packages for users based on their preferences and budgets. By using a genetic algorithm that uses crossover and mutation to find the optimal solution.
A4 Consequences for society and environment	Yes	Several consequences include increased tourism, economic inequality, and revolution of tribal culture.
A5 Familiarity	Yes	Can able to manage accommodation, travel medium, and destinations within their budget which already exist. By this, we can make a sustainable tourism system.

5.4 Summary

we analyzed the probable limitations of our proposal. We also reviewed the project's feasibility. Moreover, we reflected on the optimal way to execute the project proficiently and effectively, and we explored alternative courses of action if we opted for a different path.

Chapter 6

Conclusion

In this part, we present a final summary of our efforts.

6.1 Summary

Creating any project from scratch is always difficult. While working on this project, we encountered numerous obstacles and challenges while also learning a great deal. We first needed to determine the public requirement for this project. We also compared similar approaches to our own and discovered that we could incorporate some new and enhanced features. After that, we mapped our difficulties to complex engineering challenges and practiced design thinking, among other things. This report contains a detailed discussion of our project work. We believe that traveling generates a symphony for our body and mind, not only promoting our health but also increasing our creativity and productivity. We think that our project will make traveling easier and less stressful. However, we have plans to add additional features and improvements soon.

6.2 Limitation

We anticipate various restrictions in our project, which may vary from time to time. However, we will ensure that users receive a long-term, stable online application in the future. So, the limits we've identified are:

Limited user input: The system relies heavily on user input to customize travel plans. If users do not provide enough information or provide inaccurate information, thesystem may not be able to create optimal travel plans.
Data breaches: As the system will be collecting and storing sensitive personal information about users, it may be vulnerable to data breaches or cyberattacks.
Cost: Developing and implementing an intelligent tourism system can be expensive, and smaller businesses or destinations may not have the resources to invest in such systems.

6.3 Future Work

We have a vision to fulfill and compete with, and working hard to achieve it is essential to becoming the greatest. We intend to do larger-scale research in the future to ensure that our application is very advanced. So, here are some areas we wish to focus on in the future:

Integration with blockchain technology: Blockchain tech boosts security and transparency, especially in payments and data handling. Users trust the system more, and businesses get better data security and less fraud.

Augmented and virtual reality integration: These technologies make travel experiences more immersive and fun. Users can explore destinations differently, talk to virtual guides, and get live info about attractions and services.

Continuous learning and improvement: The system keeps getting better with user feedback and new data. It's always learning and improving to stay useful and up-to-date.

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[4] TRAVEL AND TOURISM MANAGEMENT SYSTEM 1Mr. Amal Davies; 2Mr. A.Ganesan; 3Dr. V.Kavitha 1 PG Student, 2Associate Professor, 3 Professor PG and Research Department of Computer Applications, HINDUSTAN COLLEGEOF ARTS AND SCIENCE Hindusthan Gardens, behind Nava India, Coimbatore

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