CeylonTourMate

Group 02

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Tourist Travel Agency Management System

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Dedication

We dedicate this project, *"CeylonTourMate - Tourist Travel Agency Management System"*

A Web-Based Solution for Efficient Tour Package Management and Customization, to all

individuals and organizations devoted to promoting tourism and enhancing

travel experiences in Sri Lanka.

This work is especially dedicated to the travel agents and service providers who strive to

deliver exceptional experiences, the tourists who inspire innovation through their journeys,

and our lecturers whose guidance and encouragement were instrumental

throughout this project.

May this system contribute meaningfully to improving efficiency, convenience, and

coordination in the tourism industry, making travel planning more seamless and

enjoyable for all.

Declaration

We hereby certify that this project report, titled ″ CeylonTourMate -Tourist Travel Agency Management System″, does not incorporate, without acknowledgement, any material previously submitted for a degree or diploma in any University/Institute, and to the best of our knowledge and belief, it does not contain any material previously published or written by another person or by ourselves, except where due reference is made in the text.

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Abstract

CeylonTourMate is a web-based system developed to streamline tour package booking, customization, and management for the tourism industry in Sri Lanka. Currently, many travel agencies rely on manual processes for handling customer requests, package coordination, and service management, leading to inefficiencies. This system offers digital tour package management, secure online booking, customer and agency dashboards, and real-time communication between tourists and agencies. By enhancing accessibility, transparency, and efficiency, CeylonTourMate aims to modernize travel operations and improve the overall experience for both tourists and travel service providers.

Acknowledgment

We would like to express our sincere appreciation to all those who supported us in the preparation of this proposal.

First, we extend our heartfelt thanks to our **lecturers and academic supervisors** for their continuous guidance, valuable suggestions, and encouragement throughout the development of this project. Your insights have been vital in shaping the objectives and direction of **CeylonTourMate**.

We also acknowledge the contributions of **travel agencies and tourism professionals** whose existing practices and challenges inspired the development of this system. Their dedication to enhancing the tourism experience in Sri Lanka motivated us to create a more efficient and digital solution.

Our gratitude also goes to our **team members and peers** for their cooperation, creativity, and shared commitment, which played a major role in refining this proposal.

Finally, we extend our deepest appreciation to our **families** for their patience, understanding, and constant encouragement throughout this journey

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List of Acronyms

- API - Application Programming Interface

- HTML - HyperText Markup Language

- CSS - Cascading Style Sheets

- JS – JavaScript

- ER Diagram - Entity Relationship Diagram

Chapter 01 – Introduction

1.1 Introduction

This chapter outlines the foundation of our project, CeylonTourMate, a web-based system developed to simplify and digitalize the management of tour packages, bookings, and travel coordination for the tourism industry in Sri Lanka. The chapter begins by introducing the system and explaining the motivation behind selecting this domain. The growing demand for efficient and convenient travel planning highlighted the need for a platform that connects tourists and travel agencies through a single, user-friendly system.

We then present the aims and objectives of the project, which include enabling online tour package browsing and booking, allowing tourists to customize their travel plans, managing customer and agency data efficiently, and providing real-time communication between both parties. The chapter also defines the scope of the system, describing the functionalities available for tourists, travel agents, and administrators, while clarifying the limitations, such as the reliance on external service providers for transportation and accommodation arrangements

1.2 Introduction of the system

The Tourist Travel Agency Management System, titled CeylonTourMate, is designed to automate and simplify the overall operations of a travel agency through a centralized and user-friendly web-based platform. The system enables tourists to conveniently browse, book, and customize travel packages according to their interests, budget, and seasonal availability.

For the agency's administrators and managers, the system provides efficient tools to manage tour packages, hotels, vehicles, drivers, and customer information within a single integrated environment. This eliminates the need for manual coordination and reduces operational inefficiencies.

The primary goal of CeylonTourMate is to offer tourists a seamless end-to-end travel experience from airport pickup to final drop-off while empowering travel agencies to monitor, organize, and deliver services effectively. By bridging the gap between tourists and service providers, the system enhances convenience, transparency, and overall customer satisfaction within the tourism industry.

1.3 Motivation

The current operations of many travel agencies in Sri Lanka rely heavily on manual processes such as phone inquiries, and in-person coordination with customers and service providers. These traditional methods often lead to inefficiencies, miscommunication, and delays in managing tour packages and customer requests. Recognizing the growing demand for convenient, digital travel solutions, we were motivated to develop a web-based system that simplifies and automates these processes.

Our goal is to enhance the efficiency of travel agencies, improve customer satisfaction, and provide tourists with a more organized and transparent platform for planning their journeys. By introducing CeylonTourMate, we aim to modernize travel management and support the continuous growth of Sri Lanka's tourism industry.

1.4 Aim

The main aim of this project is to develop a web-based Tourist Travel Agency Management System, named CeylonTourMate, that automates and streamlines the operations of travel agencies while providing tourists with a convenient platform to browse, customize, and book travel packages. The system seeks to enhance efficiency, reduce manual workload, and ensure a seamless travel experience from planning to completion.

1.5 Objectives of the project

- Allow tourists to view and book travel packages online.
- Provide seasonal pricing and customizable options.
- Manage hotels, vehicles, and drivers through the system.
- Store customer and booking data securely.

1.6 Scope of the project

The CeylonTourMate system focuses on automating and managing the core operations of travel agencies in Sri Lanka. The system covers key functionalities such as tour package management, online booking, customer registration, and travel service coordination. It also supports the management of hotels, vehicles, and drivers to ensure smooth travel arrangements.

Tourists can browse and customize travel packages, while administrators and managers can oversee all bookings and agency operations through a centralized dashboard. However, external integrations such as payment gateways, airline systems, or third-party hotel databases are not included within the current scope.

The system aims to enhance convenience, transparency, and operational efficiency within the tourism sector, while maintaining a manageable and practical implementation boundary for travel agencies.

1.7 Methodology

The development of CeylonTourMate followed a user-centered and systematic approach to ensure the system is efficient, scalable, and easy to use. The Agile methodology was adopted to allow flexibility, continuous feedback, and improvements during development.

Requirements were gathered through discussions with travel agency staff and frequent travelers to understand booking, communication, and coordination challenges. These requirements were divided into functional (such as user registration, package management, booking, and admin dashboards) and non-functional (including usability, security, and performance) needs.

Figma was used for UI/UX design, and Draw.io was used to create use case and activity diagrams. The frontend was developed using HTML, CSS, JavaScript, Tailwind CSS, and React.js, while the backend was built with Node.js and MongoDB as the database.

Git and GitHub were used for version control, and testing included unit, integration, and user acceptance testing to ensure system reliability. ClickUp was used for project management to plan tasks, track progress, and maintain collaboration effectively.

1.8 Summary

In summary, CeylonTourMate was developed as a web-based system to digitalize and simplify the operations of travel agencies in Sri Lanka. The system allows tourists to browse, customize, and book tour packages easily while helping agencies manage bookings, hotels, vehicles, and customer details from a single platform.

By adopting the Agile methodology, the development process focused on user needs, flexibility, and continuous improvement. The use of modern technologies such as React.js, Node.js, and PostgreSQL ensured scalability, performance, and reliability.

Overall, CeylonTourMate aims to enhance efficiency, transparency, and convenience for both tourists and travel agencies, contributing to the digital growth of the tourism industry in Sri Lanka.

Chapter 02 – Analysis

2.1 Introduction

This chapter presents a detailed analysis of the CeylonTourMate system. It begins by examining existing travel agency management systems and their approaches to handling tour packages, bookings, and customer interactions. The chapter then identifies and defines the functional and non-functional requirements of the proposed system based on the needs of both tourists and travel agencies.

Finally, this chapter explains and justifies the selection of a suitable software process model that guided the development of CeylonTourMate, ensuring that the system is efficient, scalable, and adaptable to future enhancements.

2.2 Review of similar systems with References

Several systems have been developed to manage tourism and travel operations both locally and internationally. In Sri Lanka, most travel agencies still rely on manual or semi-digital methods, using spreadsheets or standalone software for package management and customer records. While some agencies maintain websites for showcasing packages, full automation of bookings, payments, and resource allocation remains limited.

Local Systems in Sri Lanka:

- **Sri Lanka Tourism Development Authority (SLTDA) Online Portal** – This platform primarily focuses on registering and licensing tourism service providers. While it provides access to tourism-related data and statistics, it lacks personalized travel package management or direct tourist booking functionalities.
- **Travel Lanka Tours Website** – Offers an online interface for viewing available tour packages and contacting agents. However, most operations, including customization and confirmation, are still handled manually through email or phone communication.

International Systems:

- **TripAdvisor Experiences** – Provides global tourists with access to bookable travel experiences, reviews, and itinerary planning. It integrates with multiple service providers and offers online booking, payment, and customer feedback options.
- **Expedia Travel Management System** – A comprehensive international platform offering end-to-end travel services, including hotel, flight, and tour package booking. It uses automated confirmation, customer profiles, and data-driven recommendations to enhance user experience.

These systems served as benchmarks for identifying essential features for **CeylonTourMate**, such as integrated tour package management, online booking and payment systems, customer profile handling, and automated communication tools. The comparison highlighted the need for a unified platform that caters to both tourists and administrators in the Sri Lankan travel industry

2.3 Identifying/Prioritization of the Functional and Non-Functional Requirements

Functional Requirements

1. **Manager**

    1.Update travel packages (Gold, Silver, Platinum).

    2.Assign drivers to tours and update their schedules.

    3.Update package prices based on season or customization.

    4.Approve, cancel, or modify tourist bookings.

    5.Add drivers to system.

    6.View and manage customer details and feedback.

    7.Manages hotel, transport, and destination details.

2. **Customer**

    1.Register and log in to the system.

    2.Browse available travel packages (Gold, Silver, Platinum).

    3. Customize travel packages (choose hotel, transport, destinations).

    4. Book selected packages.

    5. Provide flight details (number, date, time) for airport pickup.

    6.Receive booking confirmation and itinerary details.

    7. View booking history and manage profiles.

    8. Download details of tour package.

    9.Give Feed backs

3. Admin

1. Manage system users(Managers, Drivers, Tourists).

2. Manage package details.

3. View and generate reports (bookings).

4. Oversee all booking activities.

5. View feedbacks.

Non-Functional Requirements

o **Web Accessibility:** Accessible through modern browsers.

o **Security:** Role-based access and secure document handling.

o **Responsiveness:** Optimized desktops and tablets.

o **Usability:** Simple UI for all users with clear navigation.

o **Maintainability:** Easy to update categories, settings, and features.

2.4 Identifying the Suitable Process Model with a Justification

The **Agile methodology** was selected for the development of the **CeylonTourMate** system. Agile focuses on iterative and incremental development, which makes it ideal for projects that require continuous updates and feedback from users — such as a travel agency management platform that serves both tourists and administrators.

Key reasons for selecting Agile include:

1. **Flexibility and Adaptability:**

   The tourism industry often experiences frequent changes in travel trends, seasonal demands, and customer preferences. Agile allows developers to adapt quickly to these evolving requirements, ensuring that features like package customization or seasonal offers can be updated with minimal disruption.

2. **Enhanced Collaboration:**

   Agile encourages constant communication among stakeholders, including developers, administrators, travel agents, and end users (tourists). Regular feedback sessions ensure that the system remains aligned with real-world business processes and user expectations.

3. **Incremental Development:**

   The system is developed and delivered in small, functional segments (sprints). This allows early testing and user evaluation of features such as tour package browsing, booking management, and payment processing. Early feedback helps refine these components before moving to the next phase.

4. **Risk Reduction:**

   By reviewing and testing each module during every sprint, potential issues are identified and resolved early. This reduces the risk of system failure and ensures a stable, user-friendly final product.

5. **Continuous Improvement:**

   Agile's iterative approach supports ongoing improvements even after deployment. New functionalities like hotel integration, driver management, or feedback tracking can be added seamlessly in future iterations.

In conclusion, the Agile methodology is the most suitable choice for developing the CeylonTourMate system because it supports flexibility, collaboration, and continuous enhancement all of which are essential for a dynamic, customer-driven travel management platform.

2.5 Summary

This chapter presented a detailed analysis of the CeylonTourMate system. It began by explaining the purpose of the analysis and reviewing similar tourism management systems to identify best practices and essential features for digital travel solutions. The functional and non-functional requirements were defined and prioritized to ensure that the system meets both user and business expectations effectively. Additionally, the chapter justified the selection of the Agile process model, highlighting its flexibility, user-centered approach, and suitability for iterative development in a dynamic industry like tourism. Overall, this analysis forms a solid foundation for the design and implementation of a scalable, efficient, and user-friendly travel management system.

Chapter 03 – Design

3.1 Introduction

The Design section describes how CeylonTourMate will be structured and organized to meet its functional and non-functional requirements. It explains the system's overall architecture, key components (frontend, backend, database), data models, and interfaces, as well as UI/UX considerations and security measures. The design emphasizes modularity, scalability, and maintainability so the application can be developed, tested, and extended easily.

3.2 Relevant Design Diagram

3.2.1 Use Case Diagram

The Use Case Diagram of the CeylonTourMate system illustrates the interactions between the system and its primary users: Tourist, Manager, and Admin. Each role has specific responsibilities, and their interactions with the system are represented through various use cases.
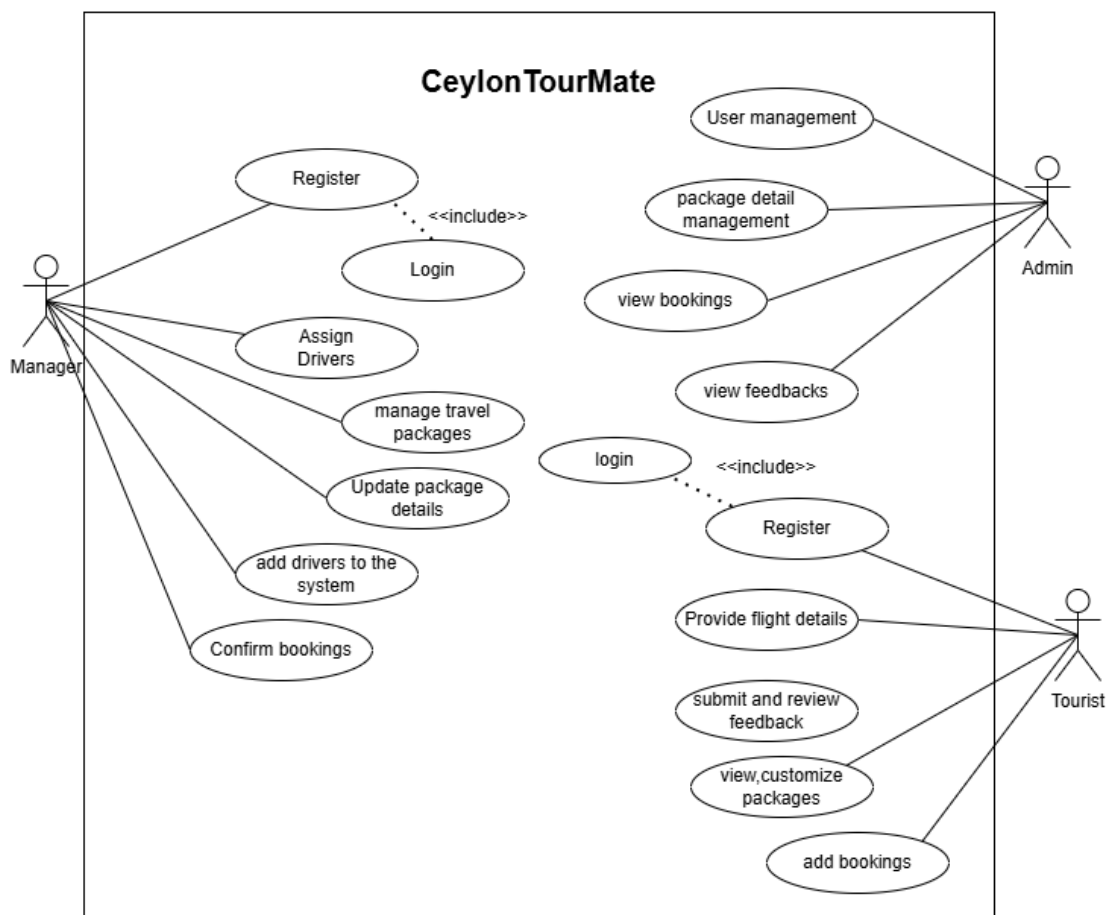

Figure 1 usecase diagram

3.2.2 Class Diagram

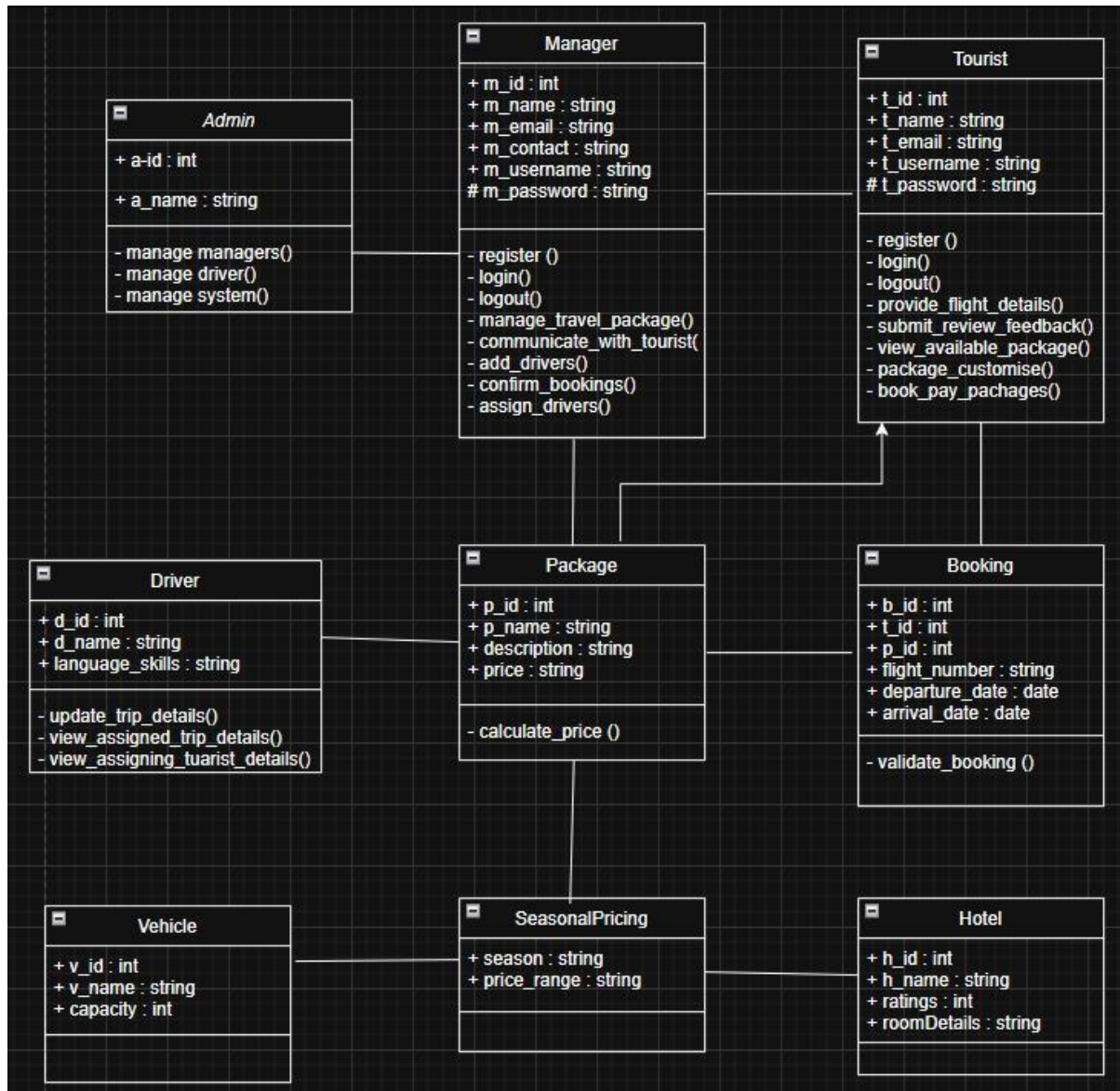The class diagram defines the core entities of the system and their relationships.
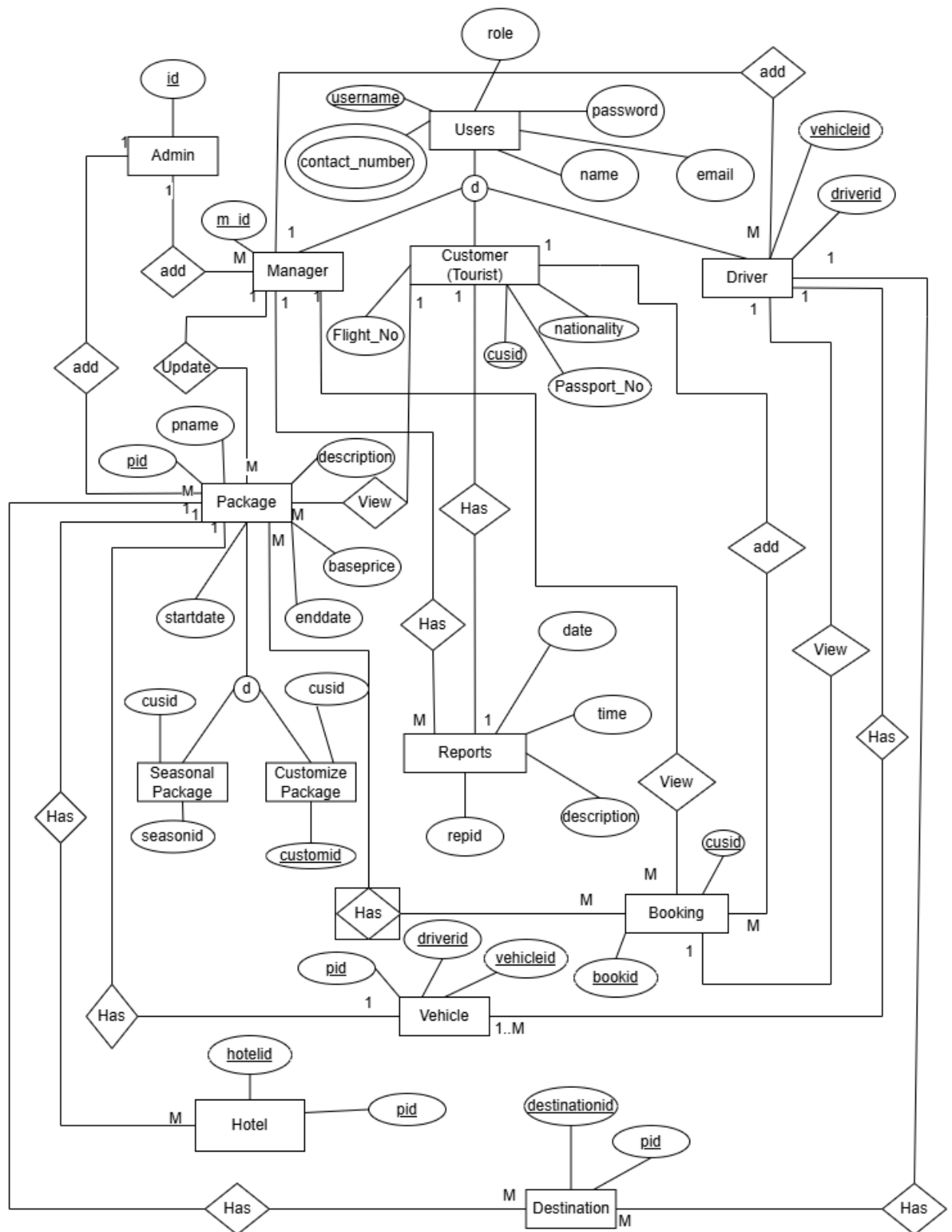

Figure 2 class diagram

3.2.3 ER Diagram

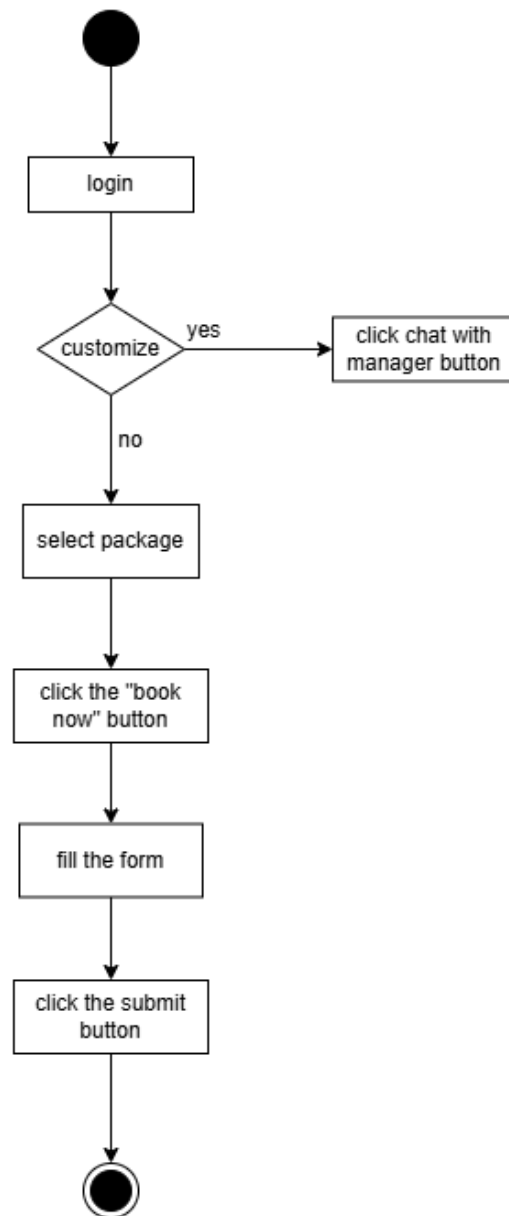*Figure 3 ER diagram*

3.2.4 Activity Diagram

Figure 4 Activity diagram
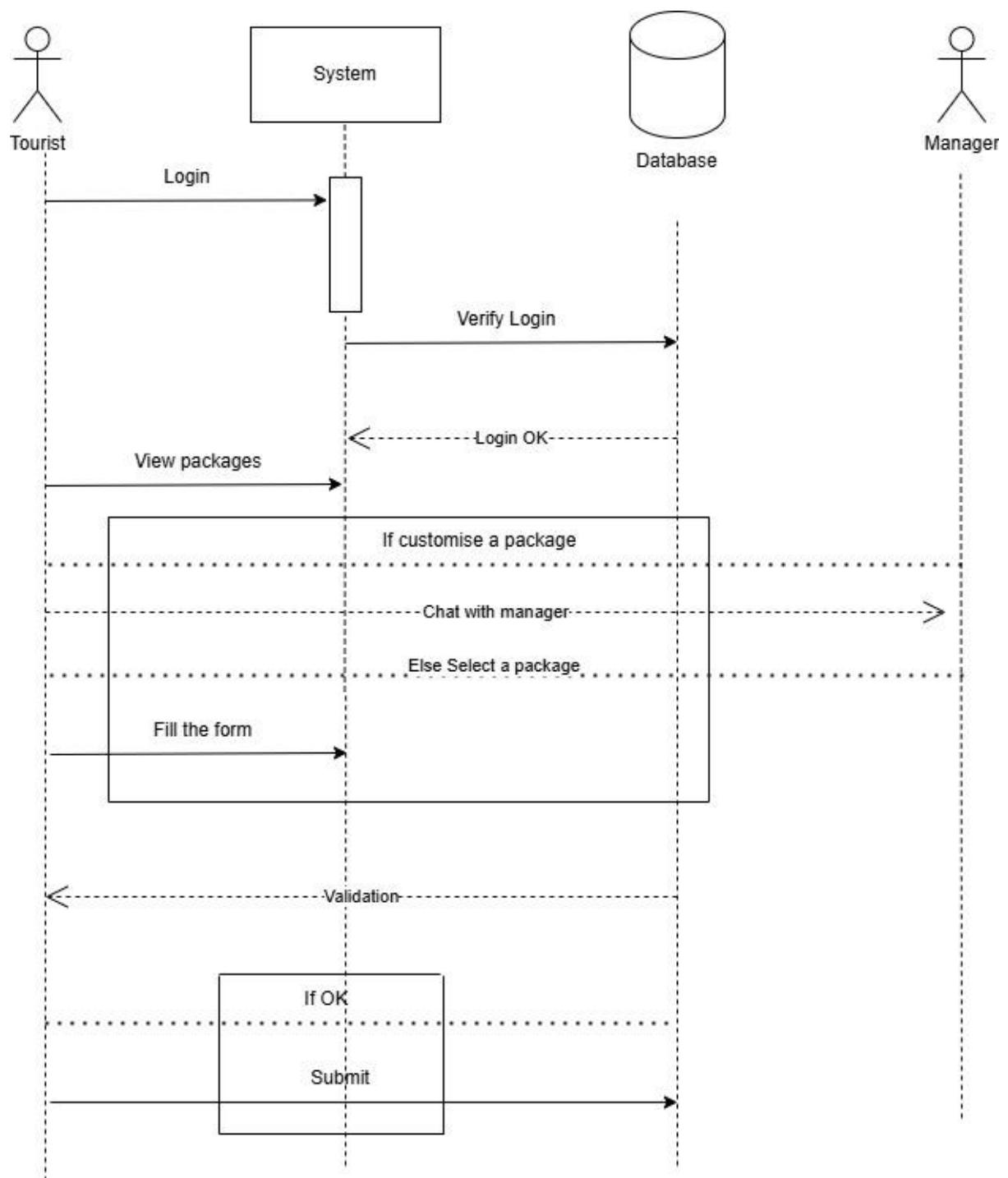
3.2.5 Sequence Diagram

Figure 5 Sequence diagram

3.3 User Interface Design with Wireframes

User Interface (UI) design focuses on creating intuitive and user-friendly interactions. For this project, wireframes were created using Canva, a simple and effective design tool. These wireframes visually represent the layout and navigation of the main features such as registration, login, license application, and dashboard screens. Using Canva helped quickly prototype and communicate the UI structure, ensuring that the final interface is aligned with user expectations and system functionality.

3.3.1 Design Considerations

The design of CeylonTourMate was guided by a user-centered approach, ensuring that each interface met the needs of its specific user roles: Tourist, Travel Agent, and Admin. The main considerations included:

- **Usability:** The interface is simple and intuitive, allowing even non-technical users to navigate the system easily without extensive training.
- **Role-Based Accessibility:** Different roles have distinct functionalities, so the UI adapts dynamically based on the logged-in user's permissions.
- **Responsiveness:** The system is accessible from desktops, tablets, and mobile devices, ensuring smooth use both in offices and while traveling.
- **Visual Clarity:** Consistent color schemes and clean layouts enhance readability and user experience.
- **Multilingual Support:** Interface elements are designed to accommodate both English and Sinhala, increasing accessibility for a broader audience.
- **Feedback & Error Handling:** Clear success and error messages guide users through processes such as bookings, package customization, and payment confirmation.
- **Scalability:** The design is flexible to accommodate future modules, such as analytics, reporting, or additional service integrations.

These considerations ensure that CeylonTourMate remains user-friendly, efficient, and adaptable to evolving travel industry needs.

3.3.2 Design Decisions

1. Navigation Structure: A top navigation bar provides primary links (Dashboard, Tour Packages, Bookings, Reports), while a role-specific side menu allows quick access to actions relevant to Tourists, Travel Agents, or Admins.
2. Color Scheme & Branding: Shades of blue and green were chosen to represent trust, professionalism, and a sense of travel and nature.
3. Form Layouts: Booking, package customization, and customer registration forms were designed in a multi-step format to simplify data entry and prevent user overload.
4. Icons & Visual Cues: Font Awesome icons were integrated to improve navigation, highlight key actions, and guide users intuitively through processes like booking confirmation or payment status.
5. Responsive Grid System: Tailwind CSS and React components were used to ensure consistent layout and responsiveness across desktops, tablets, and mobile devices.
6. Interactive Components: JavaScript and React features support interactive functionalities, such as real-time package search, booking status tracking, calendar-based itinerary management, and filtering tour options by price, location, or date.

Chapter 04 – Implementation

4.1 Introduction

This chapter details the technical implementation of the **CeylonTourMate** system.

- o **Frontend Implementation:**
  The frontend was developed using **HTML, CSS, JavaScript, Tailwind CSS, and React.js** to ensure a responsive and visually appealing user interface. The UI adapts to different user roles—**Tourist, Travel Agent, and Admin**—providing each with specific functionalities and an intuitive navigation flow.

- o **Backend Implementation:**
  The backend was implemented using **Node.js**, which handles all server-side logic, authentication, API routing, and communication with the database. The system ensures secure data handling and efficient processing of bookings, package management, and user interactions.

- o **Database:**
  PostgreSQL is used as the database management system to store structured data such as user profiles, tour packages, booking details, vehicle and hotel information. The schema design maintains **data integrity** and supports complex queries for reporting and analytics.

- o **Key Functional Modules:**
  - ✓ User Registration & Login (Role-Based) – Allows users to register and log in according to their roles: Tourist, manager, or Admin.
  - ✓ Tour Package Management – Enables travel agents to create, edit, and manage packages based on destinations and seasons.
  - ✓ Booking & Payment Module – Allows tourists to book and customize packages, with integrated payment tracking.
  - ✓ Admin Dashboard – Gives administrators complete control over users, bookings, and system analytics.

4.2 Gantt Chart

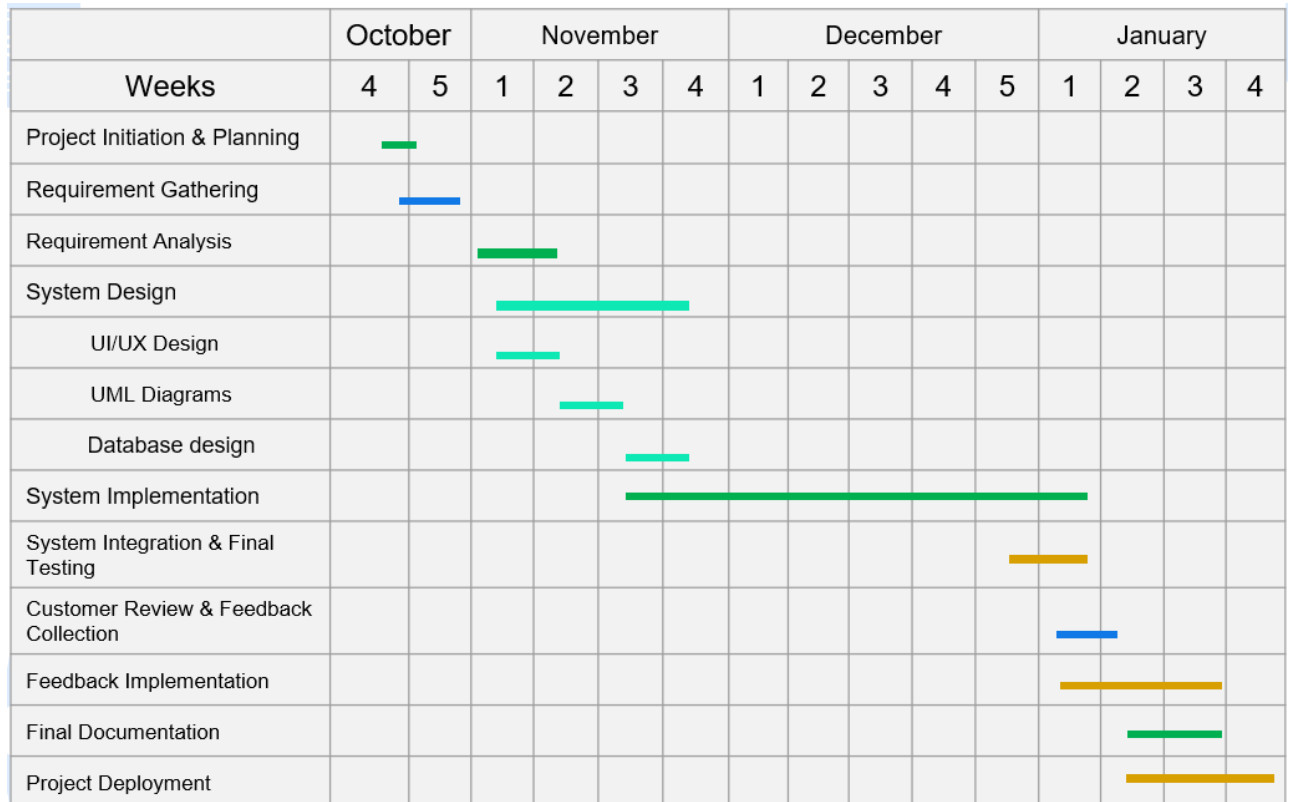|	October		November				December					January			
Weeks	4	5	1	2	3	4	1	2	3	4	5	1	2	3	4
Project Initiation & Planning	▬														
Requirement Gathering		▬													
Requirement Analysis			▬												
System Design			▬▬▬▬												
UI/UX Design			▬												
UML Diagrams				▬											
Database design					▬										
System Implementation						▬▬▬▬▬▬▬▬									
System Integration & Final Testing											▬				
Customer Review & Feedback Collection												▬			
Feedback Implementation												▬▬▬			
Final Documentation													▬		
Project Deployment													▬▬▬		

Figure 6 Gantt chart

Chapter 05 – Conclusion

This project aimed to simplify and digitalize the operations of travel agencies in Sri Lanka through a centralized web-based platform **CeylonTourMate**. The system allows tourists to browse, book, and customize travel packages while enabling travel agents and administrators to manage packages, bookings, vehicles, hotels, and customer information efficiently. By automating manual processes, improving coordination, and enhancing communication between tourists and agencies, the system ensures a smoother and more transparent travel experience.

The successful implementation of features such as role-based access, tour package management, and booking automation highlights the system's effectiveness and real-world applicability. Ultimately, CeylonTourMate provides a scalable and reliable foundation to support the digital transformation of Sri Lanka's tourism industry, fostering greater convenience, accessibility, and operational efficiency for all stakeholders.

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