

Project Proposal Document



Title of the Project: Travel management system for Green Holiday Center

Module code: IT 2080

Campus: Malabe

Batch: Weekend batch 1.1

Group: TW29

Submitted on: 03.05.2023

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1. Background

1.1 Green Holiday Center



Figure 1: Green Holiday center logo

Green Holiday Center is a Travel Agency that was established in 2011, operating under the Sri Lankan Tourism Development Authority. The company has built strong business connections with Europe and Asia, which have expanded into many other markets including the Middle East and Australia. Their consistent success in attracting thousands of tourists to Sri Lanka has resulted in the company continuously gaining profits. In addition to increasing productivity, Green Holiday Center also helps to promote Sri Lankan culture through its tourism services. [1]

Services provided by the company:

- Provide Hotel and Accommodation
Company has many connections with well reputed hotels and restaurants in the country.
- Provide Transport
Transport requirements of clients are fulfilled through own vehicles and also outsourced agreements with leading transportation providers in country.
- Provide Tour guides.
This is a crucial service provided by the company, providing valuable service to travelers that enhance their overall travel experience. Tour guides are essential for travelers to have a safe, informative, and enjoyable travel experience. Therefore, company has outsourced tour guides which provide a quality service.
- Provide Other services.
 - Camping sites and equipment
 - Safari jeeps
 - Specialty restaurants
 - Water sports suppliers
 - Diving centers
- Promote inbound travel to Sri Lanka
Some common places that tourist requests include,

○ Bentota	○ Colombo
○ Nuwara Eliya	○ Sigiriya
○ Polonnaruwa	○ Hikkaduwa
○ Kandy	

Current system of Green Holiday Center:

Clients have to go through an agent to place a booking. After placing a booking Green holiday center sends a service voucher to relevant hotels to know current rating. After knowing the hotel rates company prepare other invoice including the total cost for hotels and

accommodation, transport, tour guide and etc. Finally, they send this invoice with a confirmation letter. All of these documents are prepared manually.

Further, company maintain a database including their required details such as hotels, drivers, vehicle, tour guiders and etc.

2. Problem and Motivation

2.1 Problem

1. Economic crisis in the country

Currently, Sri Lanka is facing an economic crisis due to a combination of factors such as the impact of the COVID-19 pandemic, the country's high debt burden, and a shortage of foreign exchange reserves. The economic crisis in Sri Lanka has had a significant impact on the country's tourism industry. Additionally, Sri Lanka has experienced a negative impact on its tourism industry due to political instability and security concerns in recent years. As a result, company faces mainly two problems such as,

- Loss of tourists

The instability of economy, political instability and the security concerns mainly led to decrease the number of tourists drastically. Further, Sri Lanka faces competition from other popular tourist destinations in the region, such as Thailand and Bali, which offer similar attractions and services. This also act as a reason for reducing the number of tourists company gets. The high cost of travel and tourism in Sri Lanka compared to other destinations has also contributed to a decline in tourist arrivals. The loss of tourists affected the company by drastically decreasing the profit they gained. Therefore, company is looking for new innovative strategies to attract tourists.

- Increased cost

The shortage of foreign exchange reserves and import restrictions have made it difficult for the company to access essential inputs such as fuel, medicine, and raw materials. This has led to increased operating costs and reduced competitiveness of the industry. So this company is planning to limit their staff to a small number and reduce the operational cost as much as they could.

2. Prepare all the documents and maintain the database manually.

Company prepares all the relevant documents manually which increase the number of laborers required. Which is again caused to increase the operation cost of the company.

3. Clients have to reach the organization manually through agent.

2.2 Motivation

We propose a web application for Green Holiday Center in order to overcome the drawbacks of current system. From the proposed web application,

1. Clients can place a booking by their selves.
In proposed web application we have provide online tour booking system. Therefore, clients do not have to go through an agent to place a tour booking. Which will be helpful to save client's time. Web application increase the flexibility by, letting clients directly access the web application from wherever they want, from any device at any time, and letting them complete the booking with their preferred choices. And also clients can be able to edit their bookings or cancel their bookings whenever needed. Furthermore, web application is easy to use with the user-friendly interface and instructions we provide.
2. Reduces the operational cost of the organization.
In current system in Green holiday center, they prepare all the required documents such as service vouchers, invoices and confirmation letters manually. And database also they maintain manually. Which will consume time and increase the need of employers. But with the proposed web application, we have provided a function which can generate reports. In result, it saves time, decrease the need of employers. In turn, which will help to limit their staff to a small number and reduce the operational cost as they required.
3. Helpful to attract tourists
Nowadays everything is moving with internet because it is convenient, speed, cost effective and efficient. The user-friendliness of the application, special offers and promotions, social media integration, and review and rating will probably act as an aid to attract tourists.
4. Online database handling
In the current context, database is maintained manually. It is time consuming, can be prone to human errors, limited accessibility and difficult to scale. With the use of web application, Green holiday Center could be able to maintain their database efficiently. It does not consume much time. It can not have human errors. It can be accessed remotely 24/7. It can be scale easily and handle growing amounts.
5. Secure
In the current system in Green Holiday Center, there is a possibility to loss the data because of physical damage, human errors, natural disasters, theft or loss. But with the proposed web application, everything is stored in a online database and only authorized users can be access the data. So, the possibility to loss the data is minimized.
6. Accessibility
For both clients and Green holiday center employees can access this web application at anytime at anyplace. Specially for employees, they could be able to work from home because they can access the necessary data easily.
7. Better tracking and reporting
The web application provides numerous statistical data such as about users, online bookings, drivers, vehicles, hotels, guiders and etc. That will be helpful to administration of the company to take necessary strategic decisions to improve the profitability of the organization.

3. Aim and Objectives

3.1 Aim

“Provide a comprehensive and user-friendly platform for managing all aspects of travel-related activities.”

3.2 Objectives

1. Develop a booking management system that allows users to search and book various travel-related services, including transport, accommodation, tour guides and other services.
2. Integrate a transportation management system that provides users with information about different transportation options, including cars, vans, jeeps, safari jeeps and etc.
3. Introduce a tourist management system that helps the company manage customer information and interactions.
4. Introduce a guider management system that helps the company manage guiders information and interactions to provide company’s customers a better service.
5. Introduce a hotel management system that helps the company manage hotel information and interactions to provide tourists a better accommodation facility.
6. Introduce other service management system that helps the company manage other service information and interactions.
7. Introduce a tour management system that helps the company manage tour details to get necessary decisions.
8. Provide users with real-time travel updates.
9. Ensure the software system is secure and compliant with data privacy regulations.
10. Offer 24/7 customer support to ensure users can get assistance whenever they need it.

4. System overview

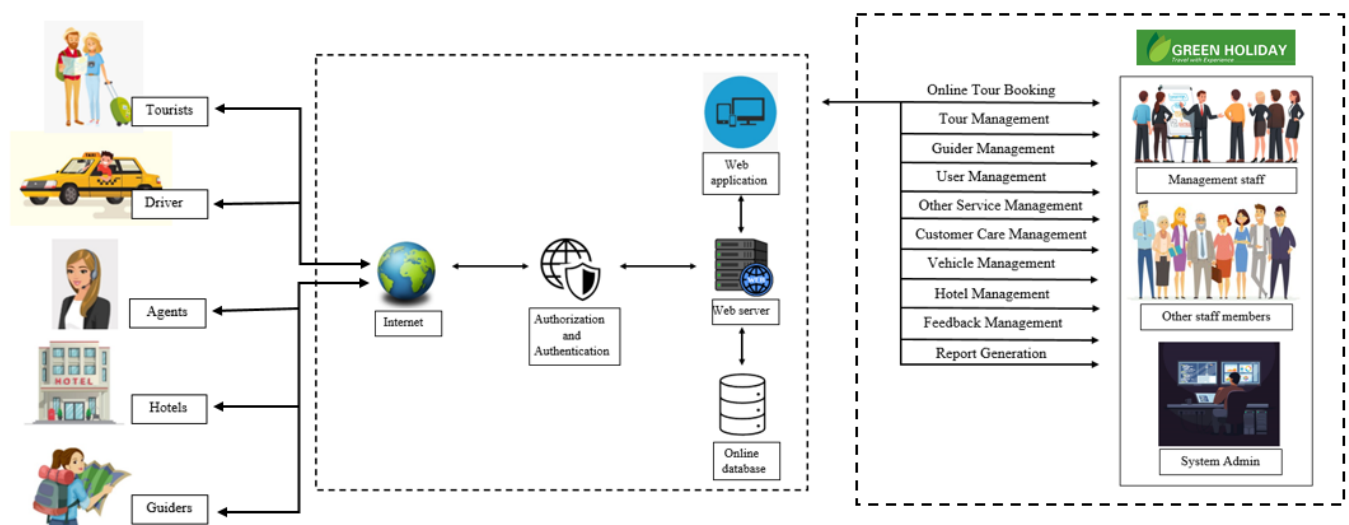


Figure 2: System Overview

4.1 Functional requirements

4.1.1 Online tour booking

Online tour booking is a sub system which comes under Green holiday center's travel management system. The aim of this feature is to provide a comprehensive and user-friendly platform for managing all aspects of travel booking related activities. The online tour booking comprises with tour details viewing, tour booking, editing and canceling of tours, past bookings and update viewing and analytical data generation.

Tour details viewing-

Tour details provide essential information about the tour they are embarking on. Tour details can help tourists to plan and prepare for their trip, ensuring that they have a comfortable and enjoyable experience. One of the important tour detail that tourists may need to know is the places to be visited and the activities to be undertaken during the trip. Green holiday center provides tours for numerous places. From this feature tourists can know what are the places that they can visit, accommodation details, transport details, tour guides and other service details. In addition, tourists can know the reviews, ratings and comments for each place and service as well.

Having access to these tour details can help tourists plan and prepare for their trip, making it a more enjoyable and hassle-free experience. It also helps to ensure that the tourist's expectations are met and that they have all the information they need to make informed decisions during their trip.

Tour booking, editing and cancelling –

Online booking has become increasingly important in the travel industry as more people use the internet to plan and book their trips. With the clear idea they got by accessing the detailed information about the tours including itineraries, prices and customer reviews, tourists can book tours from the comfort of their own homes or while on the go by using their mobile phones or any other device, saving them time and hassle. From this feature tourist does not have to go through an agent to book the tour which will be more helpful to tourists by saving their limited time. Furthermore, tourists can get discounts based on the number of participants in a tour booking.

If the tourists want to edit the details they can edit them in this platform. And they wish to cancel the booking that can also be done by using this platform.

Past bookings and update viewing –

Once they place a booking it is submitted to Green Holiday Center. They will confirm the booking by checking some details. Tourists can check for any updates by referring this feature. And previous bookings also can be viewed in this feature.

Analytical data generation –

Analytical data is crucial for web applications as it provides insights into user behavior and helps companies make data-driven decisions. From this feature management staff can get a clear understanding of what are the most preferred places, from what county place many number of bookings, most requested guiders, and transportation method, and most visited hotels and restaurants. This analytical data helps the company to evaluate the effectiveness of their marketing campaigns, to make decisions about strategy and growth. And Analytical data can help companies understand their position in the market by providing information about competitors, including traffic and user engagement metrics, allowing companies to identify opportunities for improvement.

In conclusion, it is true that online tour booking function is the main function among other functions in the proposed web application because all other functions rely on this function. This function is important because it provides convenience, access to information and enable tourists to place a tour booking by saving their effective time.

4.1.2 Tourist management

Tourist management is where we are managing tourist in our system. System that allows tourists to create an account and manage their personal information.

The registration process typically involves creating a username and password, providing contact details such as email address and phone number, and agreeing to the system's terms and conditions. Once registered, tourists can access various features of the system, such as search and booking, payment and billing, and customer support.

Profile management allows tourists to update their personal information, including contact details, preferences, and booking history. For example, they may update their address or phone number if they have moved or add a preferred mode of transportation or room type to their profile.

Overall, Register and profile management is an essential feature of a Tourist Management System that enables tourists to create and manage their accounts, and provide necessary information to access various services and make bookings.

4.1.3 Guider management

Guiders perform grant functions in the travel management system. Guide management system is a software solution that efficiently and accurately performs tasks such as getting guide information related to the selected tour, managing guides, viewing selected tourists and related tours, providing feedback and experience to the guides. This can increase the productivity of all tourists and trips of the green holiday company. This system mainly focuses on the tasks of the guide.

The guide can register in the system after providing all his details. At the time of registration, guider must submit the guider's personal information, qualifications, and

identity certificates. Guider can see the profile of the guider after registration. The guide can edit / update their profile if they want. After successful registration every guide will get a unique number and profile and can login again using that unique number. The guide will get the tours only around the district provided by him.

After the tourist has been given the tour, the guide in the respective tourist area is informed by a message that the tour has been selected. According to the wish of the guide, the relevant tours can be obtained. When the tour is taken by the guide, it is notified to the traveler by a message. For every trip the guide takes, the guide gets one point. At the end of the month the guide will get additional money based on those points.

After the tour, the traveler can provide feedback about their experience and the guide. The guide is rated by the feedback given by the traveler about the guide. At the end of every month a special incentive is given to the top-ranked guide. Warnings are issued to guides who are at the bottom of the ranking. After 3 warnings, a special investigation will be conducted on the guide and necessary action will be taken.

This function enables the organization, the guide and the traveler to provide the efficiency, reliability, and convenience expected by the organization.

4.1.4 Hotel details management

Hotels management system is comprehensive software platforms that enable hotels of all sizes to manage their operations efficiently and smoothly, from booking and room management to marketing, billing, and guest experience. This system is designed to enhance the productivity and profitability of hotels within green holiday center.

Both hotel owners and Green Holiday centers have the ability to register a new hotel within the Green Holiday Hotels Management System. Upon successful registration, each hotel is granted a unique login, which allows hotel owners to efficiently update their hotel details. Additionally, if there are no upcoming reservations, hotel owners may choose to remove their property at their discretion.

Hotel owners can be able to add new rooms and update hotel database whenever they add new rooms to their property. They also have the privilege to update room availability information within the system.

4.1.5 Vehicle management

Vehicle management system is comprehensive management system /platform that related all travel management agencies, from the online reservation method. In this vehicle management system combine & work as cross platform with green holiday center. Not only green holiday customers but also each and every who want to vehicle for any tour, they can receiver vehicle as a all-in-one platform which is green holiday center.

Firstly, each tour vehicle wants all customer should be register from the vehicle management compartment using the after login green holiday web site. After then each of them can receiver any vehicle according to they wish choosing the vehicle glary/compartment. Then they can receiver the good experiences, satisfy driver from the driver profile background if they wish. If someone want to join as tour driver, he first submit a form to green holiday center & after registered/ part travel agencies chosen, center is assigned to driver management system. This assign also can do each agence but most probility done by green holiday center.

Tour agence can update vehicles or add new vehicles or remove each agreement expire vehicle.

4.1.6 Other service management

Create: This function involves creating new entries for the various services that tourists may require, such as camping tents and equipment, jeeps, or any other relevant services. For example, if a tourist wants to rent a camping tent, a new entry can be created in the system with details such as the type of tent, availability, rental fee, etc.

Read: This function involves retrieving information about the services that are available for tourists to use. For example, a tourist may want to know about the different types of jeeps available for rent and their features. The system should be able to provide this information quickly and accurately.

Update: This function involves modifying or updating the details of the services that are available. For example, if a camping tent becomes unavailable due to damage or maintenance, the system should be updated to reflect this so that tourists do not attempt to book an unavailable service.

Delete: This function involves removing or deleting entries from the system. For example, if a certain type of jeep is no longer available for rent, it should be removed from the system so that tourists do not attempt to book it.

4.1.7 Loyalty and rewards

A rewards program can be a valuable addition to our Green Holiday Online Tour Management System as it can incentivize customers to use the platform repeatedly and encourage customer loyalty. By offering rewards points for every booking made through the Green Holiday System, customers/guests are more likely to choose the platform over competitors as they are being recognized and rewarded for their loyalty. This, in turn, can lead to increased customer retention rates and higher overall revenue for the business. The customers can get discount offers by using these points on his/her next booking via our system.

For this feature there will be a form for Admin to edit no of points which are received per booking or per customer. After that admin can save this NoSQL database. After customer is done his/her first booking, customer will be received a promo or coupon code for his/her email. On next booking he/she can use this copon code to apply discounts.

And, I hope to add these points on his/her profile as well. Which means, when customer is going to book his/her next booking, customer can select **Green Holiday Points** as the payment method.

4.1.8 Customer care service and Agent management

Customer Care Service Management: A customer may encounter various issues when travelling therefore a customer service is much required .

Create: A system admin needs to add the details of the customer service agent to the system. Therefore this function includes collecting data of the agent through a form and storing it in the agent/employee database.(data collected e.g. name, employee id, phone number, Issue specialization).

Read: This function is mainly for customer service as described below as a secondary function the system retrieves already entered data into the system and displays the agent's data as a table to the admin.

Update: Once an employee/Agent is in a system their details need to be updated rather than deleted and re-entered. For example, one agent can specialize solving two types of issues over time so they will need to be updated with time(e.g. Travel and Booking).

Delete: This function includes selecting an agent to be deleted from the system. Only used when an employee is fired or has left the company.

For all of the above functions to work, the primary key column employee id is used so that we can make sure no duplicate records are made or the wrong employee is deleted from the system (e.g., employees with the same name).

Customer Care Service:

The system shows dropdowns for a customer to select their issue from (e.g., Transport issue, Booking Issue, other). When this information is submitted system will check the issue submitted by customer against the specialization data of agents already in the system and display the names and the phone number of the customer service agent to the customer/tourist. This read function is the primary function.

4.2 Non-Functional requirements

- Security
- Compatibility
- Availability
- Usability
- Performance
- Reliability
- Response time
- Maintainability
- Accessibility

4.3 Technical requirements

- Device to access web application
- The programming technology – MERN stack
- The operating system – Windows

5. Literature review

5.1 Similar Solution

Booking.com

Established in 1996, Booking.com is a renowned application widely adopted worldwide, recognized as the largest online travel agency. To optimize usability and efficacy, it is accessible as a web, desktop, and mobile app, allowing users to utilize it regardless of their location or time. Additionally, the app is available in 43 languages to enable users to navigate it in their preferred language. [2]

Booking.com simplifies travelers' experience by providing accommodation and transportation options. Hotels and travel service providers can also utilize the app to promote their offerings. The app features an extensive selection, competitive prices, immediate confirmation, zero reservation fees, secure booking, and 24/7 customer support. [2]

5.2 Specialty of proposed solution

Proposed web application is specifically designed to mitigate the problems that Green Holiday Center have. Such as, loss of tourists, increased expenditures, and manual document preparation. Booking.com also can be used as a solution for this problem for some extend but Booking.com cannot completely solve the problem.

Booking.com has established itself as the leading online travel agency with a vast network of hotels and transportation providers, the proposed web application aims to go beyond the conventional offerings of Booking.com. The proposed app provides a comprehensive solution that encompasses not only lodging and transportation services but also personalized tour guides and other ancillary services. Moreover, the app equips management staff with analytical tools to make data-driven decisions and generate custom reports tailored to the organization's needs.

In terms of customer engagement, both Booking.com and the proposed web application offer discounts, promotions, and personalized recommendations to enhance customer satisfaction and loyalty. A special feature of this application is, this application generates some reports which is specific to this organization.

In conclusion, Booking.com mainly beneficial to their clients which are tourists, hotels and transport providers. But this proposed web application not just beneficial for their clients, it is beneficial to administration staff as well.

6. Methodology

6.1 Requirement engineering method

Requirement engineering is the process of eliciting, analyzing, specifying, validating, and managing the requirements of a system or software application. In this step we did,

1. Requirement elicitation and analysis
 - a. Requirement discovery:

Requirements for the application was mainly identified by interviewing the client. And observing the reports and documents was also helpful to requirement gathering.
 - b. Requirement classification and organization:

Based on the discovered requirements we classified them as functional, non-functional requirements and technical requirements.
2. Requirement specification:

We specified the requirements in natural language. And we used some graphical notations such as user-stories.
3. Requirement validation

6.2 Design method

Software design is the process of conceptualizing, planning, and specifying the software architecture, components, interfaces, and algorithms of a software system. In this phase we are going to use case diagrams, activity diagrams and use case scenarios to

understand the system and interactions. To model the scenario we use Draw.io, StarUML, and Mockflow.

6.3 Development tools and Technologies

Tools •

- Visual Studio Code as the coding platform
- Postman to test the backend
- Clickup for project management

Technologies

- MERN stack (MongoDB, Express, React, Nodejs)
- GitHub for version control

6.4 Testing methods

Each unit of this application is tested by black box and white box testing. After integration, integration test is done. After that system testing take place. Finally, acceptance test will be held to confirm that application fulfills clients requirements.

6.6 Gant Chart

Task	February				March				April			
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Finding a client												
Gathering requirements												
Requirement analysis												
Functionalities												
Creating project charter												
Charter approval												
Scrum activity												
Creating proposal												
Proposal presentation												
UI sketch												

BSc (Hons) in Information Technology

IT2080

Information Technology Project

Conceptual database												
Physical database												
Implementation												
System test												
Final report												

6.7 Work Breaking Plan

Student id	Name with initials	Work allocated
IT21200892	Kariyapperuma M. V	<ul style="list-style-type: none"> Online Tour Booking
IT21211478	Ekanayake E.M.P.B	<ul style="list-style-type: none"> Guider Management
IT19958484	Ananda A.M.S.C	<ul style="list-style-type: none"> Other Service Management
IT19028538	Nonis S.L.M	<ul style="list-style-type: none"> Tourist Management
IT21180620	De Silva S.K.S.	<ul style="list-style-type: none"> Hotels management system
IT21177132	Madhuranga M.A.H	<ul style="list-style-type: none"> Vehicle management system
IT21119330	Obeyesekere S.S	<ul style="list-style-type: none"> Customer Care Service and Agent Management
IT21376290	Shiwanthika D.N.H.	<ul style="list-style-type: none"> Loyalty and Rewards System

7. References

- [1] "Green Holiday Centre," [Online]. Available: <https://www.greenholidaytravels.com/>.
- [2] "Booking.com," [Online]. Available: <https://www.booking.com/>.