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THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF ENGINEERING TECHNOLOGY
BACHELOR OF SOFTWARE ENGINEERING
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EEY4189 Software Design in Group

Project Proposal

Group Name :- HUWR_1

Group Members - S number - Reg number

s23010378 - 223605800

S23010417 - 123594138

S23010921 - 623607947

S23010444 - 123604144

s23010499 - 523606487

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Introduction

Tourism has become one of the fastest-growing sectors globally, contributing significantly to national economies and cultural exchange. As travel preferences shift toward digital convenience, tourists now expect seamless, customized, and easily accessible trip planning tools. However, existing solutions often fall short by offering fragmented services some focused only on bookings, others on reviews, or navigation leaving travelers juggling between multiple platforms.

To bridge this gap, we propose the development of a comprehensive tourism application designed to serve as an all-in-one travel companion. The website will allow users to explore categorized tourist attractions (such as ancient sites, beaches, wildlife zones, and cultural landmarks), generate personalized itineraries, receive real-time updates, and manage transportation and accommodation options directly from their devices.

With a user-centric design and modern technologies like map integration, recommendation engines, and optional augmented reality features, the proposed app aims to enhance how travelers discover, plan, and experience destinations. This project aligns with the growing demand for digital transformation in tourism, ultimately improving convenience for travelers and boosting local tourism businesses.

Background

Tourism is a key contributor to economic growth and cultural exchange in many countries, including Sri Lanka. However, the current travel planning experience remains fragmented and inefficient for many tourists. According to the Sri Lanka Tourism Development Authority (SLTDA), while the country welcomed over 1.3 million tourists in 2023, feedback consistently highlights issues such as lack of centralized travel information, limited access to local insights, and challenges in navigating between destinations.

Most travelers rely on multiple apps and websites for planning—using one platform for hotel booking, another for transport, and yet another for finding attractions. This disconnected system not only causes confusion and inconvenience but also leads to missed travel opportunities, especially in lesser-known regions. Tourists often skip hidden gems due to poor visibility or a lack of reliable information.

The absence of such a digital solution results in missed economic and promotional opportunities for the country. A well-designed tourism website would not only improve visitor satisfaction but also strengthen the tourism ecosystem by supporting local entrepreneurs and ensuring a more organized, informed travel experience

Problem Statement and Project Objectives

Problem Statement

Despite the growing number of tourists visiting Sri Lanka each year, many travelers face challenges in planning, organizing, and experiencing their trips efficiently. The main issues arise due to the absence of a centralized, user-friendly tourism platform that integrates all aspects of travel destination discovery, itinerary generation, accommodation booking, transportation planning, and real-time updates.

Currently, tourists rely on multiple disconnected tools, such as Google Maps for navigation, separate websites for hotel bookings, and general search engines or blogs to learn about places. This disjointed experience often leads to confusion, inefficiency, and missed opportunities, especially when it comes to exploring lesser-known attractions or connecting with local services like guides, restaurants, and cultural activities.

Moreover, there is a lack of personalized recommendations in existing systems. Many platforms do not consider user preferences such as budget, travel style (adventure, relaxation, culture), or time constraints when suggesting destinations or activities. As a result, travelers may end up with poorly planned trips or underwhelming experiences.

From a national perspective, this gap also means missed revenue for local businesses and under-promotion of Sri Lanka's diverse tourism assets. In a digital age where convenience and personalization are key, the lack of an all-in-one solution significantly limits the potential of the tourism sector.

Project Objectives

1. To design and develop a tourism application that allows users to plan personalized trips by selecting destinations based on interest categories, budget, duration, and preferred activities. The website will generate optimized itineraries and provide real-time information such as weather, traffic, and reviews.

2. To integrate booking systems, maps, and local services into a single platform, enabling users to access transport options, accommodation, restaurant recommendations, and local tour guides all from within the website. This will streamline the travel process and enhance user experience while promoting local businesses.

Introduction to Similar Type of Systems

Several applications currently exist that assist travelers in planning and managing trips. These aapplications generally offer features such as destination search, accommodation booking, navigation, and reviews. However, most of them focus on individual services rather than offering fully integrated experience. Some examples from both global and local contexts highlight the need for a more comprehensive solution.

International Examples

- **TripAdvisor** - Offers user reviews and rankings for hotels, restaurants, and attractions. While helpful for decision-making, it lacks integrated trip planning and booking features.
- **Google Travel** - Provides itinerary suggestions based on previous bookings and searches but lacks local insight and real-time interaction with regional service providers.
- **Booking.com & Airbnb** - Focus heavily on accommodation but don't offer destination guidance or transportation planning.

Sri Lankan Tourism Websites & Apps

1. **Visit Sri Lanka – Travel Guide (by Sri Lanka Tourism)**
   This app provides a basic directory of tourist attractions across the country. While it includes location data, descriptions, and images, it lacks interactivity, personalized itinerary planning, or booking features.
2. **TripAdvisor**-one of the world's largest travel websites, providing travelers with access to millions of reviews, photos, and ratings for hotels, restaurants, attractions, and experiences. It helps users plan trips by comparing prices, booking accommodations, and discovering popular destinations
3. **Yamu**
   A popular app for discovering food, nightlife, and events in Colombo and nearby areas. While it serves well for local recommendations, it is not a travel planning app and does not cater to tourists outside the capital.

Identified Gaps in Existing Systems

- **Lack of All-in-One Functionality** - Most local apps are either static or service-specific. None offer dynamic trip planning or day-to-day itinerary generation.
- **Limited Personalization** - There is no local app that adapts recommendations based on user preferences such as interests, budget, or travel style.
- **Poor Integration** - Users must still rely on multiple apps for navigation, bookings, reviews, and planning, which is inconvenient and discouraging, especially for foreign tourists

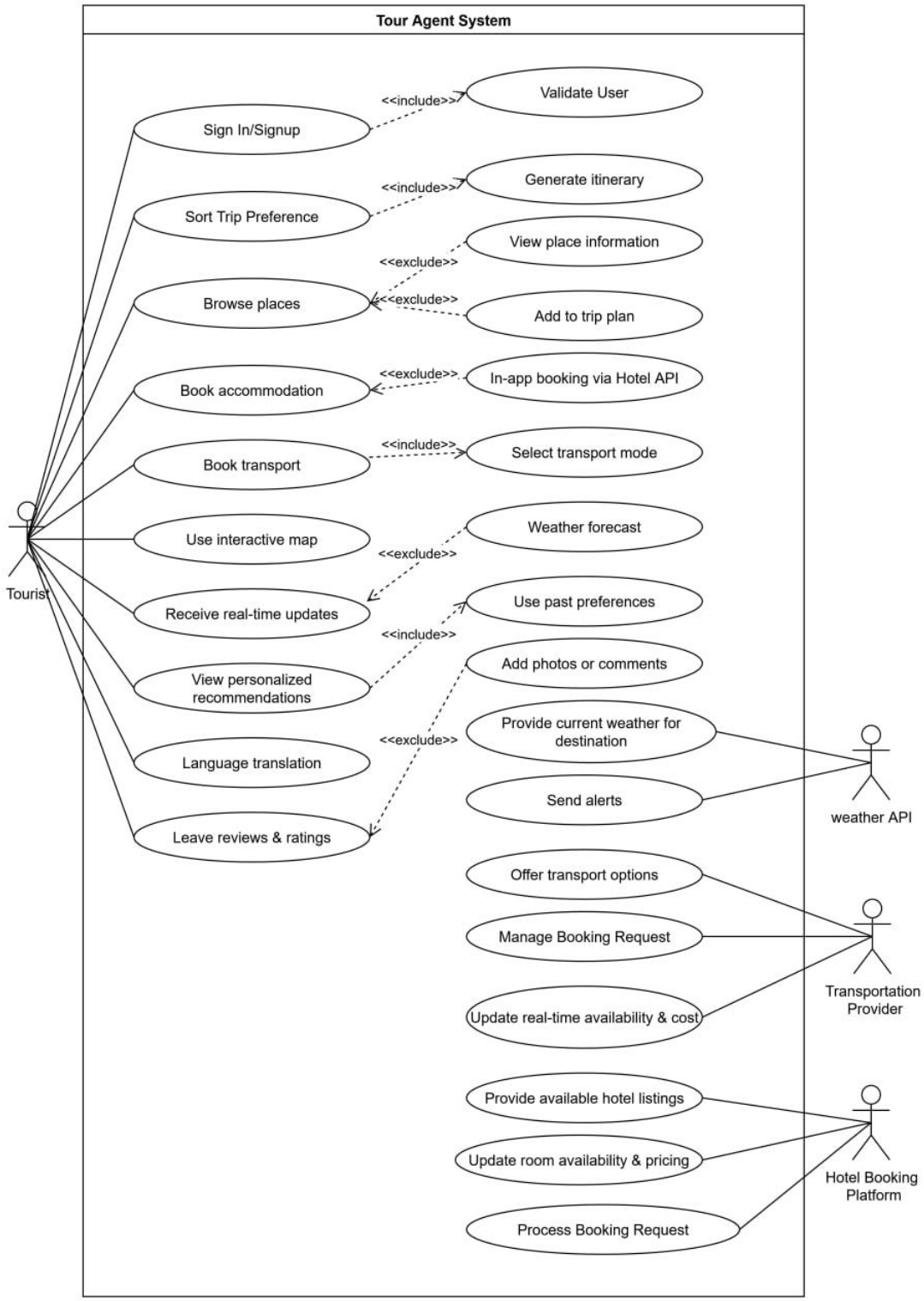
Proposed Solution

To address the current limitations in Sri Lanka's digital tourism experience, we propose the development of an all-in-one tourism application that enables users to plan, manage, and enjoy their trips more efficiently. The application will combine destination discovery, trip customization, booking systems, real-time updates, and local service integration in a single user-friendly platform. It will cater for both local and international tourists, enhancing convenience while supporting small tourism-related businesses.

Key Features of the Proposed website

1. **Personalized Trip Planning** - Users can select destinations based on categories (e.g., historical sites, nature, adventure), specify trip duration and budget, and receive optimized day-wise itineraries.
2. **Interactive Map Navigation** - A built-in map helps users explore places, get route suggestions, and view nearby attractions.
3. **Real-Time Updates** - Weather, traffic conditions, and emergency alerts will be displayed to help users adjust their plans as needed.
4. **Transport and Accommodation Booking** - Integration with hotel platforms and transport providers to allow users to make reservations directly.
5. **Local Service Integration** - Access to guides, restaurants, cultural events, and activity providers with ratings and user reviews.
6. **Trip Sharing and Social Integration** - Users can share trip plans with friends and post highlights to platforms like Facebook or Instagram.
7. **Language Assistance** - A built-in translation feature will help foreign tourists communicate with locals.

Use Case Diagram



Technology Planning

To ensure the tourism application is scalable, user-friendly, and reliable, a modern technology stack will be adopted. The development will follow modular architecture to allow smooth integration of features such as booking, recommendations, and real-time updates. The system will consist of three core components. Frontend (user interface), Backend (server and database), and Integration APIs.

Frontend Technologies

- HTML – To structure and present the content of the website.

  CSS – For styling, layout design, responsiveness, and ensuring a visually appealing interface.

  JavaScript – To handle interactivity, dynamic features, and API integration

- UI Design Tools
  - Figma
- Map Integration
  - Google Maps API
- Localization & Accessibility

Backend Technologies

- Programming Language & Framework
  - Node.js with Express.js
- Database Systems
  - Firebase Realtime Database/MySQL
- APIs & External Integrations
  - Travel APIs – For real-time flight, hotel, or weather information.
  - Translation API – Google Translate API for real-time language assistance

Development Tools & Version Control

- **IDE** - Visual Studio Code
- **Version Control** - Git (via GitHub or GitLab) for code management and collaboration

Project Timeline and Conclusion

Project Timeline (Duration: 4 Months)

The development process is structured into five key phases across a 16-week (4-month) timeline to ensure efficient planning, design, implementation, and testing of the tourism application.

Phase	Duration	Activities
1. Requirement Analysis	Weeks 1 – 2	- Finalize project scope - Conduct user research - Define application features
2. UI/UX Design	Weeks 3 – 4	- Create wireframes and mockups using Figma - Get feedback and finalize UI
3. Backend & Frontend Setup	Weeks 5 – 8	- Set up server and database - Build frontend screens and integrate APIs
4. Feature Development	Weeks 9 – 12	- Implement trip planning, bookings, map, reviews, and real-time updates
5. Testing & Deployment	Weeks 13 – 16	- Perform usability testing - Fix bugs - Launch beta version on stores

Conclusion

Tourism in Sri Lanka has great potential but suffers from inefficiencies due to a lack of integrated digital platforms. The proposed tourism application offers a much-needed solution by centralizing trip planning, booking, and destination discovery in one interactive, user-friendly interface. By using modern technologies such as html, javaScript, Firebase, and Google Maps, the application will provide tourists with a seamless and engaging travel experience.

The project not only aims to simplify the travel process for users but also to support local tourism businesses, promote lesser-known attractions, and enhance the overall image of Sri Lanka as a digitally equipped tourist destination. Upon successful development and launch, the application has the potential to become a valuable asset in the country's digital tourism landscape.

Appendix

Spiro NZ (Pvt) Ltd

Spiro Education Consultancy

Our ref no. SNZ/Col/2025/08/001

Date: 27th August 2025

To: Whom It May Concern,

LETTER OF DATA COLLECTION CONFIRMATION

This letter is to confirm that index number s23010921, s23010378, s23010499, s23010444, s23010417 the students of The Open University of Sri Lanka, is undertaking a project related to the field of tourism as part of their academic requirements.

We, at Spiro NZ (Pvt) Ltd, understand the nature of the proposed project and have agreed to collaborate by allowing access to relevant information and operational details necessary for the successful completion of the project.

We recognize that the project aims to address a real-world issue within the tourism industry and we believe it will provide useful insights and possible solutions for the sector.

Please feel free to contact us for any further clarifications.

Sincerely,

Namali Witharana

Namalie Witharana Pathirana

International Student Coordinator

SPIRO NZ (PVT) Ltd
Company Reg no. PV 00268139
No.215/1, First Floor, Pannipitiya road, Thalawathugoda
Telephone. 011 277 7768 Email. info@spiroconsultants.com