
Especificación de requisitos de software

Proyecto: EcoAdveture (Sustainable travel
planning application)

Revisión

ÍNDICE

1. Introduction	3
1.1 Purpose	3
1.2 Product Scope	4
1.3 Scope of the initiative	4
1.4 Personnel involved, drivers	5
1.5 Current Situation Context	7
1.5.1 Antecedentes	7
1.5.2 Estándares y Certificación	8
1.6 Definiciones, acrónimos y abreviaturas	9
1.7 Resumen	9

1. Introduction

ECOADVENTURE, the mobile application designed for those travelers passionate about discovering the world while taking care of the environment. In a world where sustainability and ecological awareness have become key priorities, ECOADVENTURE is presented as the ideal tool to plan and enjoy responsible and sustainable travel.

With the constant growth of tourism and its impact on the environment, it is more important than ever to adopt sustainable and eco-friendly travel practices. ECOADVENTURE's main goal is to facilitate this process by providing travelers with valuable information and resources needed to make conscious and eco-friendly decisions when planning their adventures.

With our app, you can explore a wide variety of destinations and discover travel options that minimize environmental impact. ECOADVENTURE offers you a carefully selected list of eco-friendly accommodations, sustainable tourism activities and eco-friendly transportation routes. In addition, you will find practical tips for reducing resource consumption, minimizing waste generation and respecting local culture and heritage in each destination you visit.

The ECOADVENTURE application is designed to suit your individual preferences and needs. You will be able to customize your user profile and set your travel preferences, such as the maximum distance you are willing to travel by ground transportation, your specific interests in nature or participation in conservation activities. Based on this information, the application will generate personalized recommendations and travel suggestions tailored to your tastes and values.

With ECOADVENTURE, you will not only enjoy unique and memorable travel experiences, but you will also be an agent of positive change.

1.1 Purpose

The purpose of this document is to establish the functional and non-functional specifications for the development of the ECOADVENTURE application, whose main objective is to facilitate sustainable travel planning. This document will serve as a guide for the development team, providing a detailed description of the requirements and functionalities to be implemented in the application.

As for the EcoAdventure app, its purpose is to connect travelers with expert local guides and service providers committed to sustainable practices, in order to offer a wide range of options, from hiking and

biking to water activities and wildlife watching, all carefully selected to ensure authentic and enriching experiences.

1.2 Product Scope

❖ Product Name:

EcoAventura (Sustainable travel planning application).

❖ System Description:

ECOADVENTURE is a mobile application created specifically for sustainable travel planning in Ecuador. This application has two options: a free version and a premium version, which offer different functionalities and additional benefits for users.

The main features of the ECOADVENTURE system are: user registration, Destination search, Trip planning, Environmental information, Travel recommendations.

1.3 Scope of the initiative

The ECOAVENTURA application aims to cover a broad scope of sustainable travel planning. Its main focus is on providing responsible travel solutions and resources that minimize environmental impact and promote the conservation of natural and cultural ecosystems. The following are the main aspects covered by the scope of the initiative:

Environmental Sustainability - ECO AVENTURA focuses on providing travel options that are environmentally friendly. This includes the promotion of eco-friendly accommodations, sustainable tourism activities, low environmental impact transportation, and travel practices that minimize waste generation and natural resource consumption.

Biodiversity conservation: The application aims to inform travelers about conservation projects and areas in the destinations they visit. This will allow users to learn about the importance of protecting biodiversity and provide them with the opportunity to actively contribute through volunteering, donations or other citizen participation initiatives.

Education and awareness: The app seeks to be a reliable and educational source of information on sustainable tourism. It will provide practical tips, guides and educational materials so that travelers can learn about the impacts of tourism and how to make

responsible decisions that benefit both the environment and local communities.

Personalization and adaptability: ECOAVENTURA adapts to the individual preferences and needs of each user. Travelers will be able to customize their user profile and set their travel preferences, allowing the application to provide them with personalized recommendations and suggestions tailored to their specific interests and values.

In summary, the scope of the ECOAVENTURA app initiative encompasses environmental sustainability, biodiversity conservation, sustainable tourism education and awareness, as well as customization and adaptability to user preferences. The app seeks to be a comprehensive and practical tool for travelers committed to protecting the environment and promoting responsible tourism practices.

1.4 Personnel involved, drivers

Nombre	Gabriel Aguirre
Role	System Analyst, Tester, Developer
Professional category	Software Engineer
Responsibilities	Write the project documentation, carry out software quality testing
Information of contact	AGUIRRE GUANOLUISA GABRIEL PATRICIO
Approval	

Nombre	Alison Clavijo
Role	System Analyst, Frontend Developer
Professional category	Software Engineer
Responsibilities	Write the project documentation, Development of the application
Information of contact	ALISON NICOLE CLAVIJO GUTIERREZ
Approval	

Name	Adrian Iza
Role	System Analyst, Frontend Developer
Professional category	Software Engineer
Responsibilities	Write the project documentation, Development of the application

Information of contact	BRYAN ADRIAN IZA ODA
Approval	

Name	Andres Jacome
Role	System Analyst, Backend Developer
Professional category	Software Engineer
Responsibilities	Write the project documentation, Development of the application
Information of contact	ANDRES JONATHAN JACOME NAVARRETE
Approval	

Nombre	Bryan Yaguarshungo
Rol	Analista de Sistemas, Desarrollador de backend
Categoría profesional	Ingeniero en Software
Responsabilidades	Redactar la documentación del proyecto, Desarrollo de la aplicación.
Información de contacto	BRYAN DENISS YAGUARSHUNGO AVENDAÑO
Aprobación	

Name	Bryan Yaguarshungo
Role	System Analyst, Backend Developer
Professional category	Software Engineer
Responsibilities	Write the project documentation, Development of the application
Information of contact	BRYAN DENISS YAGUARSHUNGO AVENDAÑO
Approval	

1.5 Current Situation Context

1.5.1 Antecedentes

In the current context, sustainability and ecological awareness have become key priorities worldwide. The constant growth of tourism has had a significant impact on the environment, making it more crucial than ever to adopt sustainable and eco-friendly travel practices. Recognizing this need, ECOADVENTURE was developed as a mobile application to cater to travelers who are passionate about exploring the world while taking care of the environment.

ECOADVENTURE aims to provide valuable information and resources to facilitate conscious and eco-friendly travel planning. The application offers a wide range of features, including a carefully selected list of eco-friendly accommodations, sustainable tourism activities, and eco-friendly transportation routes. Additionally, it provides practical tips for reducing resource consumption, minimizing waste generation, and respecting local culture and heritage in each destination.

The ECOADVENTURE application is designed to be customizable, allowing users to personalize their profiles and set travel preferences. Based on this information, the app generates personalized recommendations and travel suggestions that align with the user's tastes and values.

Furthermore, ECOADVENTURE goes beyond providing travel options by connecting travelers with expert local guides and service providers committed to sustainable practices. This connection allows for the offering of a wide range of authentic and enriching experiences, including activities like hiking, biking, water sports, and wildlife watching.

The scope of the ECOADVENTURE initiative is comprehensive, covering various aspects of sustainable travel planning. It focuses on environmental sustainability by promoting eco-friendly options and minimizing environmental impact. Biodiversity conservation is also a priority, as the app aims to inform travelers about conservation projects and areas, encouraging their active participation. Education and awareness play a significant role, as the app provides reliable information, practical tips, and educational materials on sustainable tourism. Lastly, ECOADVENTURE emphasizes personalization and adaptability, tailoring recommendations to individual preferences and values.

Overall, the ECOADVENTURE app strives to be a practical and comprehensive tool for travelers committed to responsible tourism practices, offering them unique experiences while actively contributing to the protection of the environment and local communities.

1.5.2 Estándares y Certificación

In the context of the ECOADVENTURE application, the aim is to adhere to recognized standards and certifications in the field of sustainability and responsible tourism. These standards and certifications are important to ensure the quality and credibility of the offered travel options, as well as to ensure that established criteria in terms of environmental sustainability and social commitment are met. The following are some relevant standards and certifications that can be applied to ECOADVENTURE:

Sustainable Tourism Certification: Efforts will be made to include accommodations and service providers in the application that have recognized certifications in sustainable tourism, such as the Global Sustainable Tourism Council (GSTC) or the Sustainable Tourism Certification System (SCTS). These certifications ensure that tourism businesses meet environmental, social, and economic standards.

Sustainable Transport Standards: Collaboration with transportation providers that meet sustainability standards, such as the ISO 14001 environmental management standard, which sets criteria for reducing greenhouse gas emissions and optimizing fuel consumption, will be encouraged. Additionally, the use of low-emission transportation options like electric vehicles or public transportation will be promoted.

Local Regulations and Legislation: The ECOADVENTURE application will adhere to local regulations and legislation related to tourism and environmental protection in the destinations it covers. This involves respecting regulations regarding the conservation of protected areas, proper waste management, and the preservation of local culture and heritage.

It is important to note that the ECOADVENTURE application will seek to partner with recognized organizations and entities in the field of sustainability and responsible tourism to ensure the validity and integrity of the applied standards and certifications. This way, it will ensure that application users can trust the quality and

environmental and social commitment of the provided travel options.

1.6 Definiciones, acrónimos y abreviaturas

To ensure clarity and understanding, the following definitions, acronyms, and abbreviations are provided for the ECOADVENTURE application:

ECOADVENTURE: The mobile application designed for sustainable travel planning.

Sustainability: The practice of meeting present needs without compromising the ability of future generations to meet their own needs, considering environmental, social, and economic factors.

Eco-friendly: Referring to practices, accommodations, activities, or transportation options that have minimal negative impact on the environment.

User Registration: The process of creating a user account within the ECOADVENTURE application.

Destination Search: The functionality within the app that allows users to search for specific travel destinations.

Trip Planning: The feature that enables users to plan and organize their travel itineraries using the ECOADVENTURE app.

Environmental Information: Resources and data provided by the application regarding the environmental aspects of destinations, including conservation efforts, natural attractions, and eco-friendly initiatives.

Travel Recommendations: Personalized suggestions and recommendations generated by the ECOADVENTURE app based on user preferences and travel interests.

Biodiversity Conservation: Efforts and initiatives focused on protecting and preserving the variety of plant and animal species within an ecosystem.

Sustainable Tourism: Tourism that considers and minimizes its impact on the environment, respects local culture and communities, and provides economic benefits to the host destinations.

Personalization: The ability of the ECOADVENTURE app to tailor recommendations and suggestions based on individual user preferences, interests, and values.

Adaptability: The flexibility of the ECOADVENTURE app to adjust and cater to the specific needs and requirements of each user.

GSTC: Global Sustainable Tourism Council, an organization that establishes and promotes global criteria for sustainable tourism.

SCTS: Sustainable Tourism Certification System, a certification system for sustainable tourism practices.

EU Ecolabel: European Union Ecolabel, a certification awarded to products and services that meet high environmental standards.

FSC: Forest Stewardship Council, an international certification for responsible forest management.

ISO 14001: International Organization for Standardization's environmental management standard, which sets criteria for effective environmental management systems.

Local Regulations and Legislation: Laws and regulations specific to the destinations covered by the ECOADVENTURE app, related to environmental protection, tourism practices, and cultural preservation.

By using these definitions, acronyms, and abbreviations, communication within the development team and with users of the ECOADVENTURE app will be clearer and more concise.

1.7 Resumen

ECOADVENTURE is a mobile application designed to facilitate sustainable travel planning and promote ecological awareness. The app offers features such as user registration, destination search, trip planning, environmental information, and travel recommendations. It aims to provide travelers with valuable resources to make eco-friendly decisions, including a

curated list of sustainable accommodations, activities, and transportation routes. The app also emphasizes biodiversity conservation, education, and awareness by informing users about conservation projects and providing educational materials. ECOADVENTURE is customizable, tailoring recommendations based on user preferences. It strives to be a comprehensive tool for responsible tourism, connecting travelers with local guides and service providers committed to sustainability. The initiative adheres to recognized standards and certifications in sustainable tourism, promoting eco-label certifications, sustainable transport standards, and compliance with local regulations. Overall, ECOADVENTURE aims to offer unique travel experiences while actively contributing to environmental protection and local communities.

2 Overview

2.1 Exposition of the problem to be solved

The constant growth of tourism and its environmental impact require travelers to adopt eco-friendly practices and make conscious decisions when planning their adventures, the lack of a comprehensive and user-friendly mobile application for sustainable travel planning.

However, there is a need for a centralized platform that provides valuable information, resources, and personalized recommendations to facilitate responsible and sustainable travel.

2.2 Propuesta de solución

EcoAdventure is based on the combination of technology, sustainability, and collaboration with local communities. The product will provide users with a unique platform to discover and enjoy nature while contributing to environmental conservation and the socio-economic development of local communities.

With EcoAdventure, our goal is to drive a change in the way people travel and experience nature by promoting sustainable practices, educating about the importance of environmental preservation, and creating awareness about responsible tourism. Our solution will provide users with an exceptional experience, satisfying their needs for adventure, discovery, and connection with nature in a sustainable manner.

2.3 In scope

The main focus of ECOAVENTURA is to provide users with a comprehensive experience of responsible and sustainable travel. This entails planning itineraries that minimize environmental impact and promote responsible tourism practices, where users can access personalized recommendations based on their individual preferences. This will allow them to discover travel options aligned with their values and preferences. Additionally, the application will

provide an extensive list of eco-friendly accommodations, sustainable tourist activities, and eco-friendly transportation routes.

The application will also strive to provide practical tips that help travelers reduce resource consumption and minimize the generation of polluting waste during their adventures. These tips will be centered around sustainable practices such as water and energy conservation, proper waste management, and promotion of recycling. Furthermore, ECOAVENTURA will keep users informed about conservation projects in the destinations they visit. This up-to-date information will enable travelers to actively contribute to environmental protection by joining local initiatives, participating in volunteer programs, or making donations to organizations dedicated to biodiversity preservation and climate change mitigation.

2.4 Assumptions

Some assumptions include:

Demand for sustainable travel: It is assumed that there is significant demand from travelers who want to plan and undertake sustainable trips. This implies that there is a user base willing to use the application and adopt responsible travel practices.

Access to reliable information: It is assumed that there is access to reliable and up-to-date information about tourist destinations, eco-friendly accommodation options, sustainable activities, and low-impact transportation. The ECOADVENTURE application will rely on the availability and quality of this data to provide users with accurate and useful recommendations.

Availability of sustainable companies and services: It is assumed that there are enough sustainable tourism companies and services that can be included in the application. These include eco-friendly accommodations, tour operators committed to sustainability, and environmentally friendly transportation options. The feasibility of the application will depend in part on the existence of a wide range of sustainable service providers in different destinations.

2.5 Product Perspective

EcoAdventure is a web application developed with REACT, specifically designed for sustainable travel planning. With a focus on environmental responsibility, its main objective is to provide users with tools and resources for conscious and environmentally friendly travel. The application allows users to plan their trips, taking into account various aspects such as distance, available

transportation options, and the environmental impact associated with each option.

By gathering detailed information about biking routes, hiking trails, and public transportation options, EcoAdventure empowers users to make informed decisions to reduce their environmental footprint while traveling. Additionally, it provides information about responsible tourist destinations, highlighting places and activities that promote nature conservation, cultural preservation, and sustainable development of local communities.

The development team, composed of system analysts and both frontend and backend developers, is dedicated to ensuring the usability, efficiency, and ease of navigation of the application. They are also responsible for drafting project documentation and carrying out all stages of application development, from design to implementation and testing

2.6 Product Functionality

The functionality of the EcoAdventure product is to provide users with tools and resources to plan sustainable and environmentally responsible trips. The following are the main functionalities of the product:

Trip Planning: Users will be able to use the application to plan their trips, considering aspects such as distance, transportation method, and environmental footprint. This will enable them to make informed decisions on how to make their travel more sustainable.

Route Information: The application will provide relevant information about biking or hiking routes, helping users find transportation options that are more environmentally friendly.

Responsible Tourism: EcoAdventure will offer information about responsible tourist destinations, providing users with options that promote sustainable and environmentally respectful practices.

Reducing Environmental Impact: The application will provide practical tips for reducing environmental impact during trips, such as suggestions for minimizing resource consumption, avoiding waste, and respecting biodiversity.

Storage of Plans: The system will have a database to store users' travel plans, allowing them to easily access and manage their travel information.

Efficiency and Intuitive Design: The product will be developed using REACT to ensure efficient performance on web browsers, and graphic design standards will be considered to ensure an intuitive and user-friendly interface.

In summary, the main functionality of EcoAdventure is to provide users with tools to plan sustainable trips, offering relevant information, practical tips, and responsible options to reduce environmental impact.

2.7 User Characteristics

User Type	<ul style="list-style-type: none">• Environmentally conscious travelers seeking sustainable options for their trips.• Individuals interested in responsible tourism and reducing their environmental impact.• Adventurers who enjoy outdoor activities such as cycling, hiking, and eco-tourism.
Training	No specific training is required to use the application, as it will be designed to be intuitive and user-friendly.
Skills	<ul style="list-style-type: none">• Basic skills in using web applications and browsers.• Ability to understand and evaluate information related to environmental impact and transportation options.
Activities	<ul style="list-style-type: none">• Plan and organize trips, taking sustainable aspects into account.• Explore and select biking routes, hiking trails, and other outdoor activities.• Access information about responsible tourist destinations and learn about sustainable practices.• Use the database to store and manage trip plans.

2.8 Constraints

When designing and developing the EcoAdventure application system, there are several constraints to consider. These constraints may include:

- The development methodology to be followed will be the Scrum methodology.
- The platforms the application should be compatible with are mobile devices (iOS, Android) and web browsers.
- Languages and technologies in use: Angular, TypeScript, Node.js.
- The servers must be capable of handling concurrent queries.
- The system will be designed according to a client/server model.
- The system should have a simple design and implementation, independent of the platform or programming language.

2.9 Assumptions and Dependencies

Description of those factors that, if changed, can affect the requirements. For example, an assumption could be that a specific operating system is available for the required hardware. In fact, if the operating system is not available, the SRS should be modified.

3 Requisitos específicos

3.1 Requisitos funcionales

Id	REQ-001
name	Signup
type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Restriction
source	Customer
priority	<input checked="" type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low

Id	REQ-002
name	Destination search
type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Restriction
source	Customer
priority	<input checked="" type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low

Id	REQ-003
name	Travel planning
type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Restriction
source	Customer

priority	<input checked="" type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low
----------	---

Id	REQ-004
name	Environmental information
type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Restriction
source	Customer
priority	<input checked="" type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low

Id	REQ-005
name	Travel recommendation
type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Restriction
source	Customer
priority	<input checked="" type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low

Id	REQ-006
name	Share experiences
type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Restriction
source	Customer
priority	<input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low

3.1.1 Users Signup

The application must allow users to register by providing their name, email, and password. The system should also validate the information entered by the user to ensure that the username and email address are not duplicated in the system.

3.1.2 Destination search

The application will offer a sustainable tourist destination search feature, allowing users to search by region, destination type, available activities, and other criteria.

3.1.3 Trip Planning

The application will allow users to plan their sustainable trips, including selecting the mode of transportation, choosing sustainable accommodations, and planning responsible tourist activities.

3.1.4 Environmental Information

The application will provide information about the environmental impact of travel and tourist activities, including greenhouse gas emissions and other forms of pollution.

3.1.5 Travel Recommendations

The application will offer recommendations and tips for users on how to reduce their environmental impact during travel and tourist activities.

3.1.6 Sharing Experiences

The application will allow users to share their sustainable travel experiences with other users and post reviews and recommendations about destinations and tourist services.

3.2 Non Functional Requirements

3.2.1 Performance Requirements

- The application is expected to support the simultaneous interaction of multiple users, with a maximum capacity of 500 users.

3.2.2 Security

- Access Control: Establish policies and mechanisms to restrict access to resources or confidential information only to authorized personnel (Administrator).
- Require strong and complex passwords.

3.2.3 Reliability

- Rigorous and comprehensive system testing will be conducted to ensure proper functioning.
- Rigorous and comprehensive system testing will be conducted to ensure proper functioning.

3.2.4 Availability

- The application must be available 24/7.
- Access and registration will be possible through Social Providers like Google, Facebook, Twitter, etc.

3.2.5 Maintainability

- The system or application design should be modular and cohesive, with independent components.
- Clear and comprehensive documentation of the system should be maintained.
- Clear and consistent coding standards should be established to ensure that the code is easily readable and understandable.

3.2.6 Portability

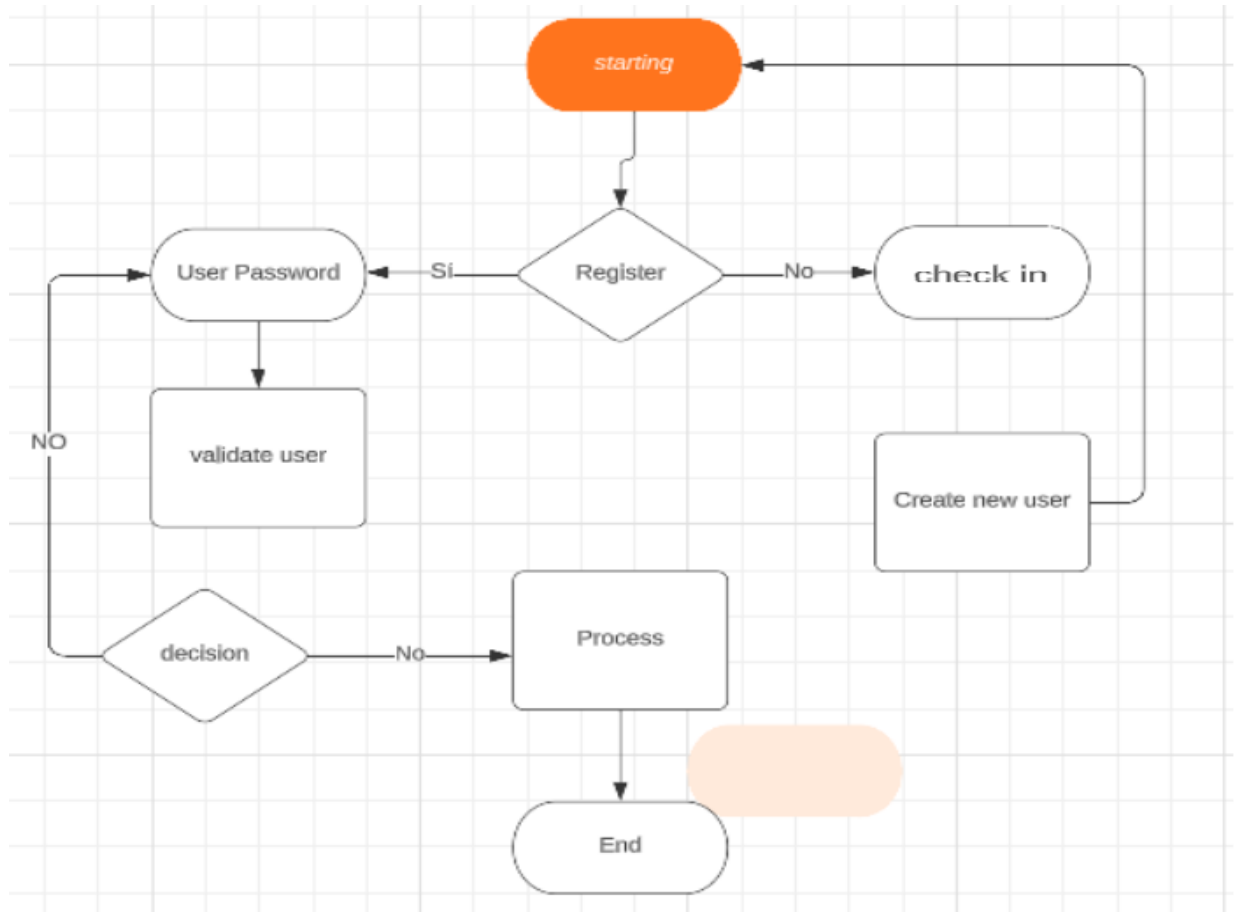
- The application should be compatible with multiple browsers.
- Data should be easily transferred or migrated between different systems or applications.
- The system should be easily installed and deployed.

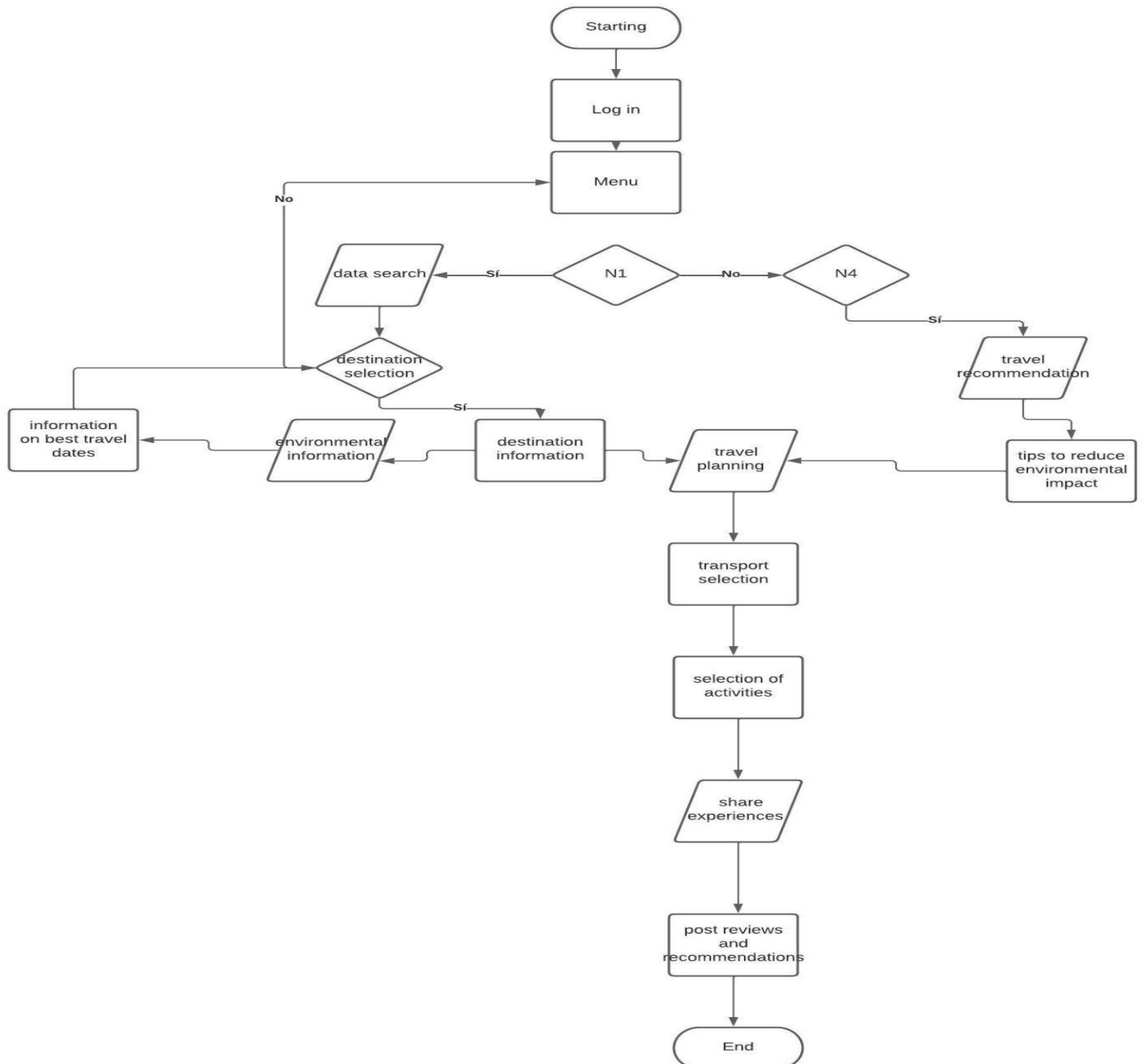
3.3 Other Requirements

- The system's learning curve for a user should be less than 4 hours.

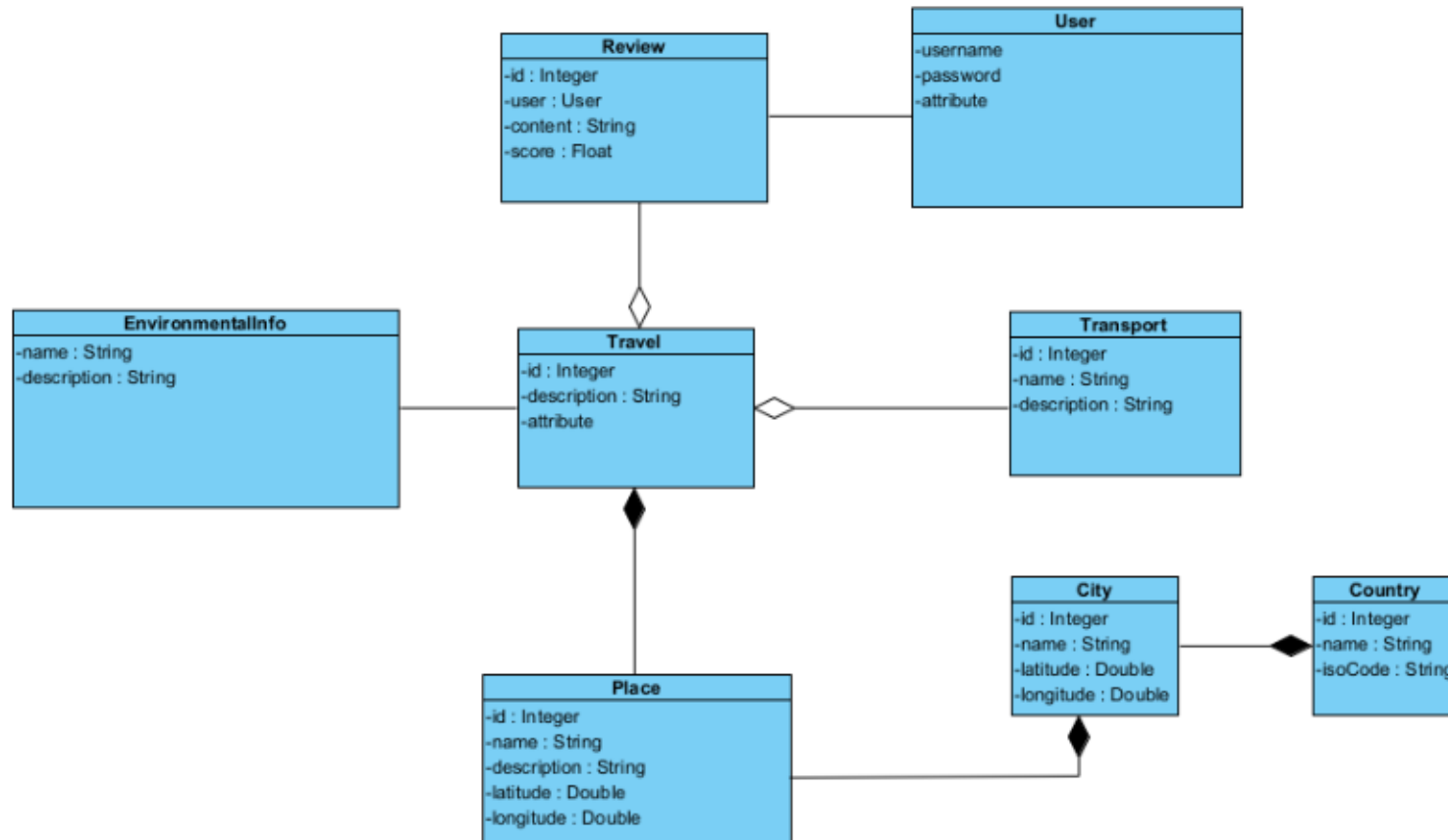
4 BPMN

4.1 Flowchart

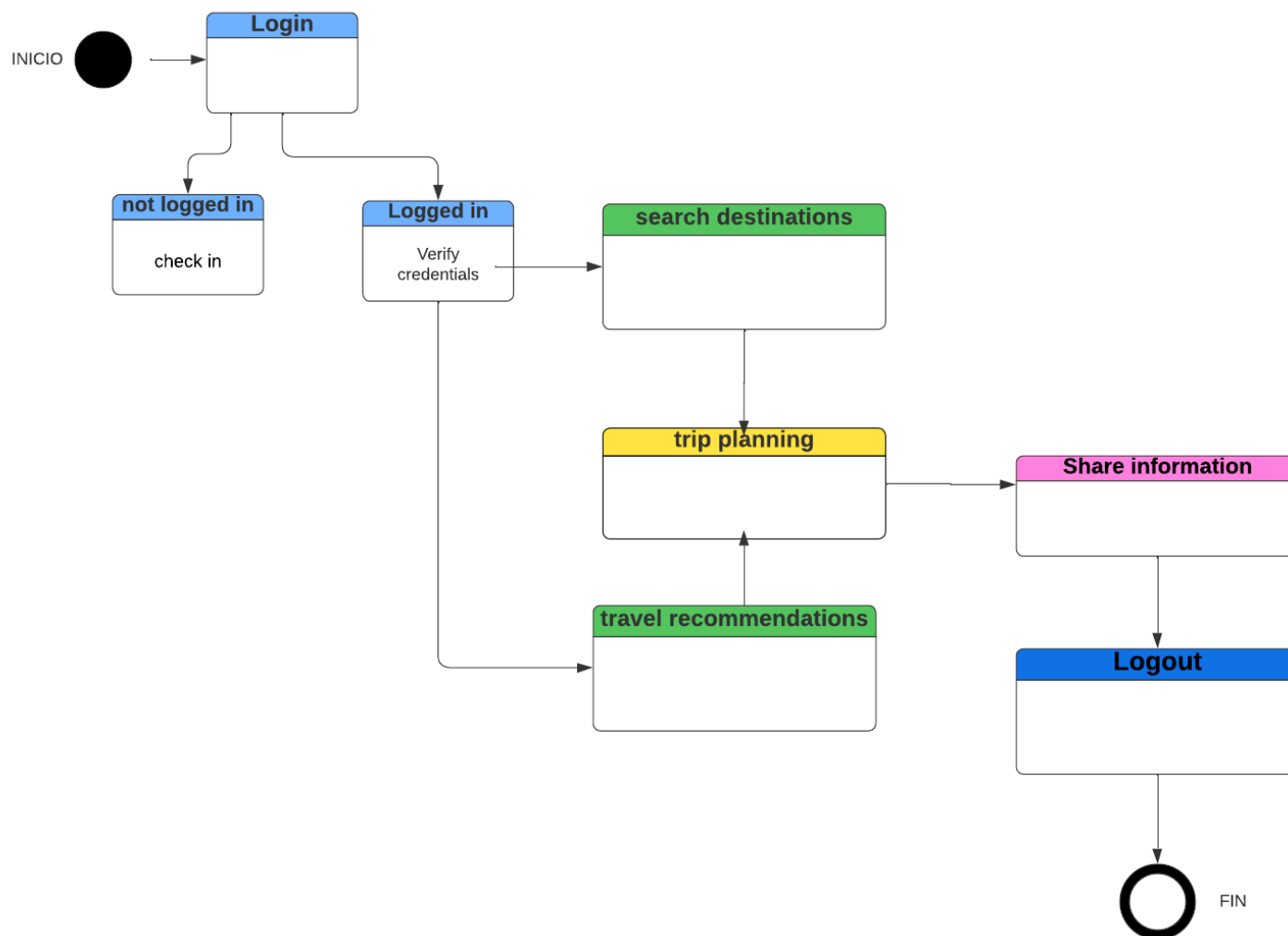




4.2 Class diagram



4.3 State diagram



4.4 Sequence diagram

