Tribhuvan University

Faculty of Humanities and Social Sciences

"Adventure Nepal"

A Project Report

Submitted to

Department of Computer Application

Kathmandu College of Technology

In partial fulfillment of the requirements

for the Bachelor's Degree in Computer Application

by

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Supervisor

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2023-08-17

Tribhuvan University

Faculty of Humanities and Social Sciences

Kathmandu College of Technology

Student's Declaration

I hereby declare that I am the only authors of this work and that no sources other than thelisted here have been used in this work.

……..

Shrawan Kumar Thakur

2023-08-17

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Kathmandu College of Technology

Supervisor's Recommendation

We hereby recommend that this project report prepared under my supervision by **Shrawan Kumar Thakur** entitled **"Adventure Nepal"** in partial fulfillment of the requirements for the degree of Bachelor in Computer Application be processed for the evaluation.

……

Prashant Gautam

Kathmandu College of Technology

(Supervisor)

2023-08-17

Tribhuvan University

Faculty of Humanities and Social Sciences

Kathmandu College of Technology

LETTER OF APPROVAL

We certify that we have read this project report and, in our opinion, it is satisfactory in the scope and quality as a project in the partial fulfillment of the requirement of Bachelor's Degree in Computer Application.

Evaluation Committee

.....	.....
Prashant Gautam	**Krishna Bhandari**
Kathmandu College of Technology	Kathmandu College of Technology
Lokanthali, Bhaktapur	Lokanthali, Bhaktapur
(Head of Department)	**(Supervisor)**
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External Examiner	**Internal Examiner**

ACKNOWLEDGEMENTS

We would like to express our special thanks of gratitude to our supervisor Mr. Prashant Gautam, who gave us the golden opportunity to do this wonderful project on "Adventure Nepal – Travel Recommendation App", who also helped in completing this project. We came to know about many new knowledges, new practices for software development and tools such as Git and GitHub.

Finally, we would like to thanks my classmates and friends who helped us in designing and developing this project. Last but not the least we would like to thank Google and YouTube which helped us in searching the required sample for resources.

Shrawan Kumar Thakur

BCA 6th Semester, KCT

ABSTRACT

A news management system provides us facilities to publish news articles and manage them. It provides features of managing users such as administrators, editors, visitors etc. In recognizing that we decided to develop a news portal which provides all the information regarding the system.

During the development period of this project, we have gone through various stages from requirements collection, feasibility analysis, system design and development to testing, we have used PHP as a programming language, MySQL as a database for backend whereas CSS, HTML, JavaScript, Bootstrap and another scripting language at the front end. For mobile app we have used Flutter framework which is backed by Dart programming language.

The silent feature of this app is to provide travel recommendations. It will provide more features in coming future.

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CHAPTER 1

INTRODUCTION

1.1 Background

In today's fast-paced and interconnected world, travel has become an integral part of our lives. Whether for business or pleasure, people are constantly seeking ways to explore new destinations, experience diverse cultures, and create lasting memories. However, the process of planning and navigating through unfamiliar territories can be overwhelming and time-consuming.

Introducing our proposed travel app, designed to revolutionize the way individuals plan, explore, and share their travel experiences. This innovative mobile application aims to provide users with a comprehensive and user-friendly platform that enhances their travel journey from start to finish.

Our travel app leverages the power of modern technologies, including location-based services, real-time data, and social sharing capabilities, to offer a personalized and immersive travel experience. By seamlessly integrating various features and functionalities, we strive to simplify travel planning, enhance on-the-go exploration, and foster a vibrant community of travel enthusiasts.

1.2 Problem Statement

The world of travel is filled with countless opportunities for exploration, adventure, and cultural immersion. However, travelers often face challenges when it comes to planning their trips, discovering authentic experiences, and connecting with fellow travelers. These challenges can dampen the excitement of travel and hinder the ability to make the most of each journey.

- Overwhelming Travel Planning
- Lack of Personalization
- Limited Social Interaction

1.3 Objective

- Simplify Travel Planning.

- Enhance On-the-Go Exploration.

- Personalize Recommendations.

- Provide an Intuitive and Engaging User Experience.

1.4 Scope and Limitations

The scope of our travel app encompasses a wide range of features and functionalities designed to enhance the travel experience for users. However, it's important to acknowledge the limitations and constraints within which the app will operate.

1.4.1 Scopes

- Location-Based Services: The app will leverage location-based services to provide users with relevant information about their current location and nearby cities. Users will be able to access details about popular attractions, weather updates, and adventurous activities in their vicinity.
- Comprehensive Travel Information: The app will aggregate and present comprehensive travel information, including destination guides, attractions, activities, and itineraries. Users will have access to curated recommendations, user reviews, and ratings to aid their decision-making process.
- Personalized Recommendations: The app will incorporate personalized recommendation algorithms based on user preferences, travel history, and behavior. This will enable users to receive tailored suggestions for attractions, activities, and places to visit, enhancing their travel experiences.
- Social Sharing and Community Interaction: The app will provide users with the ability to share their travel experiences through photos, short video clips, and stories. Users can interact with each other, exchange recommendations, and foster a vibrant community of travel enthusiasts.
- User-Friendly Interface: The app will prioritize user experience, offering an intuitive and visually appealing interface. Navigating through the app will be seamless and engaging, ensuring ease of use and accessibility for users of varying technological backgrounds.

1.4.2 Limitation

The project allows adding new articles, manipulating information detail, publishing notices.

However, there are some limitation which are listed below:

- Data Availability: The app's effectiveness relies on the availability of reliable and up-to-date data from various sources, such as APIs and third-party services. The accuracy and availability of this data may be subject to external factors beyond our control.
- Platform Compatibility: The app will be developed for specific platforms (e.g., Android, iOS), limiting its accessibility to users on other platforms. Cross-platform compatibility may require additional development resources and considerations.
- Internet Connectivity: The app's functionality relies on a stable internet connection. Some features, such as real-time updates and data retrieval, may be limited or unavailable without internet connectivity.
- Third-Party Integration: The app may integrate with external services and APIs to provide certain features, such as weather updates or location-based information. The availability and functionality of these integrations may be subject to the policies, limitations, and changes imposed by the third-party providers.
- Security and Privacy: While we prioritize the security and privacy of user data, it's essential to acknowledge that no system is entirely immune to potential security risks or data breaches. Measures will be taken to ensure the app's security; however, it is important for users to practice responsible data sharing and follow best practices to protect their personal information.

1.5 Report organization

This report document contains five chapters:

Chapter one: The first chapter describes the introduction of the build system.

Chapter two: Chapter two defines and describes an Overview of related existing systems and their pros and cons.

Chapter three: Chapter three presents the System Analysis and Design, including Requirement Analysis and Feasibility Analysis.

Chapter four: Chapter four includes the process of implementation, Testing and Debugging.

Chapter five: Chapter five includes Conclusion, Limitations and Future Enhancement

Chapter 2

LITERATURE REVIEW

In this chapter, we provide an overview of the methodology employed in the development of the Adventure Nepal mobile application. The chapter presents the steps and procedures followed to design, implement, and deploy the application. The methodology section is divided into three main parts: Requirements Analysis, System Design, and Implementation.

2.1 Requirements Analysis

The initial phase of the project involved a comprehensive analysis of the requirements to define the scope and functionality of the Adventure Nepal mobile application. The requirements were gathered through discussions with stakeholders, including potential users and domain experts. The primary objectives of the application were identified as follows:

1. Location and Weather Retrieval: Develop the capability to determine the user's current geographical location and retrieve real-time weather information for that location.
2. Activity and Place Recommendations: Implement a feature that recommends nearby activities and places based on the user's location, weather conditions, and user preferences.
3. User Authentication: Provide user registration and login functionality to personalize the user experience and enable access to additional features.

The requirements analysis phase culminated in the creation of a detailed functional specification that outlined the features, user interactions, and data flows within the application.

2.2 System Design

The system design phase focused on the architectural and user interface design of the Adventure Nepal mobile application. This phase comprised two key aspects: architectural design and user interface design.

2.2.1 Architectural Design

The application follows a client-server architecture, where the mobile app acts as the client and interacts with a remote server. The client communicates with the server using RESTful APIs to fetch location, weather, and activity/place recommendations.

The server-side architecture is built on a LAMP (Linux, Apache, MySQL, PHP) stack. MySQL is used as the database management system, storing user profiles, activity data, and location-related information. PHP scripts provide the logic for data retrieval and processing, while Apache serves as

the web server.

2.2.2 User Interface Design

The user interface design aimed to create an intuitive and visually appealing experience for users. The app's layout, color scheme, and typography were chosen to reflect the adventurous and exploratory nature of the application. A user-friendly navigation structure was designed to ensure easy access to features.

Chapter 3

SYSTEM ANALYSIS AND DESIGN

3.1 System analysis

Considering the fact that this project involves design and implementation of a software system regardless that is mobile-based, it was necessary to mention and consider certain models used in software development and deployment. For this project, we are using a waterfall model [4].

The waterfall model is a linear process model that divides development processes into successive project phases. In contrast to iterative models, each phase is run through only once. The results of each preceding phase are used as assumptions in the subsequent phase. The waterfall model is used especially in software development.

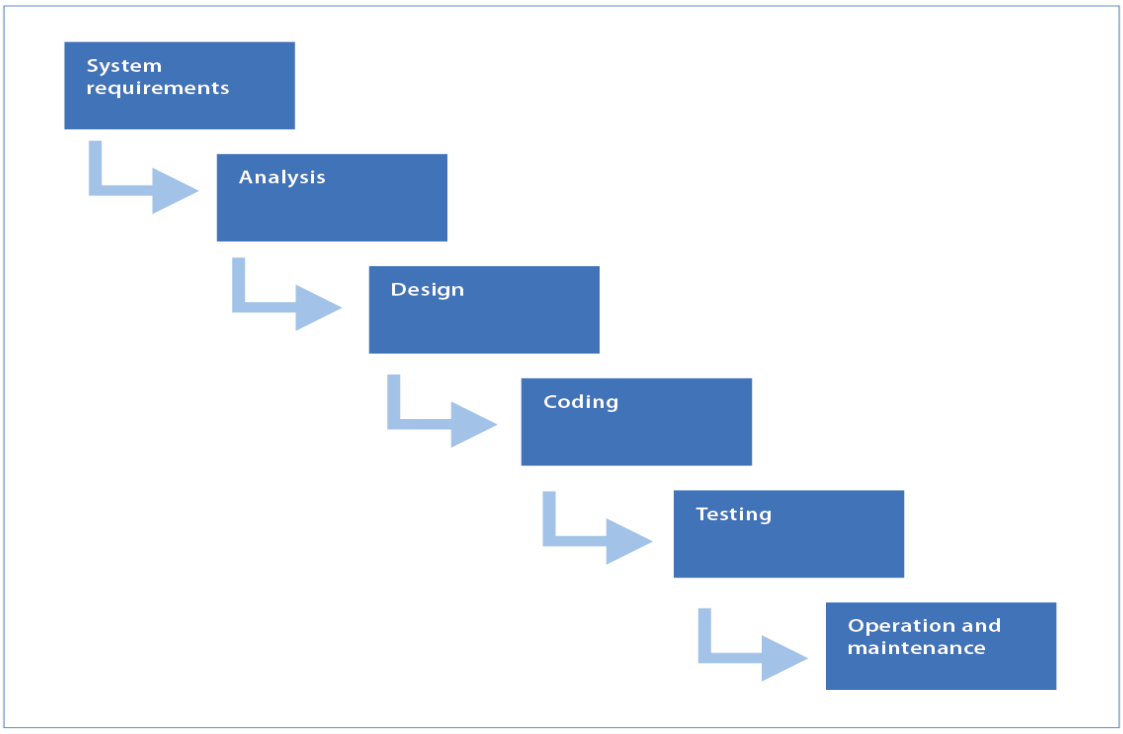

Figure 3.1 Waterfall Development Model

3.1.1 Requirement analysis

Requirements analysis is a crucial step for determining the success of a system or software project. Requirements are generally split into two types:

1) Functional requirements
2) Non-functional requirements

3.1.1.1 Functional requirement

This section provides the requirement overview of the system. Various modules implemented by the system are:

- Administration module.
- Administration will be able to add new activities.
- Administration will be able to edit and update published activities.
- Administration will be able to delete published activities.
- Administration will be able to add new places.
- Administration will be able to delete published places.
- Administration will be able to edit published places.

- User/Traveler Module
- User will be able to access current weather and location
- User will be able to see the list of recommended places.
- User will be able to see the list of recommended activities.
- User will be able to see the detail of selected place or activity.

- Login module
- Only registered administrators/users can login.
- It ensures security to the system.
- It helps to authenticate the users.
- Only validate username and password is used to log in the system.
- Use case diagram

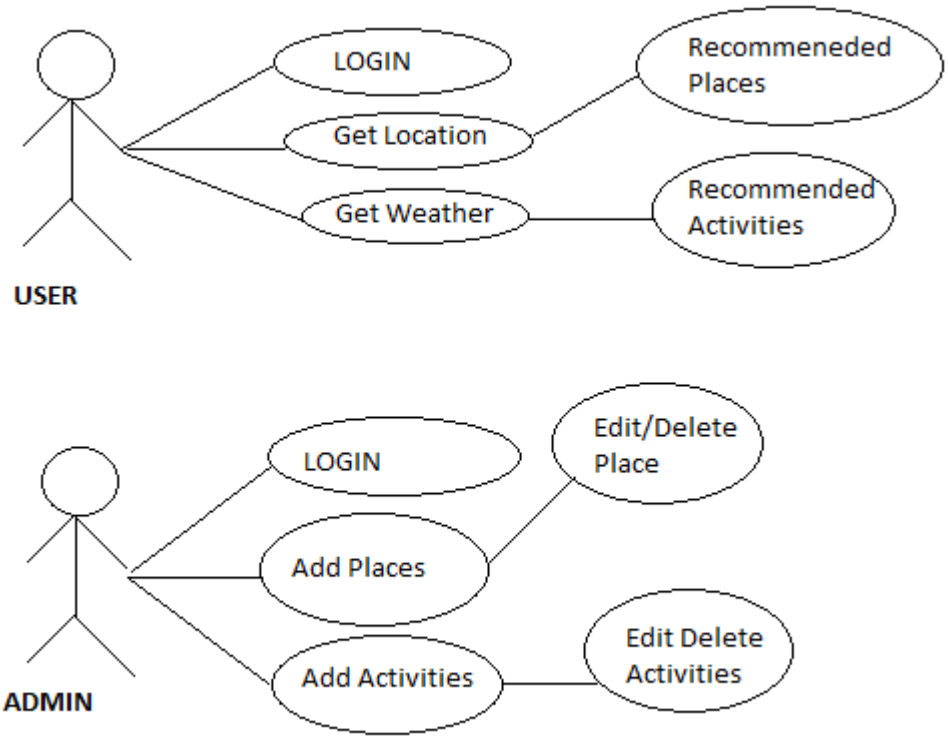

Figure 3.2 Use Case Diagram

3.1.1.2 Non-Functional Requirement

Non-functional requirements of the system are identified as availability, security performance, reliability. The non-functional requirements included in the project are:

- **Availability**
  - Since the developed admin system is web-based so, the system will be available online.
  - The developed mobile app will launch offline as well but will work only when online and GPS Enabled.
- **Security**
  - Only admins with correct credentials can access the admin system. No other people can access the system without the proper credential. So, it is secure.
- **Performance**
  - Since the system is simple and does not provide bulky and heavy features or designs, loading of the both user website and dashboard is fast and efficient.
- **Reliability**

Since the system has proper provision of security and reliability, the system will be reliable to the users. No unauthorized users will be able to modify data.

3.1.2 Feasibility analysis

The feasibility analysis includes Technical feasibility, Operational feasibility, Economic feasibility, Schedule feasibility.

3.1.2.1 Technical feasibility

The technologies and development tools that has been intended to use are all readily available and are open source. Furthermore, team members have sufficient fundamental knowledge of design and programming patterns. We should be able to improvise, adapt and overcome challenges that may arise during development of the system.

3.1.2.2 Operational Feasibility

The application is platform independent and can run on any web enabled device. The backend of the system needs a JavaScript and PHP environment with MySQL connection, but the one-time setup is minimal and can be achieved in any host environment.

3.1.2.3 Economic Feasibility

There is no major cost associated with the development of the system. The system does need a server with MYSQL environment which is open and free so it is expected to be economically feasible to any institution looking to implement a system like this. Also, the manpower required for management of the databases and moderation of content is quite low which helps in minimizing the production cost.

3.1.2.4 Schedule feasibility

Since this project is to be submitted before our board exams, which is very good as our college activities are passive, time should not be a problem.

The working scheduled of our project is described in the following GANTT chart.

GANTT CHARTS

As per our schedule we used to develop this project, we have the following Gantt chart. It can also be used to examine a project's start and finish dates in a single graph. Gantt's charts were created in our project using MS Excel.

Activity	Start Date	End Date	April			May			June			July			August		
Planning	10-Apr	30-Apr															
Analysis	1-May	10-May															
Design	11-May	30-May															
Coding	1-Jun	30-Jul															
Testing	1-Aug	20-Aug															
Delivery	21-Aug	30-Aug															

Figure 3.3 Gantt chart of Adventure Nepal

3.2 System Design

The system design used while developing this "Travel Recommendation App'' are briefly described and designed below:

3.2.1 Data Modeling (ER-Diagram)

This ER (Entity Relationship) diagram represents the model of "Travel Recommendation App". The entity-relationship diagram of Travel Recommendation App shows as all the visual instrument of database tables and the relations between Admin, Users, and list of activities [5].

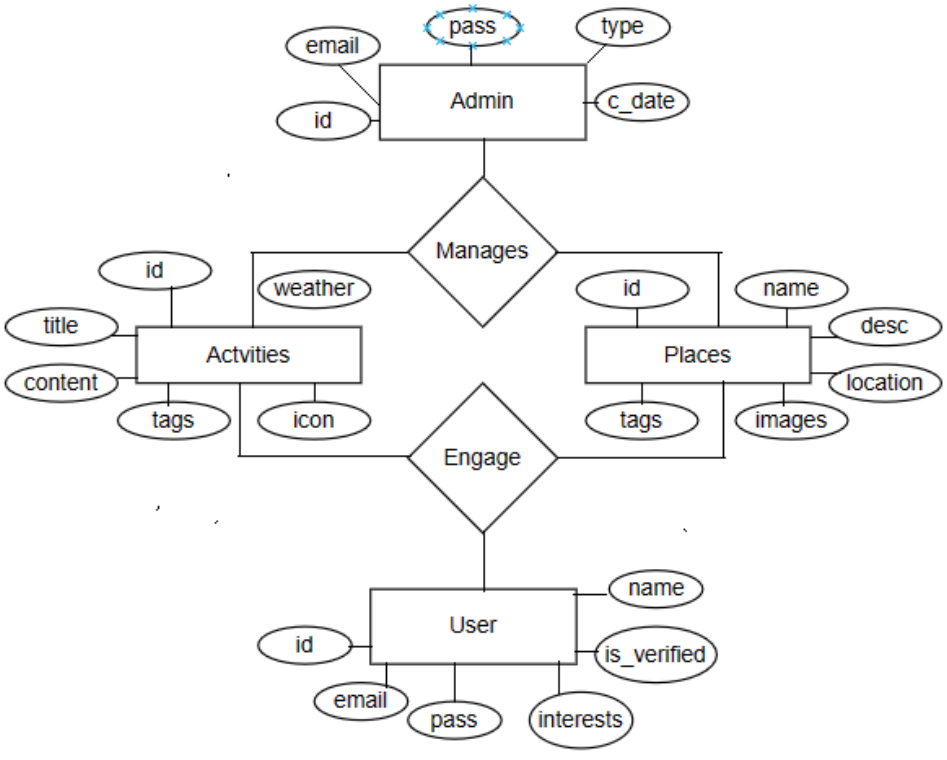

Figure 3.4ER Diagram

3.2.2 Process Modeling (DFD)

A context diagram is drawn in order to define and clarify the boundaries of the software system. The news management system context diagram, sometimes called a level 0 data-flow diagram, identifies the flows of information between the system and external entities. Here the external entities are the visitors are who visit the news management system to either view news and administrator's login to the system and perform actions. The system module is where the admin will manage and update news and the system and provide relevant information to visitors. The system context diagram shows how visitors and admin interact with other in news management system.

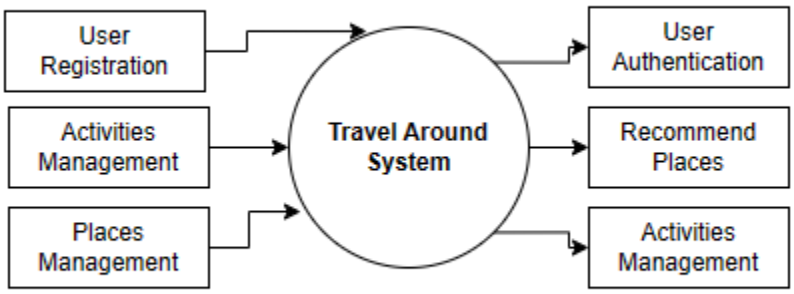

Figure 3.5 level 0 DFD

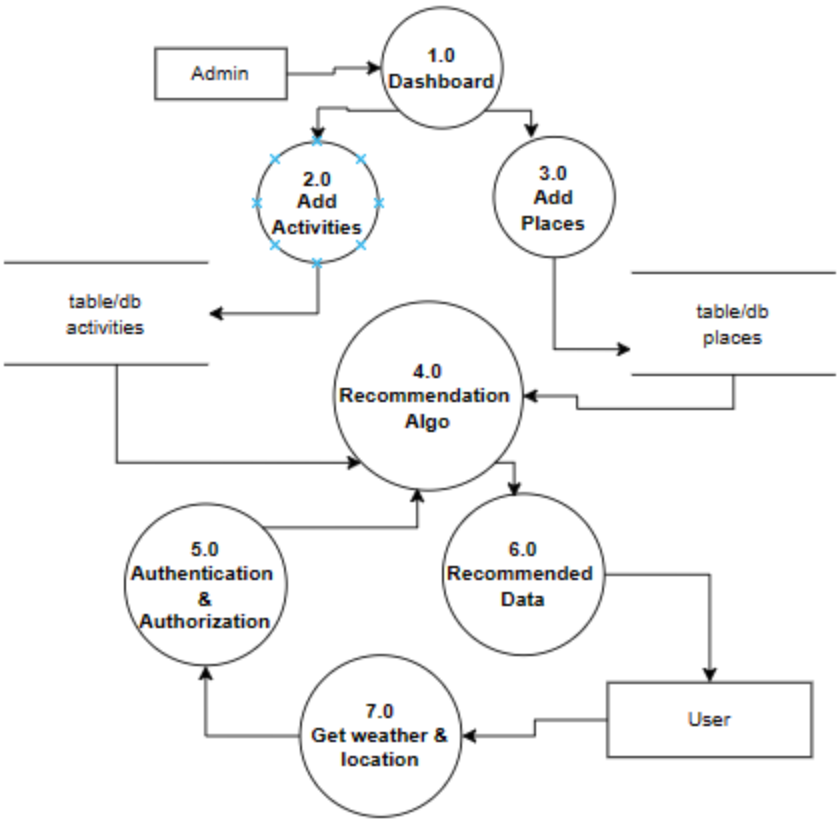

Figure 3.6 Level 1 DFD

3.2.3 Flow chart

A flowchart is a diagrammatic representation of an algorithm. A flowchart can be helpful for both writing programs and explaining the program to others. In the developed activities recommendation system, the module is different for admin and users where data flows as:

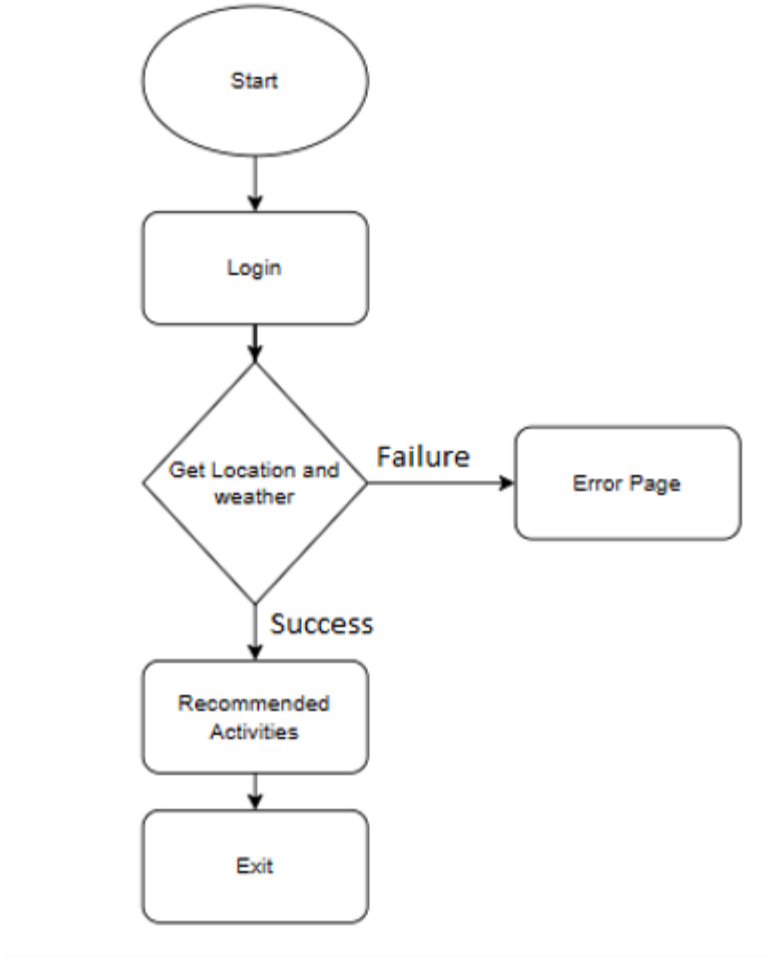

Figure 3.7 Flow chart of user module

3.2.4 Architectural Design

3.2.5 Database Schema

Database schema of this developed system contains four logical schemas such as admin, activities, places and users, and it contains different fields, views and integrity constrains. User logical schema have field like id, name, address, email, password, interests and is verified which defines all the logical constraints that need to be appliedon data stored in physical schema. Similarly, admin logical schema is the administration of the system which have created an account through registration system where it has field like name, email, password, confirm password, and image. Admin can perform operation such as adding places and activities, manipulating data. Similarly, places logical schema has field like ID, latitude longitude, place name, created at, updated date and description. Similarly, activities logical schema has field like ID, title, description, html, icon, weathers. Admin of the system can access the wholedatabase and can manage the places and activities of the logical schema.

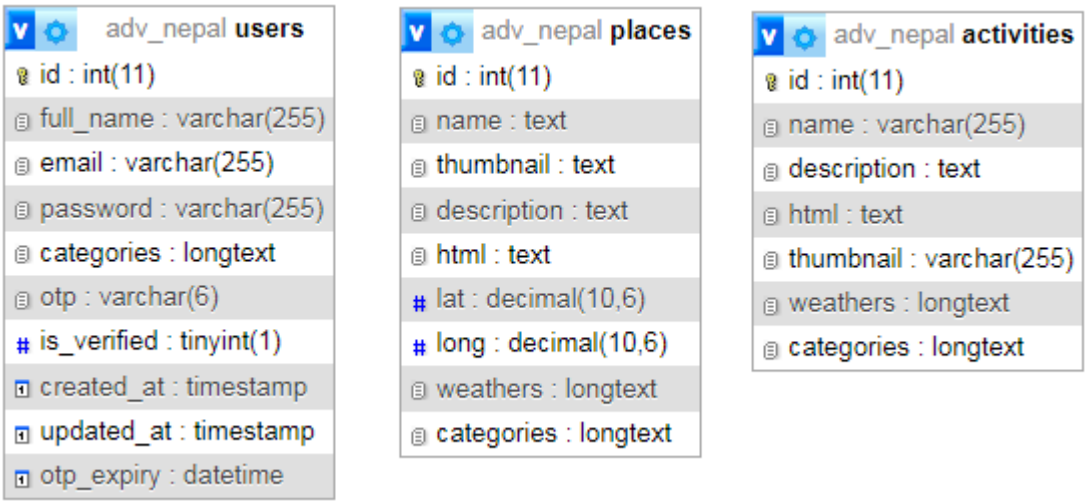

Figure 3.8 Database schema of Adventure Nepal

3.2.6 Interface Design (UI Interface / Interface Structure Diagrams)

The aim of UI is to provide smooth, effective and efficient eye appealing and smooth transaction between pages. Some main user interface design of the developed project are shown below:

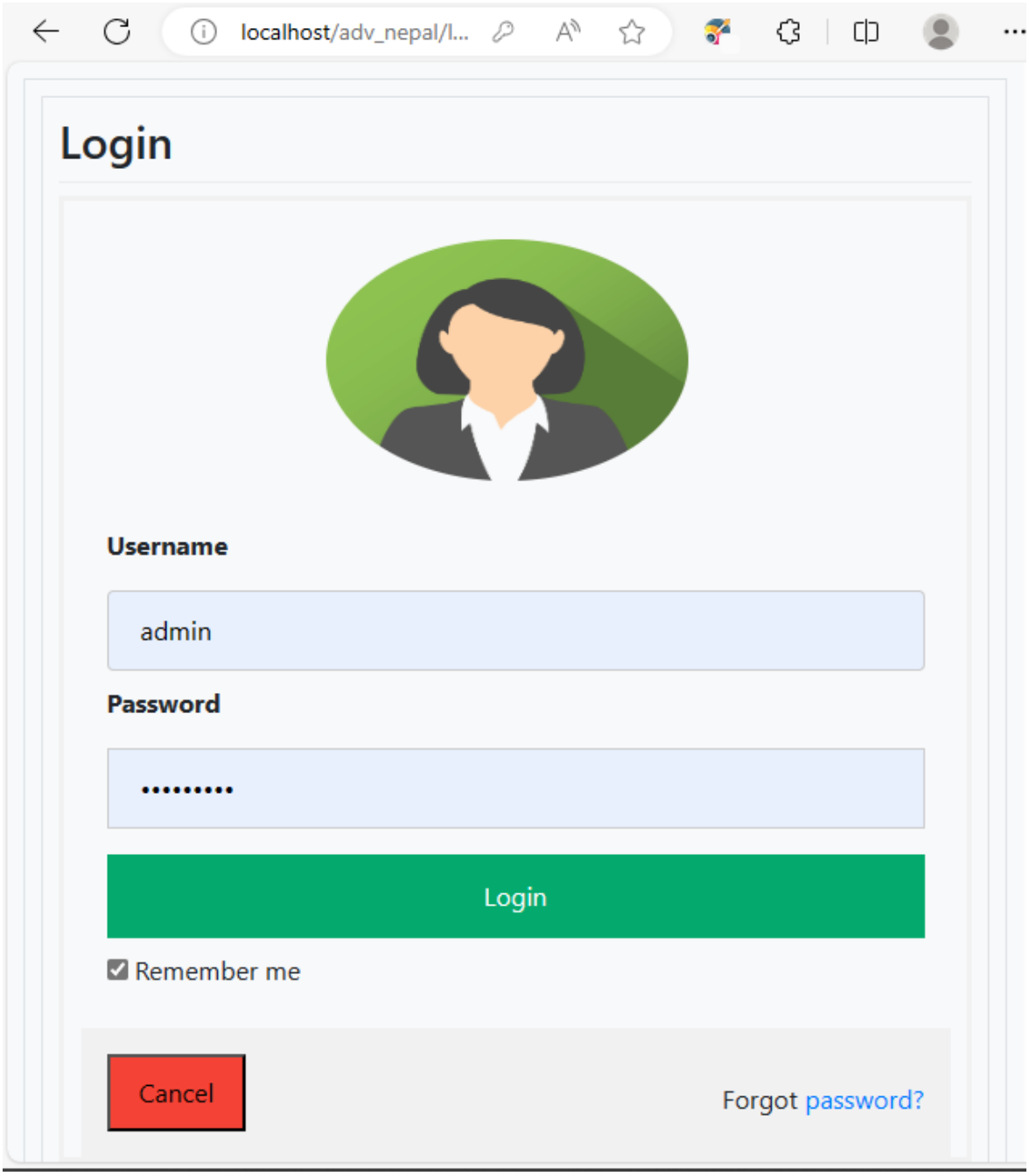

Figure 3.9 Admin Login page Design

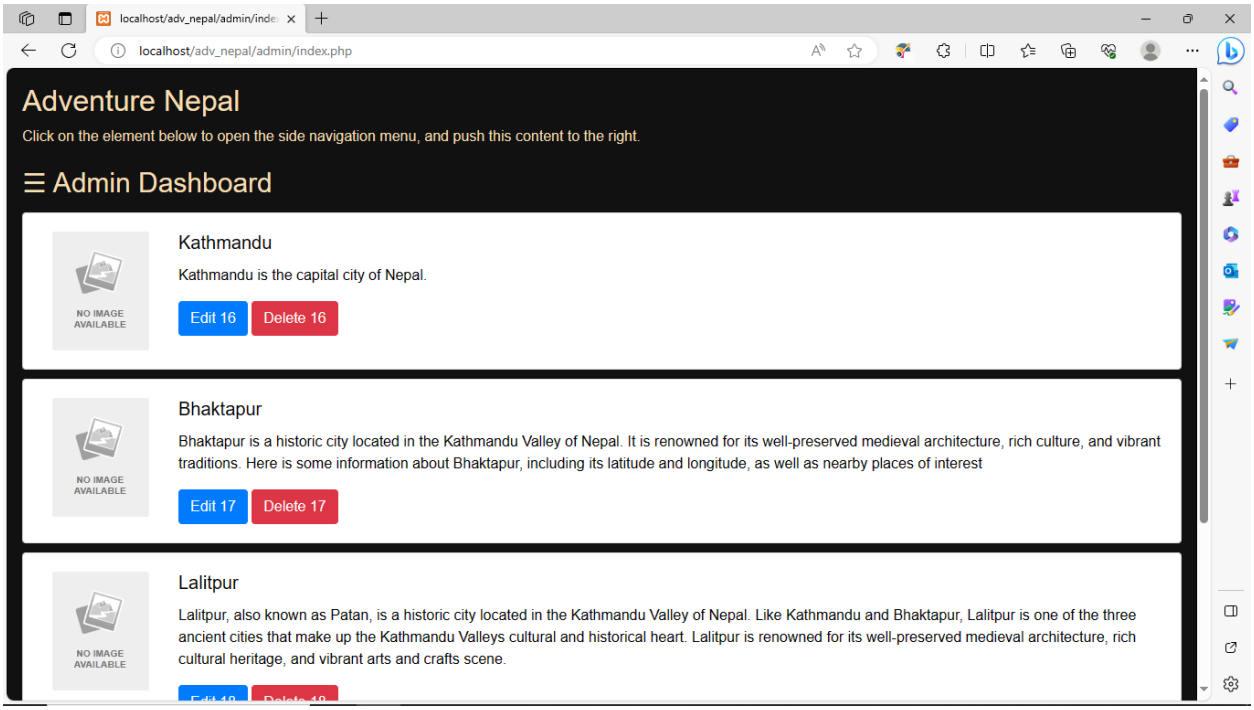

Figure 3.10 Dashboard/Places List Page

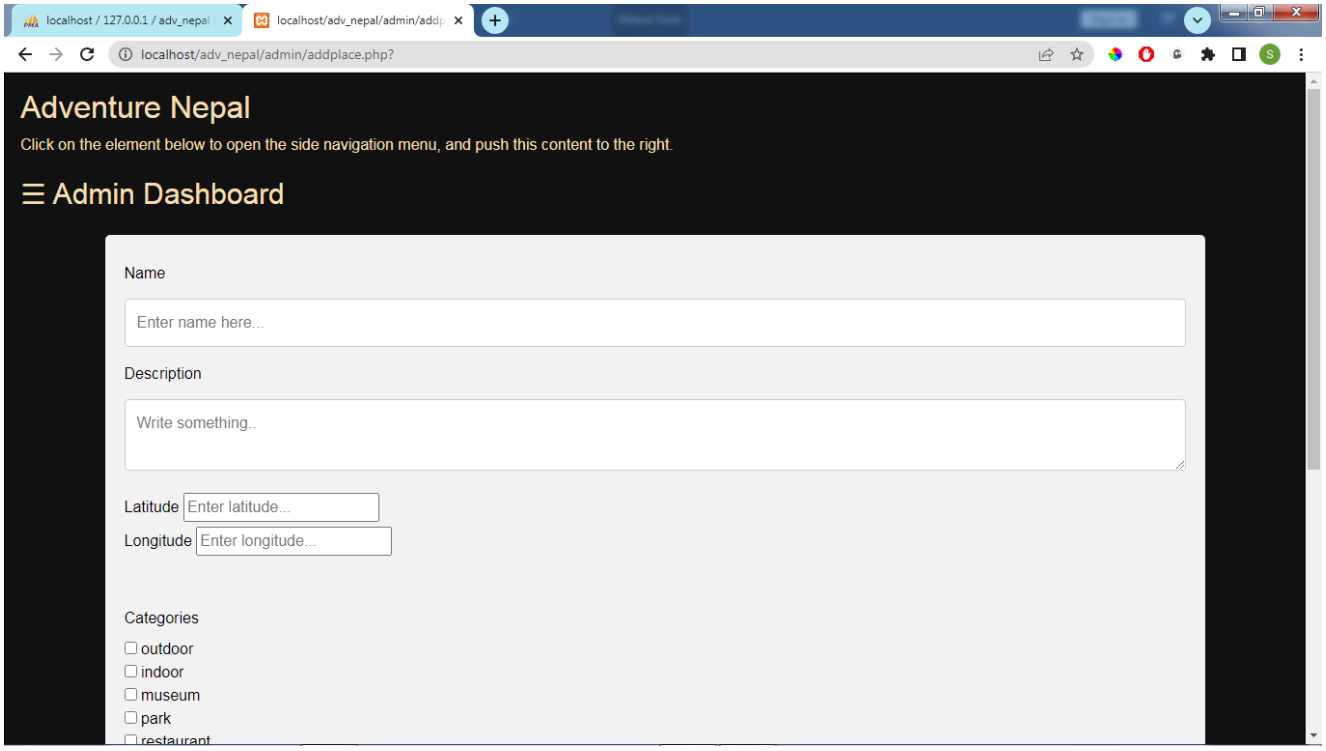

Figure 3.11 Add Place Page

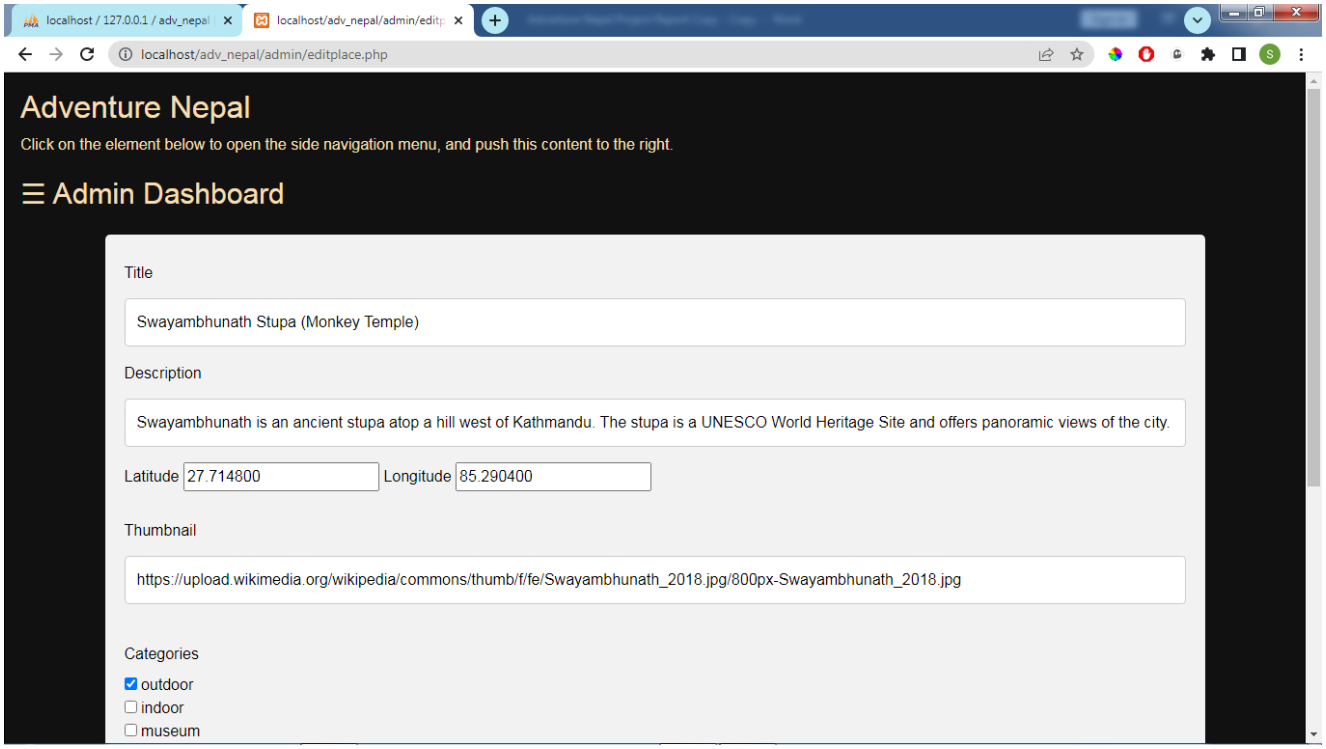

Figure 3.12 Edit Place Page

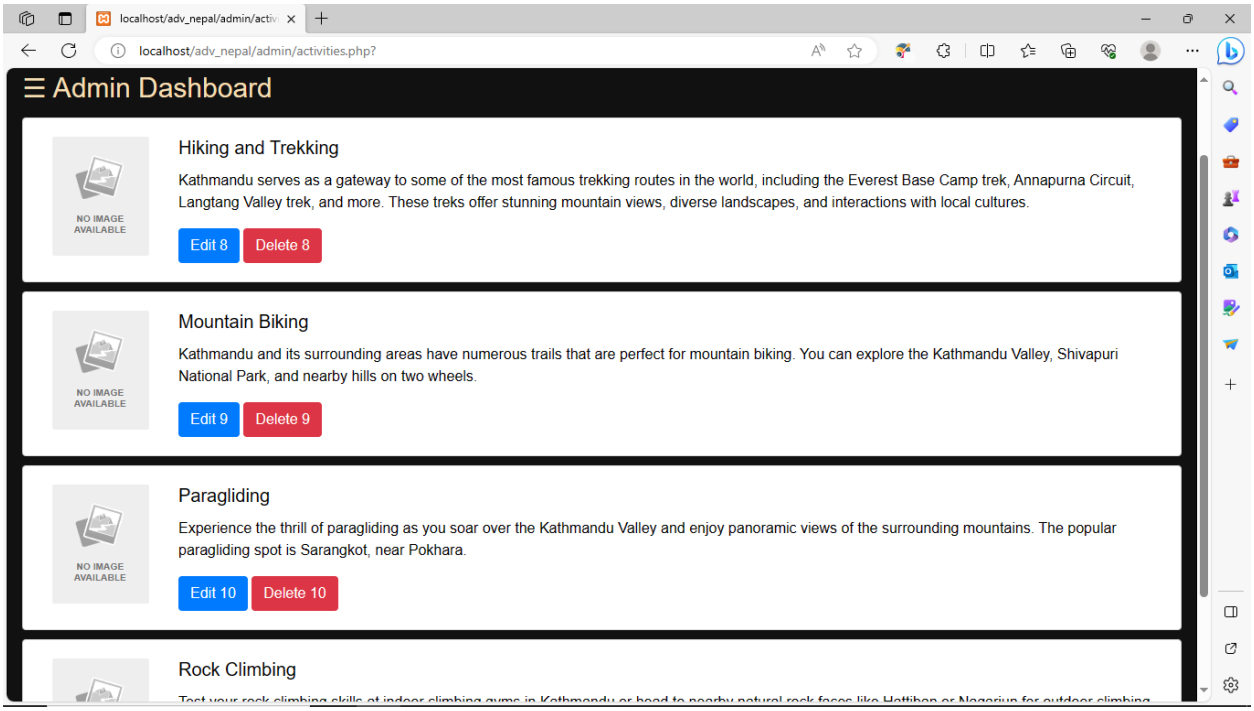

Figure 3.13 Activities List Page

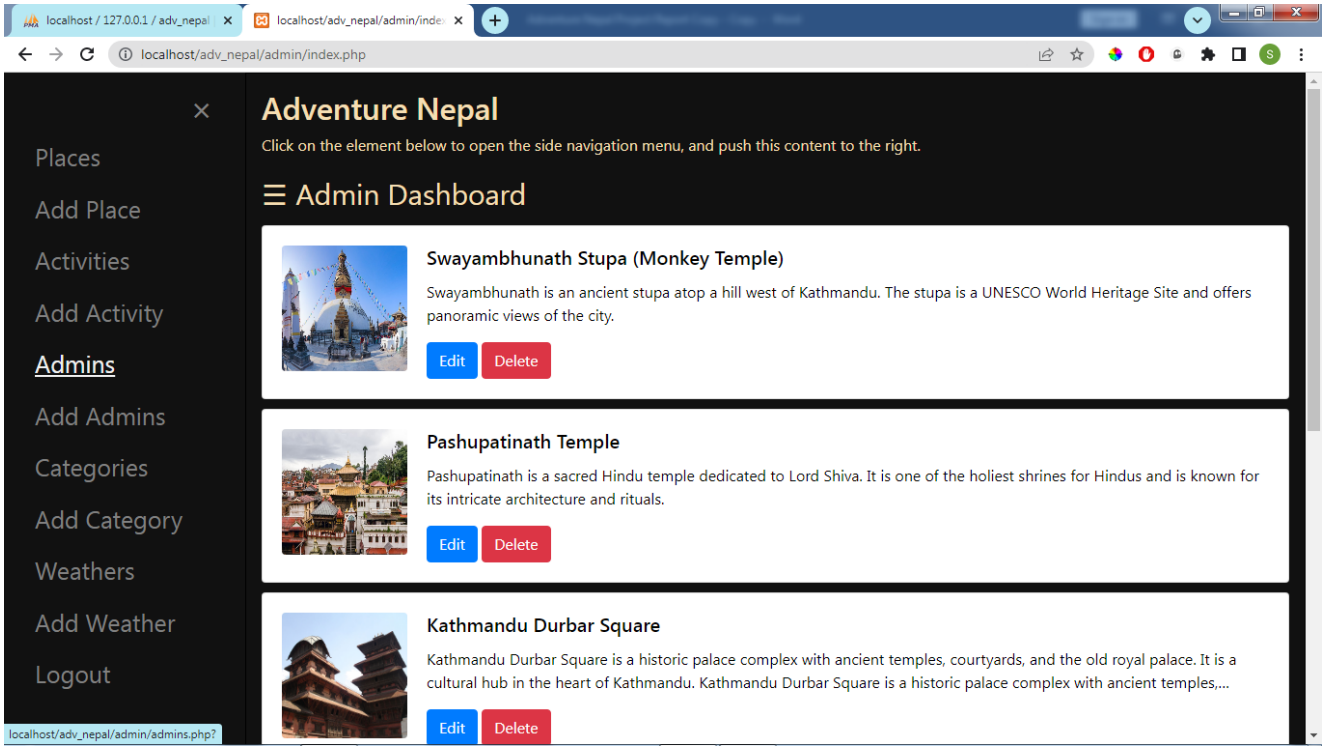

Figure 3.14 Side Navigation Drawer

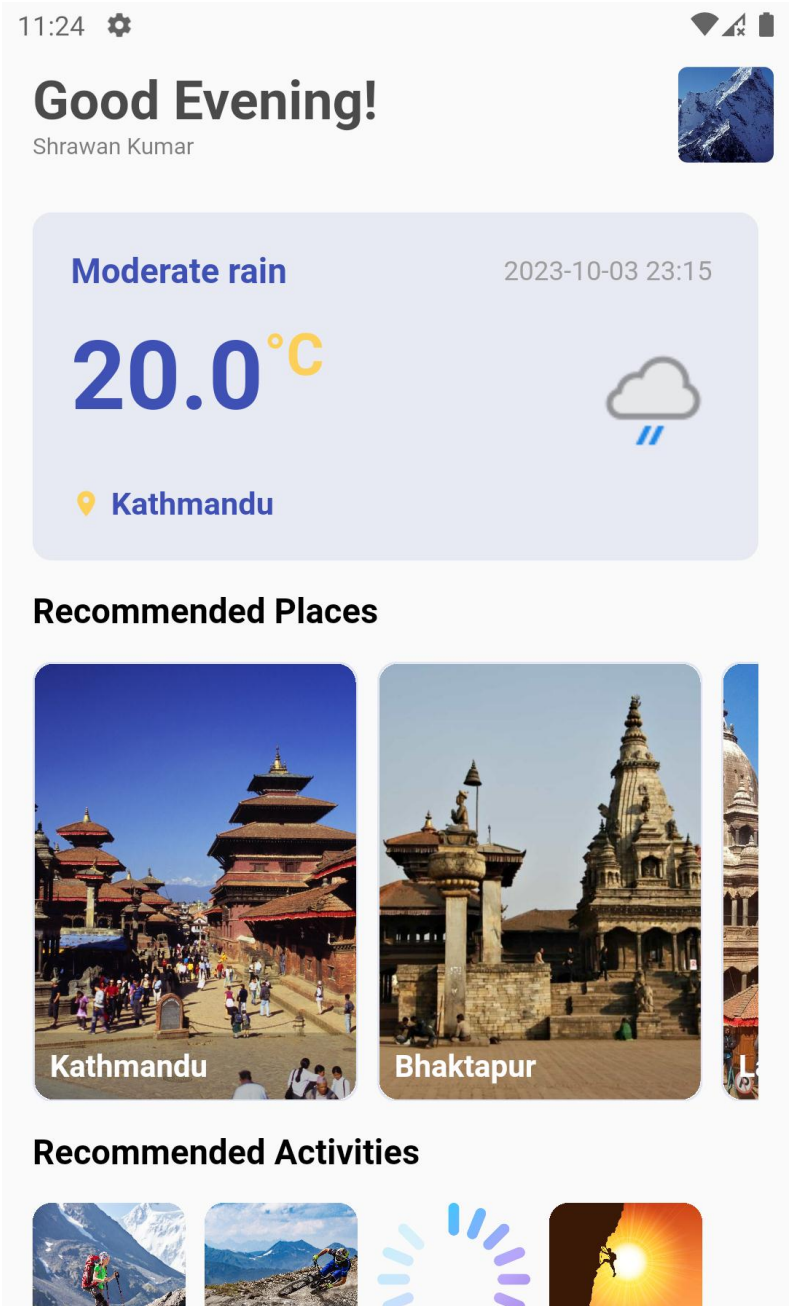

Figure 3.15 Mobile App Home Page

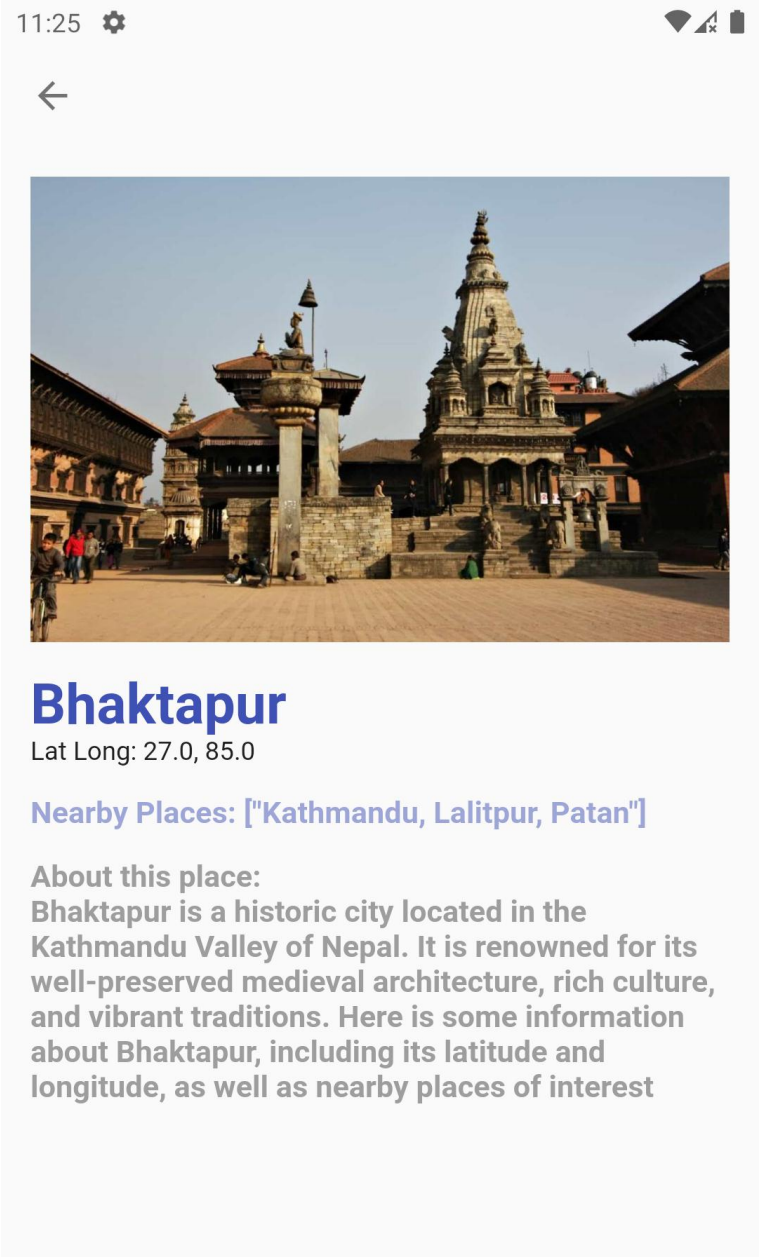

Figure 3.16 Mobile App Place Detail Page

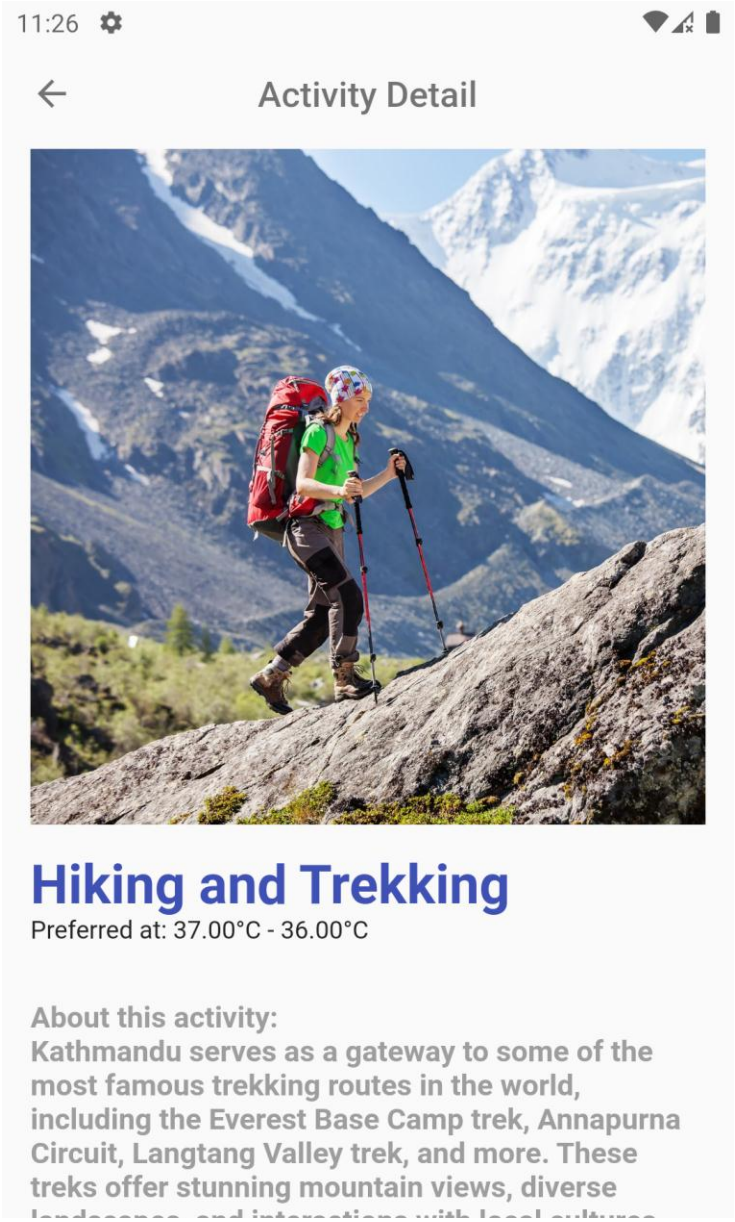

Figure 3.17 Mobile App Activity Detail Page

CHAPTER 4

IMPLEMENTATION AND TESTING

4.1 Implementation

In the first phase, data were collected. Data collection took longer time than another phase. It was the critical stage in the project's development. All the physical design of the project is turned into working computer code. Many tools and technologies that were utilized to develop the system were discussed in the preceding chapter.

4.1.1 Tools Used

- **Front-end**: Bootstrap, HTML5, CSS3, and JavaScript.

    1. HTML5

    (Hyper Text Markup Language) HTML is used for structuring webpage design in our project, and it provides us with overall skeleton structure of webpage. HTML is the main presentation language of our project because it helps us to show the structure of our page in the browser, which helps us to debug easily and efficiently [6].

    2. CSS3

    (Cascading Style Sheets) CSS is used to style the HTML document in our project. It is used to make our webpages responsive however bootstrap is used to make our webpages responsive [6].

    3. JavaScript

    JavaScript is used to make our webpages interactive and many JavaScript functions such as dialogue box is used in this project to make webpages interactive and user-friendly.

    4. Bootstrap

    Bootstrap is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first websites [6].

- **Backend:** PHP, MySQL and XAMPP

    1. PHP

    It is used to develop dynamic and interactive webpages.

    2. MySQL

    It is mainly used for the purpose of database.

    3. XAMPP

    XAAMP is used for local server and database to fulfill the need of the project and Apache and MySQL is used as local server and database.

- **Mobile App:** Dart, Flutter, Android Studio

    1. Dart

    It is the core programming language used in mobile app development.

    2. Flutter

    It is the hybrid mobile UI development Kit developed by google.

    3. Android Studio

    It is the IDE recommended by flutter team for app development using flutter.

4.1.2 Implementation Details of Modules

The proposed system is composed of two modules as user module, admin module which are furthered moduled as login, add_place, add_activity, add_place, edit, delete and so on. The individualmodules are briefly described below.

- **User Module**

    User module is nothing much but most of the mobile part. They will be able register, verify and complete profile from mobile. After that when they login, their current location and weather will be used to query for recommended places and activities based on their preferences, location and weather.

- **Admin Module**

    In Admin Module authentication is done using email and password given to the admin if admin enter correct email and password then admin can access to his dashboard. Admin manages places and activities. They can also edit places and activities and logout.

- **Add Module**

In the Add Module, an admin can log in to the system and add places/activities. Places can contain field such as name of place, content or description of place, featured image which is uploaded to server storage and name of the image goes to database table. And finally, user can press the submit button, if the place/activity is uploaded successfully, it will show message “Place/Activity uploaded successfully”. In case of image uploading error, it will show “Failed to upload image” and in case of failed query execution it will show “Failed to execute query”

- **Delete Module**

  In Delete place module, admin can delete places after logging in with correct credential. The deleted place/activity will not be shown in mobile app and can’t be recovered in any medium. Before deletion of any place/activity, it asks admin for confirmation with a yes, no dialog.

- **Edit Module**

  To access this module, you do not need to navigate to any page after logging in as admin. The home page for admin shows all the activities and places that has been published. You can simply click edit and it will take youto new page where you can edit the content and submit the changes. A message will appearof the result on action performed.

4.2 Testing

On the basis of the software requirement specification document, testing was performed to investigate and validate the behavior of a fully integrated software product. Before deploying an application or website, it must be thoroughly tested. As a result, this application's test cases were written. Some types of testing that we did are described below.

4.2.1 Test Cases for Unit Testing

Table 4. 1 Test case for admin login

ID	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
A_LOG_1	Admin enters a wrong username	username:abc password: 123456	Display message ** Invalid username or password.**	As expected,	Pass
A_LOG_2	Admin enters a wrong password	email: abc password: hfgkjhjkf	Display message ** Invalid username or password.**	As expected,	Pass
A_LOG_3	Admin enters correct email and password	email: ram password: ram@123	Logged into admin dashboard page	As expected,	Pass

Table 4. 2 Test case for add Place

ID	Test Case Description	Test Data	Expected Result	Actual Result	Pass/ Fail
ADD_P _1	Admin forget to enter a particular required field	All data empty	Display message Please fill out this field	As expected,	pass
ADD_P _2	Admin forgot to upload image for featured image	No Image provided	Display Message: Article uploaded successfully	As expected,	pass

Table 4. 3 Test case for user login

ID	**Test Case Description**	**Test Data**	**Expected Result**	**Actual Result**	**Pass/Fail**
U_LOG _1	User enters a wrong username	username:abc password: 123456	Display message ** Invalid username or password.**	As expected ,	Pass
U_LOG _2	User enters a wrong password	email: abc password: hfgkjhjkf	Display message ** Invalid username or password.**	As expected ,	Pass
U_LOG _3	User enters correct email and password	email: ram password: ram@123	Logged into user main	As expected ,	Pass

4.3 Test Case for System Testing

Check system behavior,

- If the site launches properly with all the relevant pages, features and logo.
- If the admin can login to the site.
- If the main features such as edit places/articles, delete places/articles, logout function as expected.
- If the admin site works properly in the newest versions of all major browsers.
- If the content of pages is properly aligned, well managed and without spelling mistakes.
- If session is working as expected.
- If a user is satisfied with the app after utilizing it, or if the user does not find it difficult to utilize it.
- If dropdown menu, Menu Bar icon works smoothly and properly or not.

CHAPTER 5

CONCLUSION AND FUTURE RECOMMENDATION

5.1 Lesson Learned / Outcome

With the completion of the project, it was possible to achieve the project's goal. After logging in as admin, they can add, edit, delete places and activities. Mobile users can log in the app and get recommended activities and places.

5.2 Conclusion

A media institute has to store accurate details of all the news they have published. For that they need a lot of hard copy of papers and document which is hard to manage and maintain. They take a lot of space. Adventure Nepal is successfully implemented using HTML5, CSS3, JavaScript, Bootstrap, PHP, Flutter which are open source and freely available on internet, and it successfully solves the problem of confusion what to do and where to visit in new places. The proposed system is useful for people withminimal IT knowledge with the use of internet. Towards the end of the project, it was discoveredthat the application might benefit from a number of improvements. Some of these suggestions came from the app's testers.

5.3 Future Recommendation

There are many things that can be added in future to improve this website such as user experience, and portability. There is more to be done, thus this application can be seen of
as a launching pad for something bigger to come. All of them will need more time and resources to complete, but they are still highly realistic and achievable goals.

- Addition of dark themes,
- Making a good Admin dashboard,
- Greater user experience,
- Add rating system.
- Add Content Sharing feature
- Add commenting system

REFERENCES

[1] Kapil Sharma, "Design and Implementation of a Personalized Tourism Recommendation System Based on the Data Mining and Collaborative Filtering Algorithm". ***[Accessed: 2023/8/1]***

[2] Shaohui Wang, "Research on Intelligent Recommendation Business Model of Tourism Enterprise Value Platform from the Perspective of Value Cocreation"

https://www.hindawi.com/ ***[Accessed: 2023/8/5]***

[3] Adarsh Kumar "Tourism Destination Recommendation Based on Association Rule Algorithm". ***[Accessed: 2023/8/2]***

[4] "Bcanotesnepal," 7 February 2021. [Online]. Available: https://bcanotesnepal.com/bca- sixth-semester-project-sample-for-project-ii-bca-tu/. [Accessed August 2023]. ***[Accessed: 2023/8/1]***

[5] Guru99, "Entity relationship ER diagram," *https://www.guru99.com.* ***[Accessed: 2023/7/1]***

[6] W3Schools, "HTML," *https://www.w3schools.com.* ***[Accessed: 2023/7/1]***