A Minor Project Final Report on **TREK NEPAL WEB APPLICATION**

Submitted in Partial Fulfillment of the Requirements for

Bachelor of Software Engineering

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ABSTRACT

Trek Nepal is web Application where customer can easily contact with agent and book their trek

with selecting a trek guide. They can visit the web application and search different trek packages ,read news. User will be appointed treking guides after booking a trek. . They can login to the system or register in it if they want to be beacome a web application memeber.

Admin is the super user of this application.They are provided with special username and password and with the help of that they can customized all the components of the web page.Admin is responsible for the updating,deleting all the componets of the webpage dynamically.It is customized in such way that they can view all the data of the databases in the admin panel.

ACKNOWLEDGEMENTS

I would like to thank my project supervisors xxxx and Mr. xxxx for his regular support and gratitude which helped me to undertake this project. I have been greatly benefited from his regular critical reviews and inspiration throughout my work.

I would like to express my genuine thanks to the Co-ordinator MR.xxx who gave me an opportunity to undertake such a great challenging and innovative work. I am very grateful for her guidance, encouragement, understanding and insightful support in the development process.

I am also thankful to our HOD Mr.Briendra Bista sir for their continuous encouragement, suggestions and moral support throughout the duration of my proposal defense.

CHAPTER 1 – INTRODUCTION

1.1 Background of the System

Trek Nepal is web based application which keeps well-organized inventory for treking spots in nepal. This is a system where customer can search there destination and book a trek along with treking guide. This system is so responsive that it can be open in several size devices . Users can sign in to to become a app member and to get special offer. User can also read news update on this product.User can select different trek guide and conform there trek booking. Afterwards the users will be notified the conformation of booking . Every booking made are recorded in the systems database.

1.2 Problem Statement

Most of the current system have unmanaged interaction styles nepal. client feels difficult in interacting with the system. The products are also not well managed. Also, in some systems user feel unsecure to pay through their credit card as it does not provide good security to the customers. In the current system, there is no facility to choose trek guide. So, users have to wait for contact with other web sites to book a guide . Also, if they need to cancle their booked trek.

But this system will have good interaction styles and it will be user friendly. There have a facility to search a trek. User can cancel their booking the system . This will save time of customer as they didn’t have to gets in some scame . Admin of the system can update the destination in the system easily with Django admi panel.

1.3 Aims

The main aim of this product is to give a user and a guide a well platform to search and find a customer for trek guide.

1.4 Objectives

The objectives of this project

1. To developed a user friendly interface to book trek and trekking guides.
2. To notifed the user about the status of the trek via email.
3. To customized the contain of web page dynamically by the admin.

1.5 Scope

This is a web-based application where users can book and sign in to the system to become a member of trek nepal. This system will also facilitate online payment method in the future. Different facilities like location trackking and globel map will also be the future incremental in this project. . It is also convenient for the users as it provides accurate cost and description of the Distination. Also, user can read news and leatest update on trek related here.

The system provides following services to the users:

1. Simplifies the web -based trek booking system.
2. Provides detail information about Distination.
3. Up to date information of the trek route and place will be provided to the customer.
4. Customer can cancel the booking .

1.6 Study of the system

1.6.1 Modules:

The system after careful analysis has been identified to be presented with the following modules and roles.

The modules involved are:

1. Admin
2. Users
3. Trek Guide

Administrator

The admin is the super user of this system. He/she only have the access into the admin page. Admin will have all the information about the users and about all destination and trek guide . Admin of the system can manage database,users and booking trek guide. He/she can add, view and delete destination, can view users and block or delete users if necessary.

Also, admin can view the booking list and manage it.

Users

User of the system can view destination, search destination, edit profile and booking. New users of the system have to register in the system by providing essential details. User must login to the system before making booking a distination and choose a gudie from the system. He/she can view,and search the required , destination with out login. User can also contact with guide for getting detail .

Trek Guide

Trek guide have to sent there profile to the admin for there selection in the system.Admin can only choose a trek guide for there system .

The selected guide can post there vlog and experience with there profile.

We provide a well middlewere to assign guide to a customer .

CHAPTER 2- REQUIREMENT ANALYSIS AND FEASIBILITY ANALYSIS

2.1 Literature Review

In this study, a narrative literature review regarding culture and treking application design has been introduced. The way country is getting huge tourist in present days, this web-base application will get well status and Future success of businesses will rely on treking sites. To compete in the global trourist marketplace, local businesses need to focus on to be display in world-wide call internet. As we know that there are lot place which are not getting attention to the tourist this application can become a product which can attracted tourist to that place. There is lots of change that our government is making a huge tourist hub in nepal . We can and alots od people can get chance a make money by usig this application. There are lots of people under unemployment if they use there natural beauty and use this app they can make a lot money .

2.3.1 Functional Requirements:

Functional requirement outlines a function of its system or its components. A function is described as a set of inputs, the behavior, and outputs. Functional requirements may be the calculations, technical details, data manipulation and processing and other specific functionality that defines what a system is supposed to achieve. Functional requirement of this system is:

1. Username and password will be provided to the user after user registration is confirmed.
2. System must be able to verify and validate the user’s information.

3. The system must encrypt the password of customer to provide security.
4. System must ensure that only a registered user can book a distination from the system.
5. The system must identify login of admin, and user and guide on the system.
6. The account of the admin should be secured so that only owner can access the system.

2.3.2 Non-Functional Requirements:

It specifies the criteria that can be used to judge the operation of the system. They are compared with the functional requirements that defines the specific behaviors. Thy are used to describe the external interface, design, timing, performance and quality constraints of the system. The non-functional requirements of this system are:

Usability Requirement:

Usability means how well the system performs the specific task to achieve the specific objective with effectiveness, efficiency and satisfaction. This system provides a user friendly to customers for purchasing the products

Scalability:

It is one of the important issues when the software used in large institutions where the security plays a major role. It’s about the capability of software such as if the system runs in 5 seconds for 100 users would it also run in 5 seconds with 200 users. This is one of the major issues that should be addressed while developing the system.

Efficiency Requirement:

Using this system, customer can book and apoint in an efficient manner. It saves both time and cost of the customers.

Reliability Requirement:

The system should provide a reliable environment for both customers and owners. All orders should reach at the admin without any errors. And conformation to user after booking is successful.

Implementation Requirement:

The system is build using HTML, CSS, js, bootstrap Django framework and the database part is developed by PostgreSQL. Responsive web designing is used for making this website compatible for any type of screen.

2.4 Feasibility Analysis

The feasibility of the project is analyzed into different parts so that it is possible to create the simulation. For feasibility analysis, understanding of some requirements are essential.

The feasibility analysis is divided into three parts as described below:

Technical Feasibility:

The system is technically feasible as it can run on any device that is connected to the internet. The web-based application can be accessed through any device either it be smartphone or desktop with the help of a browser.

Economic Feasibility:

The system is economically feasible as the only cost required will be the cost to host and run the web-base application in a server and maintain the system.

Operational Feasibility:

The website uses an easy user Interface which makes the use of the website easier for anyone who has a basic knowledge of English language. It can be viewed by people from different age groups and

backgrounds. The site can be visited from any device connected to the internet with the help of a browser.

CHAPTER 3 - SYSTEM ANALYSIS

There are several SDLC methodologies available for carrying out the project. They all have got their own pros and cons. As this project is small and have got fixed requirements so, for this project we have decided to use incremental and iterative methodology. An ***iterative*** process is one that repeats a series of operations cyclically, with the intention of coming closer and closer to some desired result.sometimes there is no known way to so. But it is often possible to approximate a solution, essentially by trying a value, and then repeatedly using that value to get a more accurate solutionIf the calculation of the new approximation is easier than finding a direct solution, iteration is worthwhile.

3.1 incremental and iterative methodology

The sequential phases of incremental and iterative methodology are described below:

Iterative and incremental development is a discipline for developing systems based on producing deliverables. In incremental development, different parts of the system are developed at various times or rates and are integrated based on their completion. In iterative development, teams plan to revisit parts of the system in order to revise and improve them. User feedback is consulted to modify the targets for successive deliverables.

Iterative and incremental software development came about in response to flaws in the waterfall model, a sequential design process in which progress flows steadily downwards. It differs from the waterfall model because it is cyclical rather than unidirectional, offering a greater ability to incorporate changes into the application during the development cycle.

Iterative and incremental development can be grouped into the following phases:

- **Inception Phase:**

he Inception phase of the Unified Process (UP) consists of a period of time when the analysts are looking to gather information about the business to be automated or restructured. It is assumed that the knowledge that the analysts have about the business is minimal, and that the interaction with the stakeholders will be intense. The goal in this phase is to discover if it is worth it to do the analysis without developing too deep into the project.

- ✔ Understand the *structure and dynamics* of the target organization in which the software will be used.Understand the *current problems* of the target organization and identify *potential improvements* that can be obtained with the software.
- ✔ Assure that clients, users, and the development team share a *consistent understanding* of the target organization.
- ✔ Derive the *requirements* that will lead to the desired improvements.

- **Elaboration Phase:**

The primary goal of the **Elaboration phase** is to establish the ability to build the new system given the financial constraints, schedule constraints, and other kinds of constraints that the development project faces.

The tasks that a project team performs during Elaboration include the following:

- Capturing a healthy majority of the remaining functional requirements
- Expanding the candidate architecture into a full **architectural baseline**, which is an internal release of the system focused on describing the architecture
- Addressing significant risks on an ongoing basis

- Finalizing the business case for the project and preparing a project plan that contains sufficient detail to guide the next phase of the project (Construction)

The architectural baseline contains expanded versions of the six models initialized during the Inception phase.

The major milestone associated with the Elaboration phase is called **Life-Cycle Architecture**. The indications that the project has reached this milestone include the following:

- Most of the functional requirements for the new system have been captured in the use case model.
- The architectural baseline is a small, skinny system that will serve as a solid foundation for ongoing development.
- The business case has received a green light, and the project team has an initial project plan that describes how the Construction phase will proceed.

- **Construction Phase**:

  The primary goal of the **Construction phase** is to build a system capable of operating successfully in beta customer environments.

During Construction, the project team performs tasks that involve building the system iteratively and incrementally (see "Iterations and Increments" later in this chapter), making sure that the viability of the system is always evident in executable form.

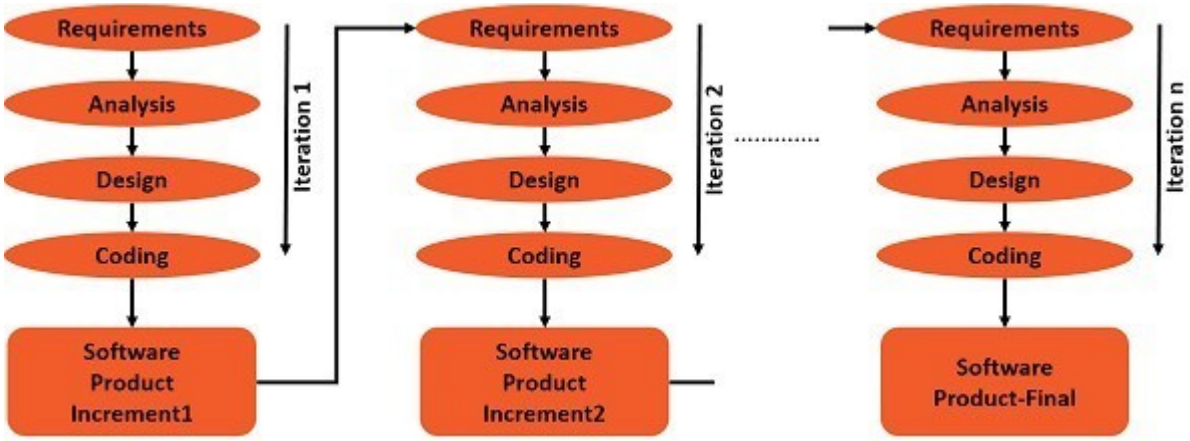
The major milestone associated with the Construction phase is called **Initial Operational Capability**. The project has reached this milestone if a set of beta customers has a more or less fully operational system in their hands.

- **Transition Phase**:

  The primary goal of the **Transition phase** is to roll out the fully functional system to customers.

During Transition, the project team focuses on correcting defects and modifying the system to correct previously unidentified problems.

The major milestone associated with the Transition phase is called **Product Release**.



Chapter 4 - SYSTEM DESIGN

System Design is the process of defining the elements of a system such as its architecture, model, data and interfaces in order to satisfy the specified requirements of system.

4.1 UML Diagrams

Unified Modeling Language (UML) is a standardized modeling language that consists of an integrated set of diagrams. They are developed to help the developers to specify, visualize, construct and document artifacts of the system.

4.1.1 Use Case Diagram

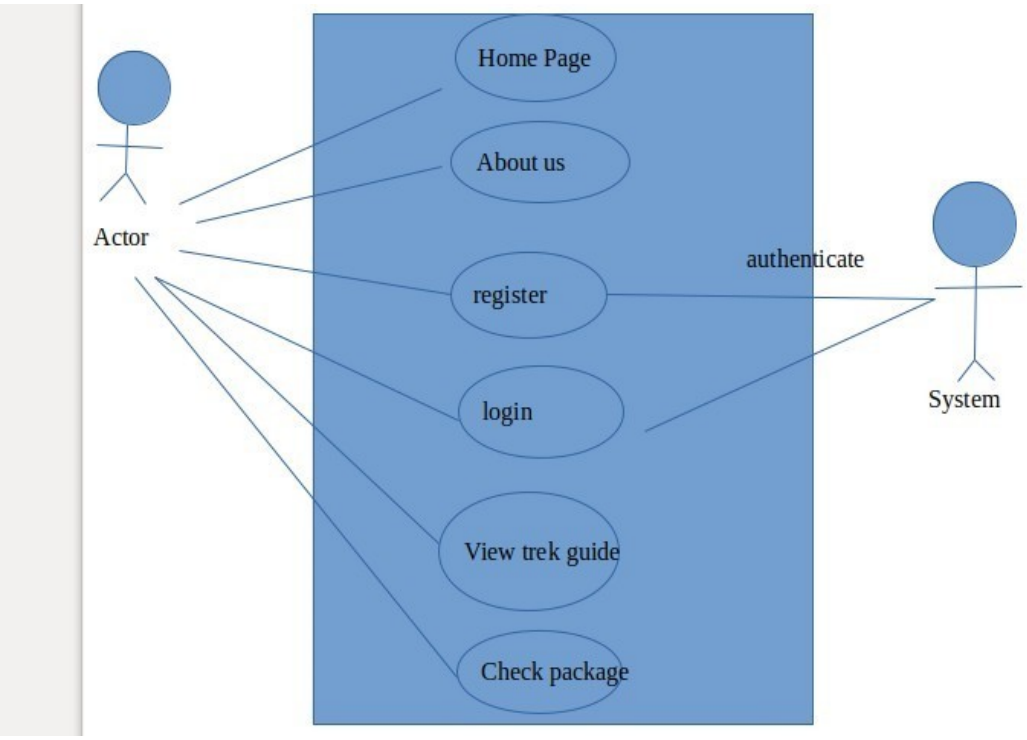


Figure 1: Use Case Diagram of web-base application trek nepal

Use case diagram is considered as behavioral diagram in UML. Use case diagram is used to summarize who uses the system, and what they can do with it. Use case diagrams specify how the system interacts with actors without worrying about the functional implementation.

In this system, there are two actors i.e. User and Admin. They are assigned to certain use cases. Each use case should provide some observable and valuable result to the actors or other stakeholders of the system. Talking about customer, they can create account, login to the system, modify account as per requirements, view items of their choice, add items to cart, view items in the cart, update their cart, purchase items of the cart, choose payment method and view order status. Admin can add, update and delete products, view the customer details, modify or delete account, view the items, after they login through the admin panel. They receive order from the customer, verify the order as well as the payment method. After delivery of the product, they update the customer’s order status.

4.1.2 Sequence Diagram

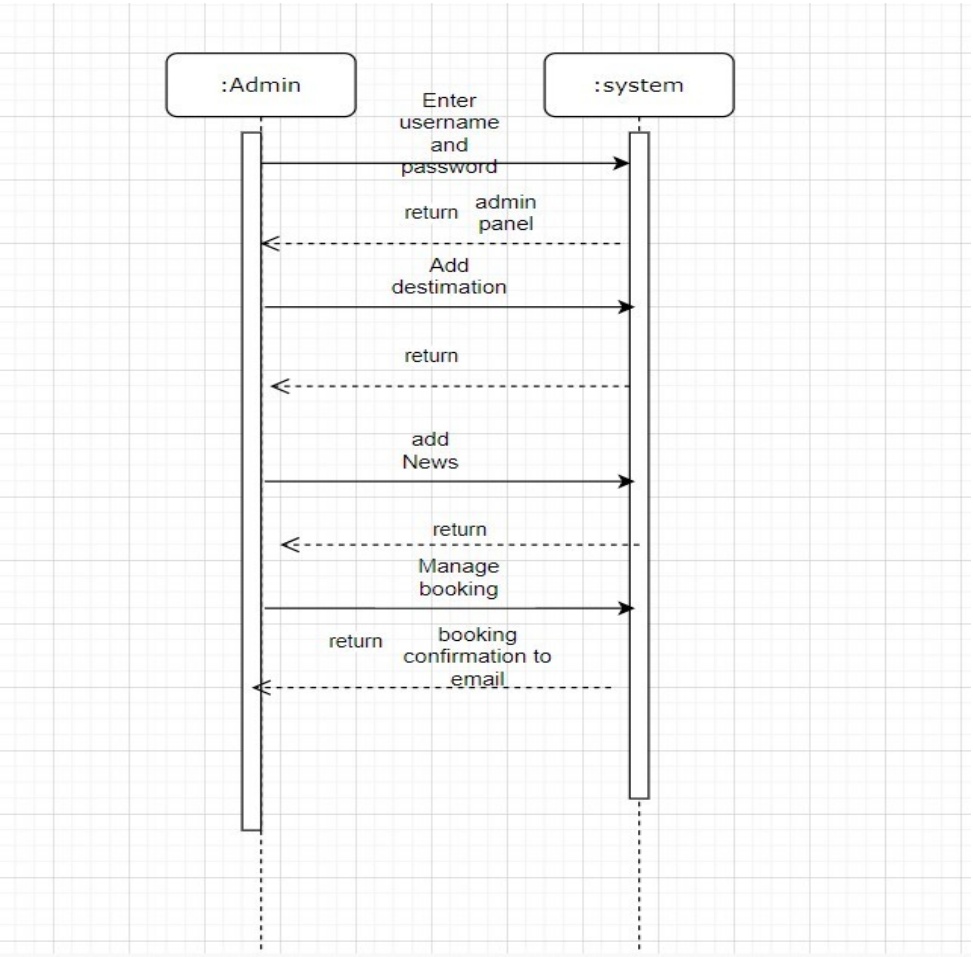


fig:Sequence digram of trk nepal

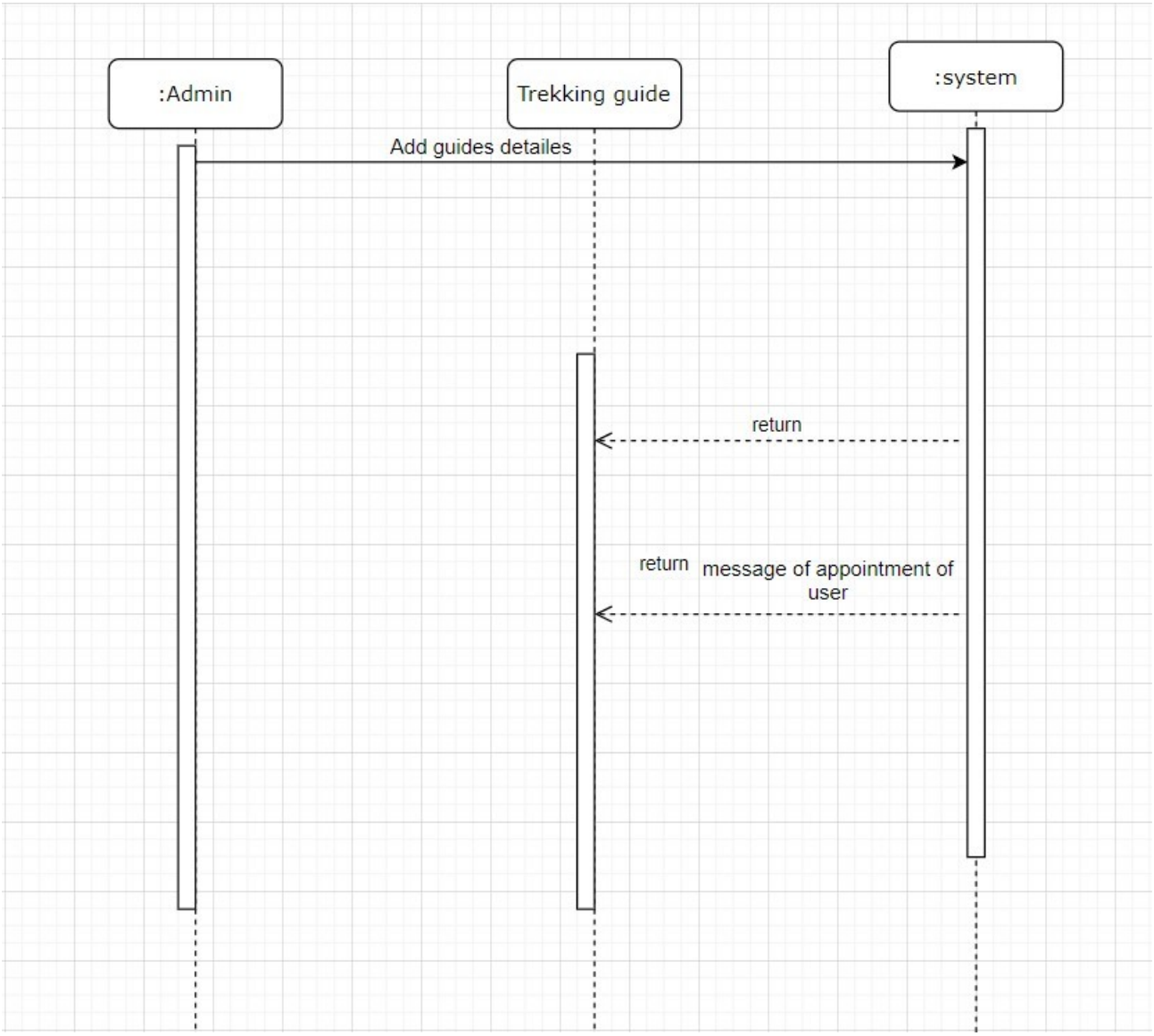


fig:sequence diagram of Trekking guide

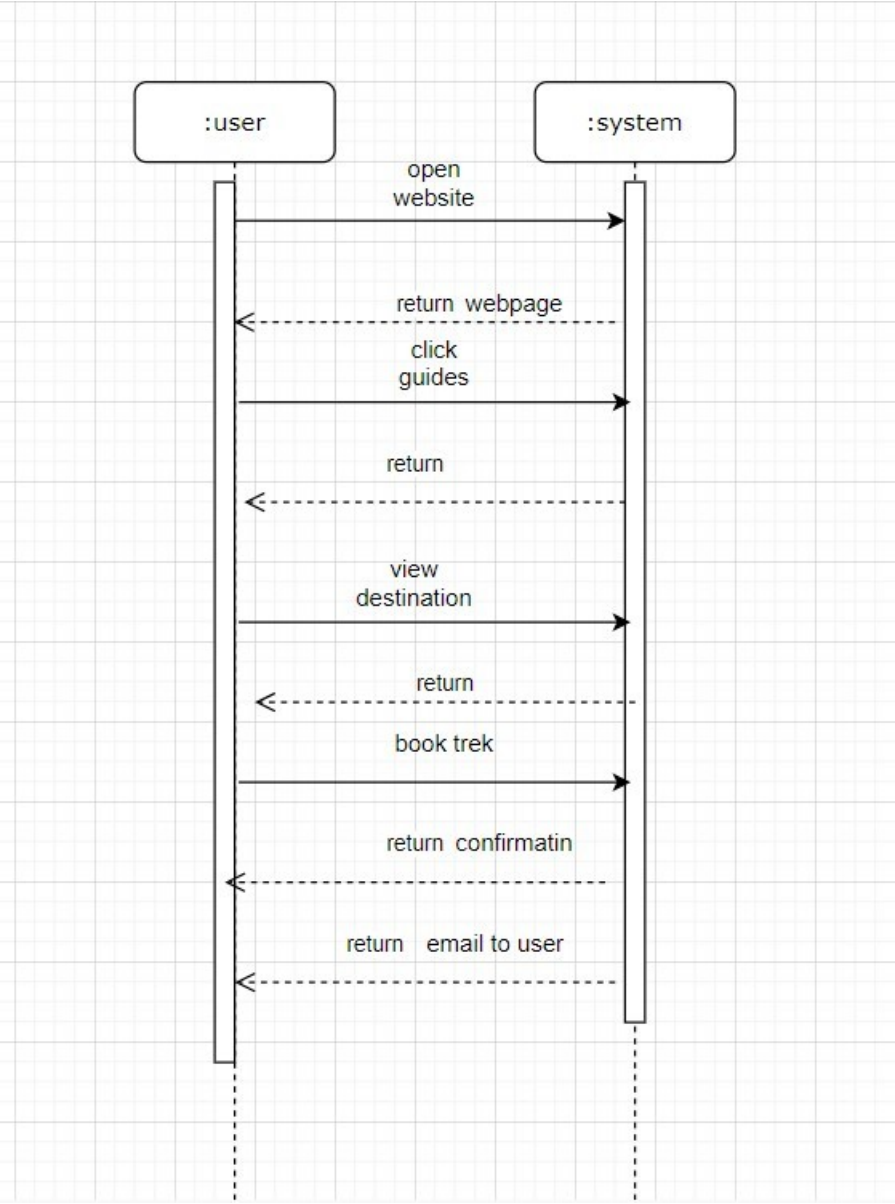


fig:Sequence diagram of trekking application

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The sequence diagram is used primarily to show the interactions between objects in the sequential order that those interactions occur. Sequence diagram is important as it shows the interaction logic between the objects in the system in the time order that the interactions take place.

First of all, customer will browse for the items in the website. Then, query about the item is done in the database. Then it is shown to the customer. Customer select the item of their choice. Then, they add the items they like to purchase to their cart. It is then displayed in the browse interface. Customer can add more than one items in their cart. Total price of the items is also displayed. Customer can pay through credit card or cash on delivery. User gets notified in their email about the product.

4.1.3 Activity Diagram

Activity Diagram for User Side:

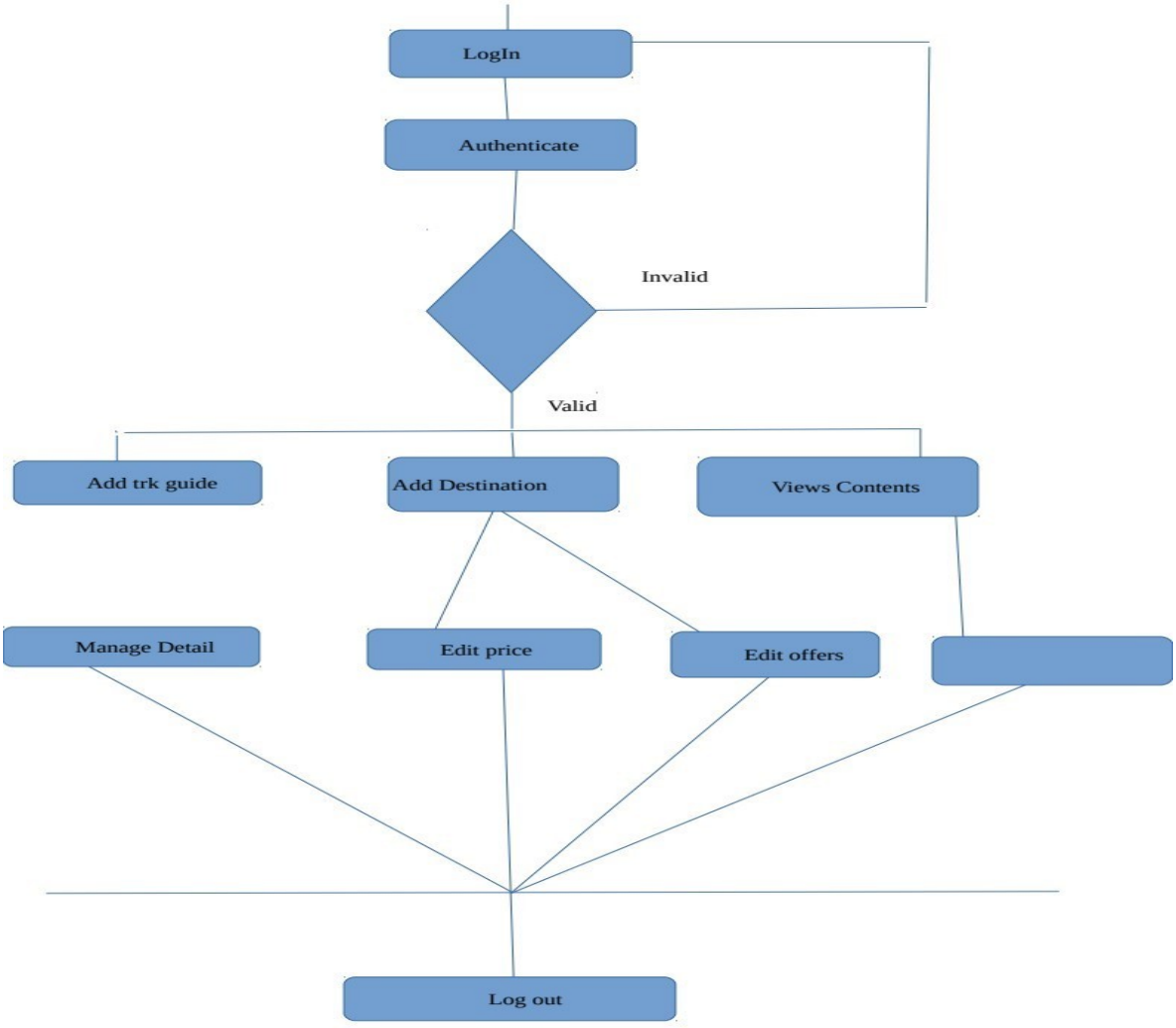


Figure 3: Activity Diagram (User Side)

Activity diagram is used to describe the dynamic aspects of the system. It is basically a flowchart which represent flow from one activity to another. The control flow is drawn from one operation to another.

First of all, user have to login to the system before buying any items from the system. After user successfully logins to the system, he/she can search for the products, edit their profile and view the product and order details. User can add the items to their cart and make purchase from the cart. At last, user can logout their account from the system before leaving the system.

Activity Diagram for Admin Side:

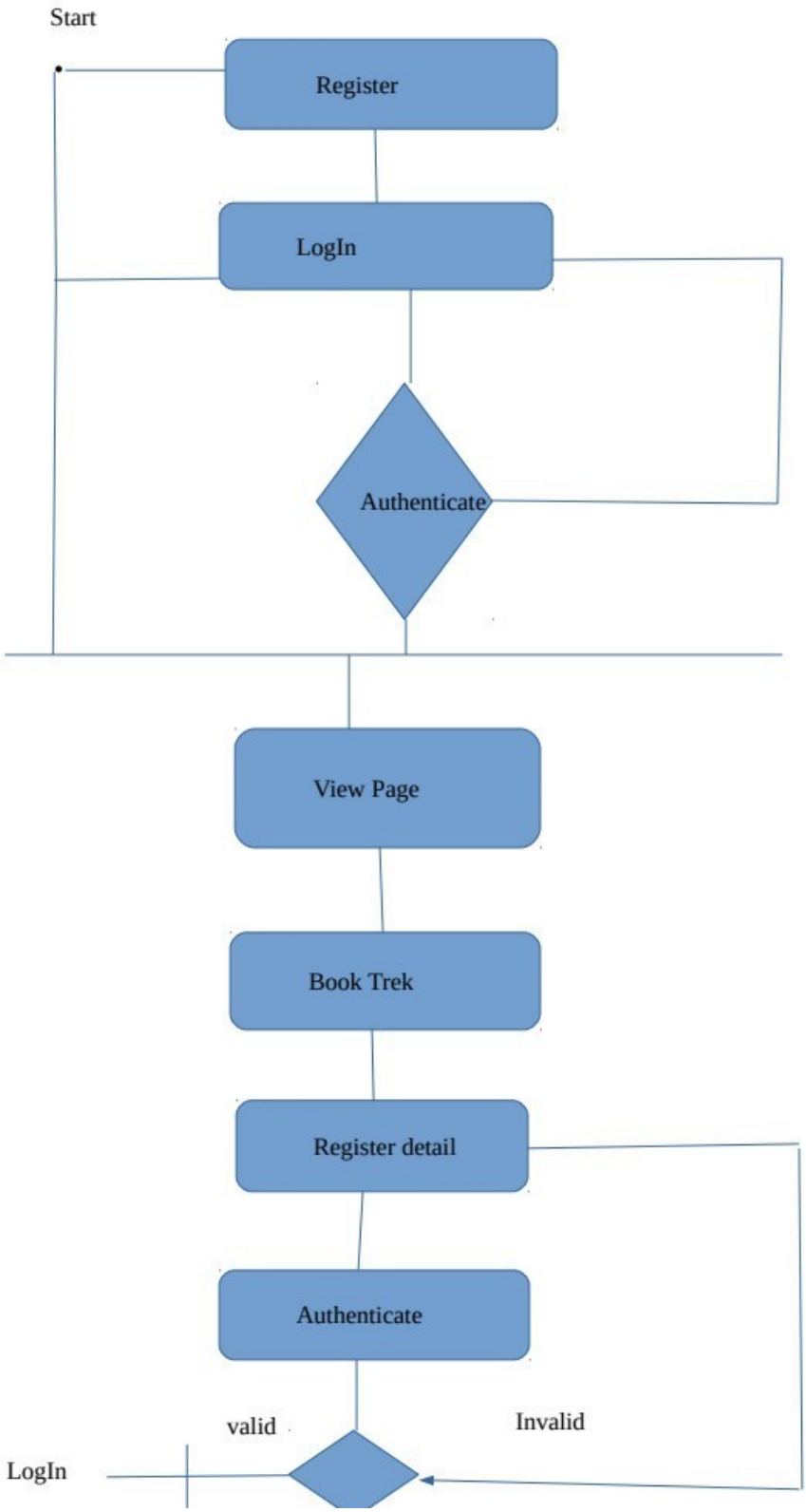

Start
Register
LogIn
Authenticate
View Page
Book Trek
Register detail
Authenticate
valid
Invalid
LogIn

Figure 4: Activity Diagram (Admin Side) This is the activity for admin side of the system. First of all, admin has to enter their username and password to enter the admin panel. After admin enters the admin panel, he/she can perform different tasks like add products, add category, manage orders and users. Admin can modify the details of the system, edit product details including price, description and confirm or cancels the orders made by the customers. Admin can logout of the system after completion of the tasks.

4.1.4 Class Diagram

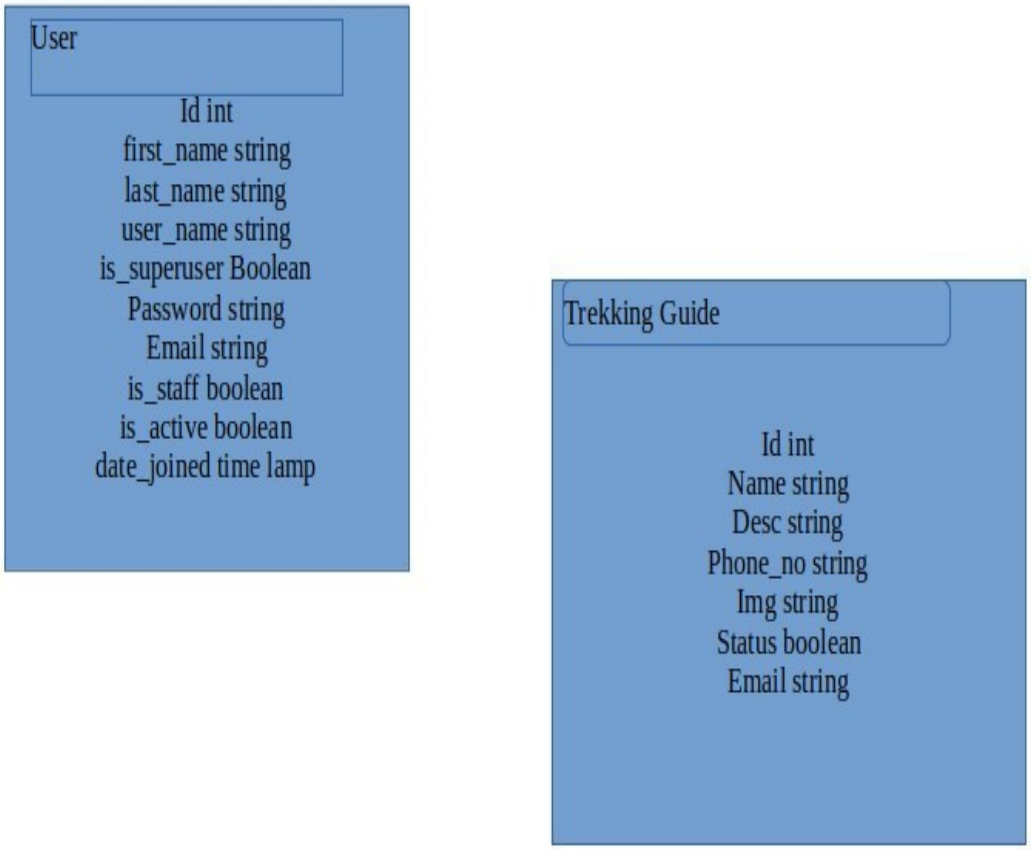


Figure 5: Class Diagram of Online Elecctronic Store

Class Diagram is used to show the different objects in a system, their attributes, their operations and the relationships among them. Class diagrams are broadly used in the demonstrating of object-oriented systems because they can be mapped directly with objectoriented languages.

In this system, there are different classes like web user, customer, order, account and so on. Each classes have their own attributes and methods as well. Relation among classes are also shown. User can have no or one shopping cart. One shopping cart is associated to one customer and each

customer have one account. One customer can order many products and their account can do zero or more payment. One order of customer can have many line items.

4.1.5 ER diagram

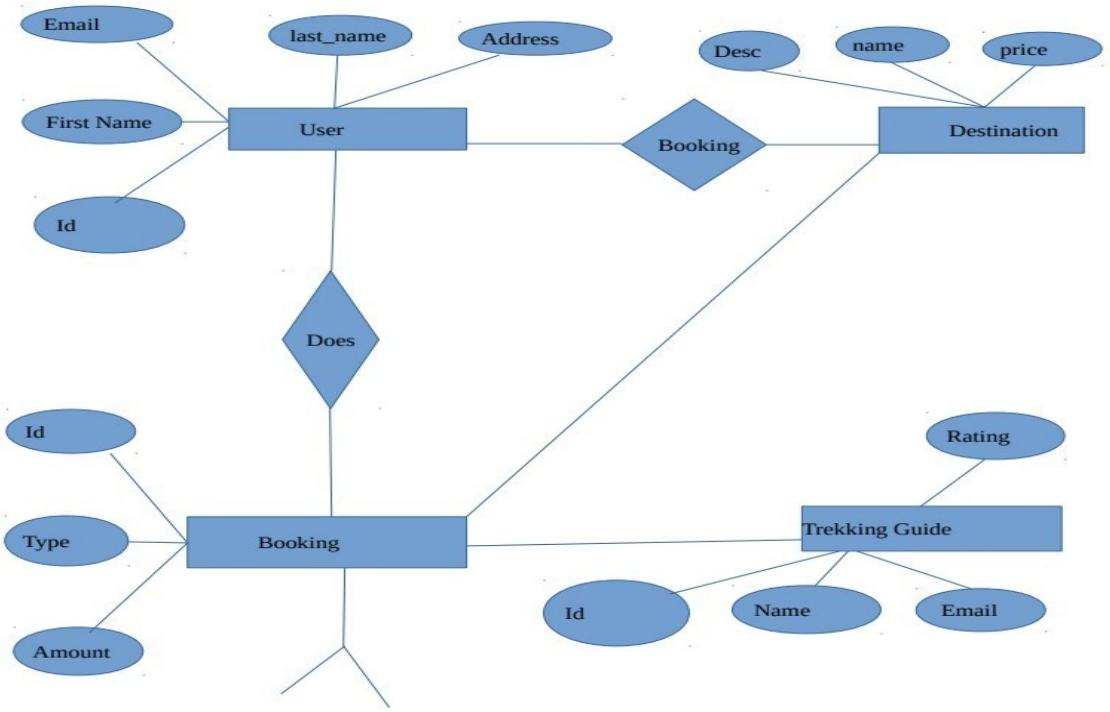


Figure 6: ER Diagram of Online Electronic Store

Entity Relationship (ER) diagram is a graphical reprsentation of different entities and the relationship among those entities. It is a structural design used for database design. ER diagram consists of different entities, attributes and the relationship between the entities.

In this system, there are several entities like customer, product, category, shopping cart, order, payment and so on. These all entities have got some attributes and between the entities there is a decision box which shows the relationship among the various entities. Entity customer has

various attributes like cid, name, email, contact, password, address and entity product has attributes like pid, category, subcategory, name, company, price, description. Also entity product has other two entities i.e. category and subcategory and they have got the attributes of their own as shown in above figure. Customer holds relationship with entity product i.e. they can order one or more products from the system. Customer can add the products to their shopping cart. Each customer has got one shopping cart. Shopping cart has got attributes like quantity, total cost and products name. Customer can make order from their shopping cart. One customer can make one or more than one orders at a time. Entity order has different attributes like id, userid, pid, quantity, orderdate, orderstatus, paymentmethod. Customer can also view their order details. After the order is made, customer has to do payment for the items purchased.

In this way, ER diagram helps to show all entities of the system, attributes of all those entities, and shows what relationship exists among these entities.

CHAPTER 4 - PROTOTYPE/PRODUCT DEVELOPMENT

4.1 Introduction

In this chapter I’m going to explain all the activity page of the system for the users who interest to study about the system. The page by page of the system will be explained here on how user can use each function of each page.

4.2 Interface explanation

4.2.1 Home page

When user opens the site, home page is displayed at first. From this page, user can perform the operation he/she wants.User can search a distination which they want . User can view different distination in home page where there will be cost mention to. User can also view their can appoint guide and select manually. There is a footer at the end of the page from where user can visit the systems contact number email address and information about the system is also provided.

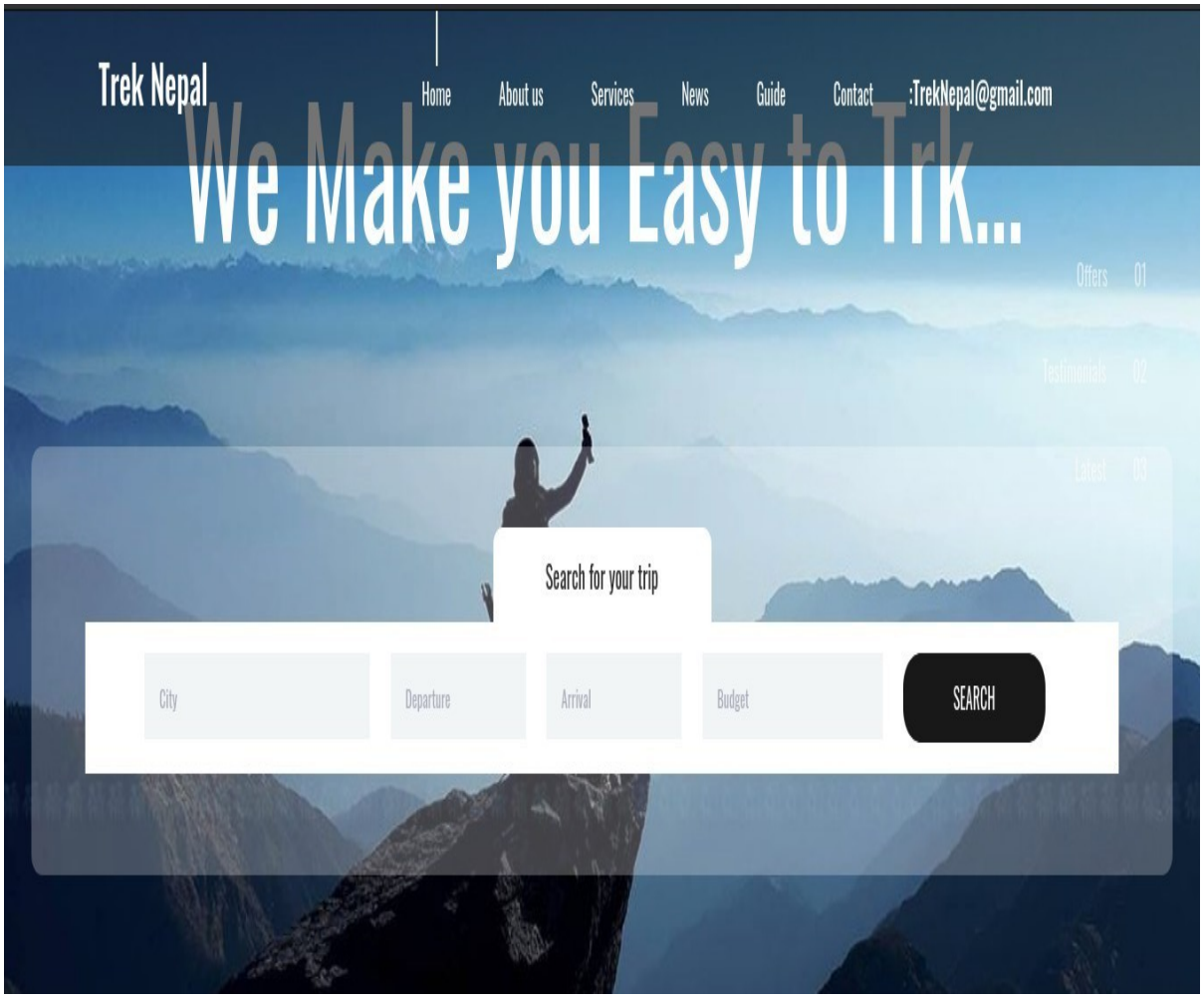
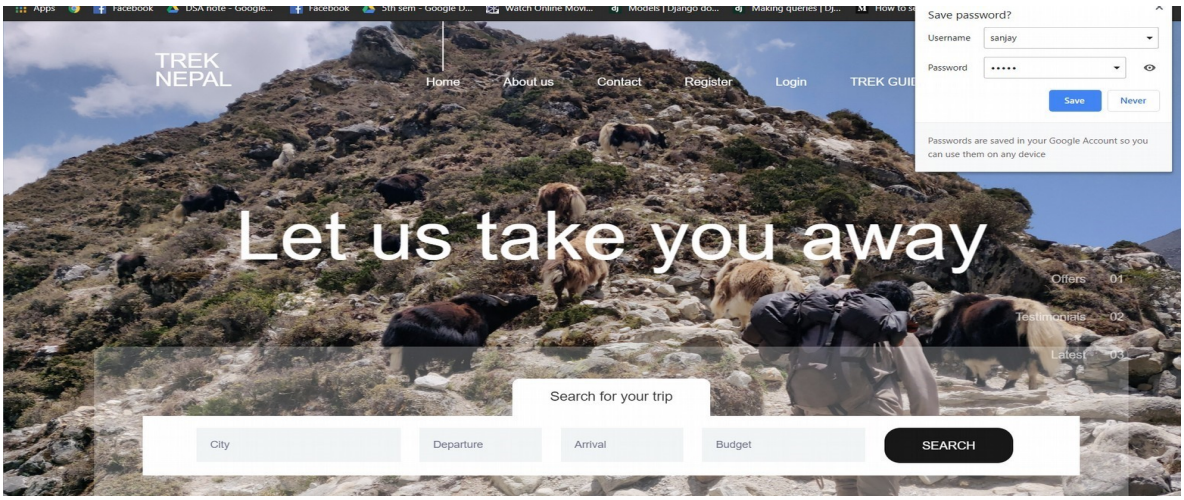
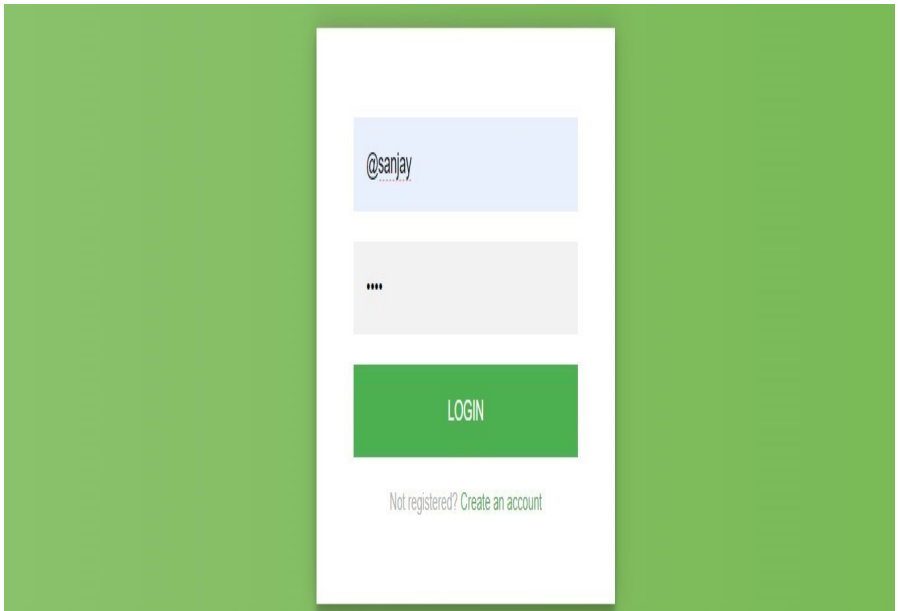


Figure 7: Search Interface of trek nepal



This is the middle or body part from the home page. This is how the distination list are separately kept in the system. Mobiles are kept in one section i.e. Smart phones and laptops are kept on next laptop section. This will be easier for the users to search the requires products.



4.2.2 Login page

This is the login page of the system. Here, user can sign up for new account by filling their details or the registered user can directly login to the system. Before conform any booking or selecting guide, user have to login to the system. Also, if user forgets the password, he/she can click forget password from where they will be redirected to the forget password page and they can recover their account.

Figure 9: Login Page

4.2.3 Distination Details Page:

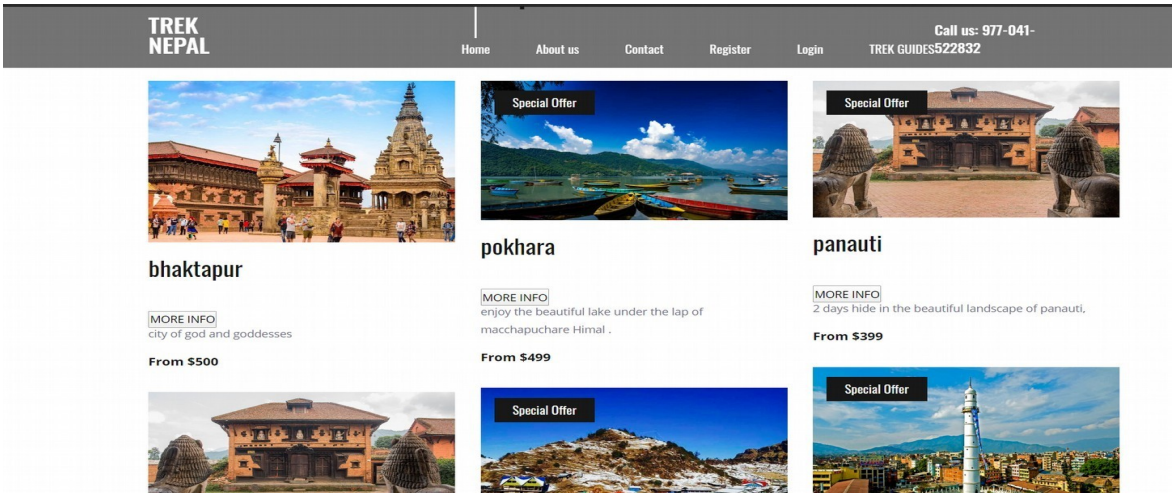


fig:Distination details

This page contain all the distination package with their images descrination . Along with image this page contain price and offer given by admin.User can book there Trek along in this page

Figure 10: Destination detail page

Below of the product details page, there is the detailed description of the product given in a systematic manner. User can leave the reviews for the products from here. The related products are also at the bottom.

4.2.4 Booking

User can directly go to home page and select the loaction where they want to go from the home page. User can select the place and select the booking option from there . Before proceeding to booking and selecting guide first of all user have to login to the system. In Booking field user have to fill there name ,email and price and conform the transaction.

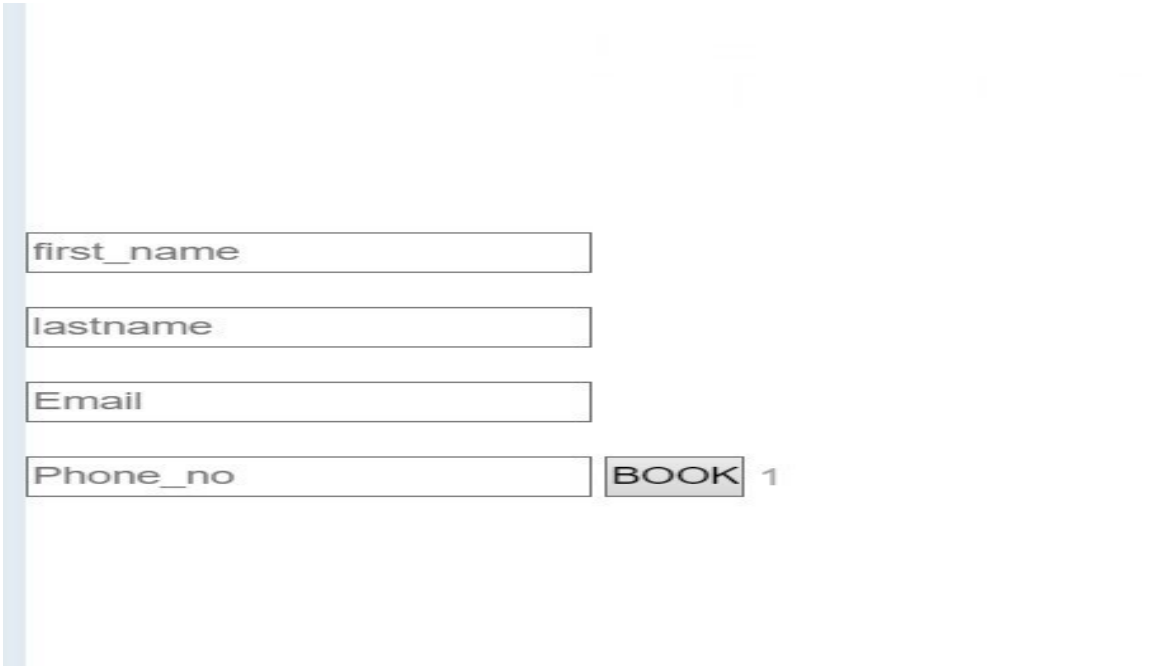


Figure 11: Booking Form

4.2.5 Booking Error

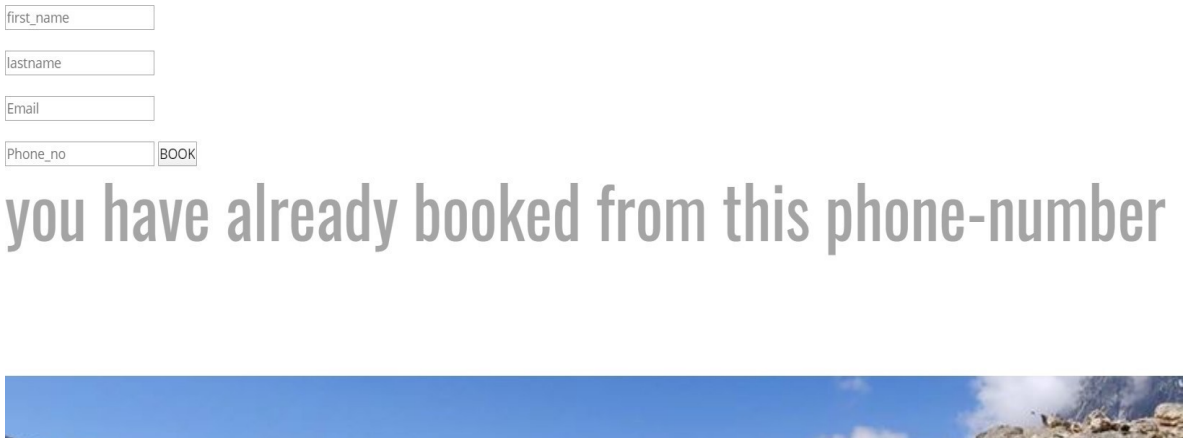


Figure 12: Booking error

our system can identified the number of user from which they have already booked a trek .

4.2.6 Admin Login Page:

This is the login page of the system for admin from where admin has to provide the username and password to enter to the admin panel of the system. For managing the users and adding, updating and managing the distination and del the post and have lots of power .Admin have to login to the system at first. Also, admin can go back to portal from this page.

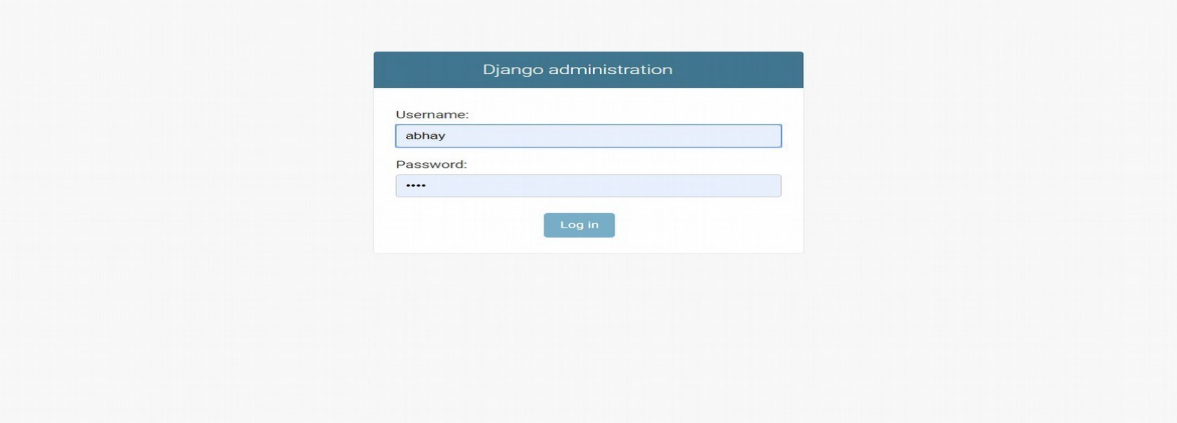


Figure 13: Admin Login Page

4.2.10 Insert Distination:

For inserting new Distination , admin has to go inside to local host in Django panel and then select image add describtion and add the destination. Admin has to insert the Destination name, price before and after discount. After adding destination admin can view those thing in webpage

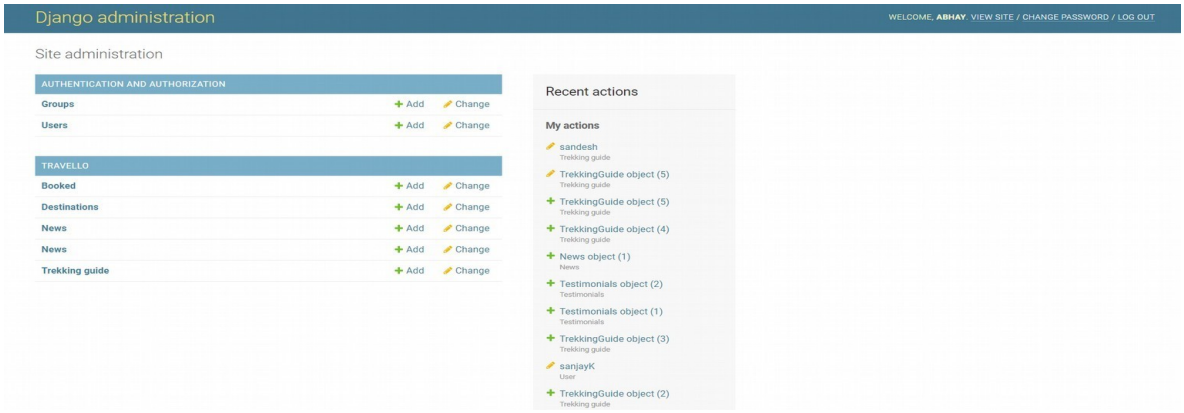


Figure 17: Adding or removing page

CHAPTER 5 - IMPLEMENTATION

5.1 Tools Used

5.1.1 HTML

HTML stands for Hyper Text Markup Language. It is the standard markup language which is used for creating web pages and web apps.HTML elements are the building block of HTML pages which are represented by the tag. These tags are not displayed in the browser.

5.1.2 CSS

Cascading Style Sheet (CSS) is a language that describes the presentation of a document which is written in markup language like HTML. It describes how HTML elements should be displayed. They are used to format the layout of web pages.CSS are used in HTML pages for giving design to HTML pages defining text styles, color, margin, padding and so on.

5.1.3 Bootstrap

“Bootstrap is a free and open-source front-end framework used to develop websites and web applications”. It contains HTML and CSS based design templates which is used for typography, forms, buttons, navigations and other interface components, as well as for optional JavaScript extensions. Unlike many earlier web frameworks, it concerns itself with front-end development only.

5.1.4 JavaScript

JavaScript (JS) is an object-oriented computer programming language commonly used to create interactive effects within web browsers. It is a client-side scripting language. JS code can be inserted anywhere within the HTML code. The vast majority of web pages use JavaScript to make web pages more attractive.

5.1.5 Django Framework

Django is a widely-used Python web application framework with a "batteries-included" philosophy. The principle behind batteries-included is that the common functionality for building web applications should come with the framework instead of as separate libraries.

For example, authentication, URL routing, a template engine, an object-relational mapper (ORM), and database schema migrations (as of version 1.7) are all included with the Django framework. Compare that included functionality to the Flask

framework which requires a separate library such as Flask-Login to perform user authentication.

5.1.6 POSTGRE

PostgreSQL is an advanced, enterprise class open source relational database that supports both SQL (relational) and JSON (non-relational) querying. It is a highly stable database management system, backed by more than 20 years of community development which has contributed to its high levels of resilience, integrity, and correctness. PostgreSQL is used as the primary data store or data warehouse for many web, mobile, geospatial, and analytics applications. The latest major version is POSTGRESQL 11.

5.1.7 VIRTUAL STUIDO CODE

Visual Studio Code is a lightweight but powerful source code editor which runs on your desktop and is available for Windows, macOS and Linux. It comes with built-in support for JavaScript, TypeScript and Node.js and has a rich ecosystem of extensions for other languages (such as C++, C#, Java, Python, PHP, Go) and runtimes (such as .NET and Unity). Begin your journey with VS Code with these introductory videos.

CHAPTER 6 - TESTING AND RESULTS

6.1 Testing Strategies:

Software testing is the process of validating and verifying that a system works as expected, satisfies the needs of customers and meet

the requirements that guided its design. It is a critical element of a software quality assurance and it represents the ultimate review of specification, design and code generation.

Software testing is an investigation conducted to provide user with information about the quality of the service which is under test. Once the source code is generated, system need to be tested to uncover as many errors as possible before launching it. The main goal is to design a series of test cases that this system has a high probability of finding errors.

6.2 Testing Objectives:

The major objectives of Software Testing are:

1. Uncover as many as errors (or bugs) as possible in a given timeline.
2. Demonstrate a given software product matching its requirement specifications.
3. Ensure that key functional and non-functional requirements are examined.
4. To bring the tested software, after correction of the identified errors and retesting, to an acceptable level of quality.

6.3 Functional Testing

It is a type of software testing where the system is tested against the functional requirements. Each features of the system are tested by providing them input and examining the output. It is done for testing the functionality of the system. It is a kind of black box testing performed to check that the system is functioning as expected.

6.4 Integration Testing:

It is the process of bringing together all the modules and testing them. It is a systematic technique for conducting tests to uncover errors associated with interfacing. The main purpose of integration testing is to verify functional, performance and reliability requirements placed on major design items.

It is the logical extensions of unit testing. In integration testing, two or more units that have already been tested are combined together forming a single component. The idea is to test combination of pieces and eventually expand the process to test the modules with other modules.

6.5 System Testing:

System testing is the testing of behavior of a complete and fully integrated software product based on the software Requirements Specification (SRS) document. In system testing some or all of the components in a system are integrated and the system is tested as a whole. System testing should focus on testing component interactions. System testing involves integrating components to create a version of the system and then testing the integrated system. System testing checks that components are compatible, interact correctly and transfer the right data at the right time across their interfaces.

6.6 Acceptance Testing:

User acceptance testing is a level of testing where the whole system is tested for final acceptability. The main purpose of conducting this test is to test whether the system is user friendly and meets the requirements of users or not. The acceptance tests give the customer confidence that the application has the required features and that they behave correctly. The system was provided to my friends and colleagues and asked them to run it on different devices. The feedback was acknowledged and the application performance was improved

CHAPTER 7 - CONCLUSION AND SUGGESTIONS

7.1 Introduction

After the system is build, it needs to go through the maintenance phase and evolution phase to make it better and enhance it. The system may have some errors and fault in testing process, but providing solutions to the problems helps to improve the quality of the system and also helps to reduce risks in the future. The system has almost met its stated requirements and objectives.

7.2 Advantages of the system

As this is web-application, where user can log in and book and selected a guide anywhere and anytime they want. This system has many advantages. Some of them are:

1. The system is completely menu driven and it is user friendly.
2. It is very convenient to use as customer can book and look for perfect location anytime and anywhere.
3. It provides detailed information about the unrated place of nepal.
4. Customer has special offer for visit nepal 2020.
5. It saves both time and cost of customer.

7.3 Disadvantages of the system

This system has got some limitations or it has some disadvantages. But these problems can be solved in the future development. So, I have listed the disadvantages of this system along with the desired solutions:

1. When new user does registration in the system, they are directly registered. No email verification system is implemented. So, there is a high risk of fraud. Email Verify can be used for verifying email during signup.
2. This system is not accessible to the public. So, it can be deployed on to the web server from where everyone who has got internet connection can only visit web application .
3. System doesn’t facilitate online payment for the users. User has to pay cash on delivery. We can use third party payment gateway in the system for adding online payment facility.1

7.4 Future Development

1. Email verification system will be implemented in the system while new users register to the system to avoid fraud users or to enhance more security so that customer feel safe to do shopping from this system.
2. The system will have online payment facility like paypal ime and mastercard acceptance.

7.5 Conclusion

An web application for trek portal provides environment to customers for book and register as a member of trek nepal.It is a form of online trek book app which allows customers to directly book a best place to them. This allows users to select from a tourist gudie of different different place . The primary objective of this system is to provide user friendly and easy environment to the user and and gudie can also found cuctomer.