



**A PROJECT REPORT**  
**ON**  
**GHUMENTE: An Application to Build Online Platform for booking**  
**guide**

**Submitted To:**

**Department of Computer Science and Multimedia**  
**National College of Management and Technical Science**

**Samakhusi, Ranibari,**  
**Kathmandu, Nepal**

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*Submitted in partial fulfillment of the requirements for the 7th  
Semester Project.*

**Date: 12/27/2025**

**Kathmandu, Nepal**

## **ABSTRACT**

“Ghumente” is a software solution designed to address the challenges faced by tourists visiting Nepal by offering a convenient, reliable, and user-friendly digital platform. The system provides tourists with proper accommodation options along with professional local guides to enhance their travel experiences within the country. One of its key features is the integration of an advanced chatbot that assists users by suggesting popular destinations, cultural attractions, and trusted local guides, ensuring personalized and interactive support. The backend of the system is developed using Java Spring Boot, while the frontend incorporates modern web technologies to ensure smooth navigation and usability. By bridging the gap between tourists and service providers, “Ghumente” not only simplifies trip planning but also contributes to the promotion of Nepal’s tourism sector and supports local communities through increased opportunities. This project aims to foster digital transformation in tourism while ensuring accessibility, transparency, and efficiency for both travelers and guides.

## **ACKNOLADGEMENT**

This project, titled “Ghumente,” is being developed as a part of my 7th semester academic requirement. It focuses on creating a digital platform to help tourists easily find guides and accommodations in Nepal. With the guidance of my mentors and teachers, I have been able to improve my technical knowledge and understand how to apply what I have learned in real-life situations. I am also very thankful to my college for providing all the necessary facilities, resources, and mentorship that made it possible to carry out this project smoothly. Their constant supervision and feedback motivated me to keep improving and stay focused on my goal. “Ghumente” is a special project for me because it aims to support Nepal’s tourism sector by using technology in a smart and useful way. I believe it will play a positive role in promoting local tourism and connecting travelers with reliable guides and services. Finally, I want to express my deepest appreciation to my family and friends. Their encouragement, emotional support, and patience have been a great source of strength for me throughout this journey. They always motivated me to stay positive and keep working hard, even during challenging times. Without the support, motivation, and belief of my teachers, mentors, family, and friends, the completion of this project would not have been possible.

**RAHUL PARAJULI**

**LC00021000840**

## **DECLARATION**

I hereby declare that the project work entitled "Ghumente" submitted to the Department of Computer Science and Multimedia, National College of Management and Technical Science, is my original work, carried out under the supervision of Mr. Kapil Shrestha.

This work has not been submitted anywhere else for the award of any degree or diploma.

---

Rahul Parajuli

Date: 12/27/225

## **CERTIFICATE FROM SUPERVISOR**

This is to certify that the project work entitled "Ghumentey" submitted by Mr. Rahul Parajuli in partial fulfillment of the requirement for the 7th Semester Final Year Project of the Bachelor of Information Technology has been carried out under my supervision.

To the best of my knowledge, the matter embodied in this report is original work and has not been submitted earlier for the award of any degree or diploma to any institution.

---

Mr. Kapil Shrestha

National College of Management and Technical Science

Kathmandu, Nepal

## PREFACE

This project, titled “Ghumente”, has been developed with the aim of promoting tourism by providing a simple, reliable, and digital platform for travelers to explore and book local guides and services in Nepal. The idea behind this project emerged from the need to bridge the gap between tourists and local service providers while ensuring convenience, transparency, and trust.

While preparing the proposal, I gained valuable insights into the challenges of tourism in Nepal and the importance of designing solutions that are both practical and user-friendly. The process enhanced my skills in problem identification, requirement analysis, and structuring project objectives clearly and logically. It also strengthened my understanding of aligning technical approaches with real-world applications. The completion of “Ghumente” has been a valuable learning journey, enhancing both technical and analytical skills, and it is hoped that this work will serve as a meaningful step toward digital transformation in Nepal’s tourism sector.

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## **LIST OF ABBERVATION**

SDLC: System Development Life Cycle

MVC: Model-View-Controller

AI: Artificial Intelligence

HTML: Hypertext Markup Language

CSS: Cascading Style Sheets

JS: Java Script

JDK: Java Development Kit

JPI: Java Persistence API

ORM: Object Relational Mapping

UML: Unified Modeling Language

API: Application Program Interface

IDE: Integrated Development Environment

DB: Database

UAT: User Acceptance Test

Pk: Primary Key

Fk: Foreign Key

SQL: Structured Query Language

# **1. INTRODUCTION**

“Ghumente” is a tourism-focused digital platform designed to connect travelers with local guides and services in Nepal. The system aims to simplify the process of exploring destinations, booking guides, and accessing authentic cultural experiences, while also supporting local communities through increased employment opportunities. Built using Java Spring Boot for the backend and a user-friendly frontend, “Ghumente” ensures reliability, transparency, and convenience for both tourists and service providers. The project envisions contributing to the digital transformation of Nepal’s tourism sector by promoting sustainable, accessible, and technology-driven travel solutions. While exploring many guide booking sites made for Nepal, I didn’t find the focus in every part that includes every part, so basically this web app will focus on each region of Nepal equally with proper accommodation and travel service.

## **1.1 BACKGROUND**

Tourism is one of the most important sectors in Nepal, attracting millions of visitors every year. However, many tourists face problems in finding reliable guides and authentic local experiences. Most guide bookings are still done manually, which often causes confusion, lack of trust, and miscommunication.

To solve these issues, “Ghumentey” is designed as a digital guide booking system that connects tourists with verified local guides easily. It allows users to view guide profiles, check their skills and ratings, and make bookings online. This system helps improve the tourism experience, promotes local employment, and supports Nepal’s move toward digital and sustainable tourism.

## **1.2 MOTIVATION**

The main motivation for developing Ghumentey comes from the need to improve the way tourists find and connect with local guides in Nepal. Many tourists face difficulties in getting reliable information and trustworthy guides, as most bookings are still done through traditional or manual methods. This often creates confusion, lack of trust, and inconvenience for both tourists and guides. Through “Ghumentey”, we want to build a user-friendly digital platform that helps tourists easily find verified guides based on their skills, location, and experience. It also gives local guides a chance to promote their services and earn fairly. By using technology, this system aims to make tourism in Nepal more organized, efficient, and accessible to everyone.

# **2. PROBLEM STATEMENT**

- Finding reliable local tour guides: It's hard to know who is trustworthy and knowledgeable.
- Arranging guide meetups: Coordinating with a guide can be inconvenient and confusing.
- Proper hotels for accommodation

### **3. OBJECTIVE**

- It is easy to find destinations for travel.
- Easy access for finding the guides and hotels within one platform.
- Promote local places and hotels outside country.
- Promote the local product made in Nepal.

#### **3.1 SCOPE OF THE PROJECT**

- Tourist Services
- Guide Booking System
- Accommodation Support
- Chatbot Assistance
- User-Friendly Interface

### **4. SIGNIFICANCE OF THE PROJECT**

The "Ghumente" project is important because it solves the problems tourists face when they visit Nepal. Many visitors struggle to find good information, trusted guides, and safe places to stay. This project provides a single digital platform that makes their travel easier and more enjoyable. For tourists, it gives comfort and safety by offering verified guides, travel suggestions, and accommodation options. The chatbot makes it easy to get quick answers and plan trips without confusion. For the local community, "Ghumente" creates opportunities for guides and service providers to connect with tourists. This helps them earn income and supports the local economy. For the technological side, the project uses modern tools like Java Spring Boot and chatbot systems to solve real-life problems. This makes it a good step toward digital development in tourism. Overall, "Ghumente" is meaningful because it promotes tourism in Nepal, supports local people, preserves culture, and encourages sustainable growth through technology.

#### **4.1 PROBLEM BEING SOLVED**

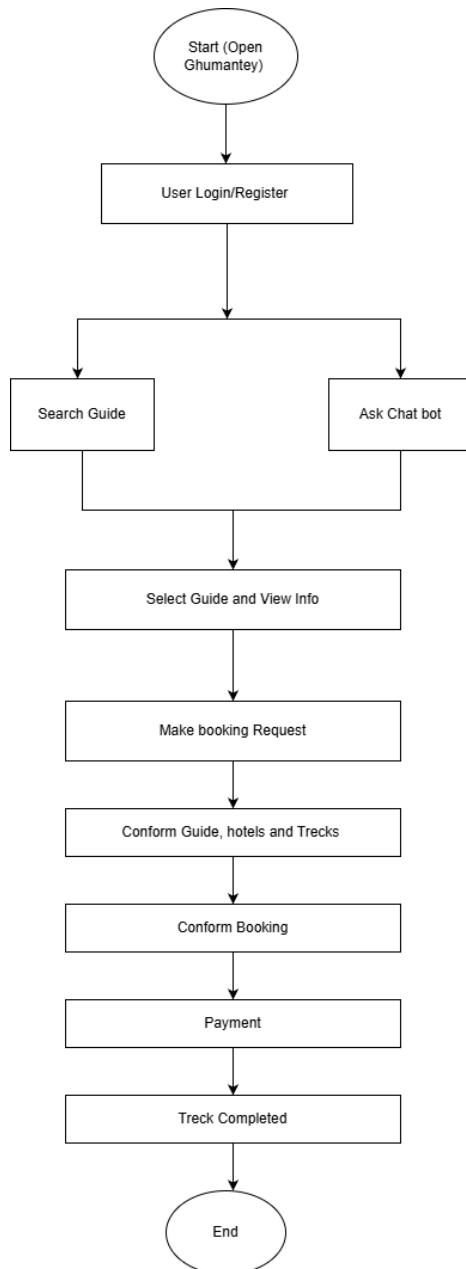
- Travelling
- Finding proper guides
- Finding good hotels
- Promotion of local products
- Affordable travel

### **5. EXPECTED OUTCOMES**

- Advance featured travelling web application.
- Growth of tourism within the country.
- Digital transformation
- Brand Building
- Sustainable tourism

## 6. FIGURES

### 6.1. Flow-Chart for “Ghumentey”:



**Fig: Flowchart Ghumente**

## 6.2. Class Diagram for “Ghumentey”:

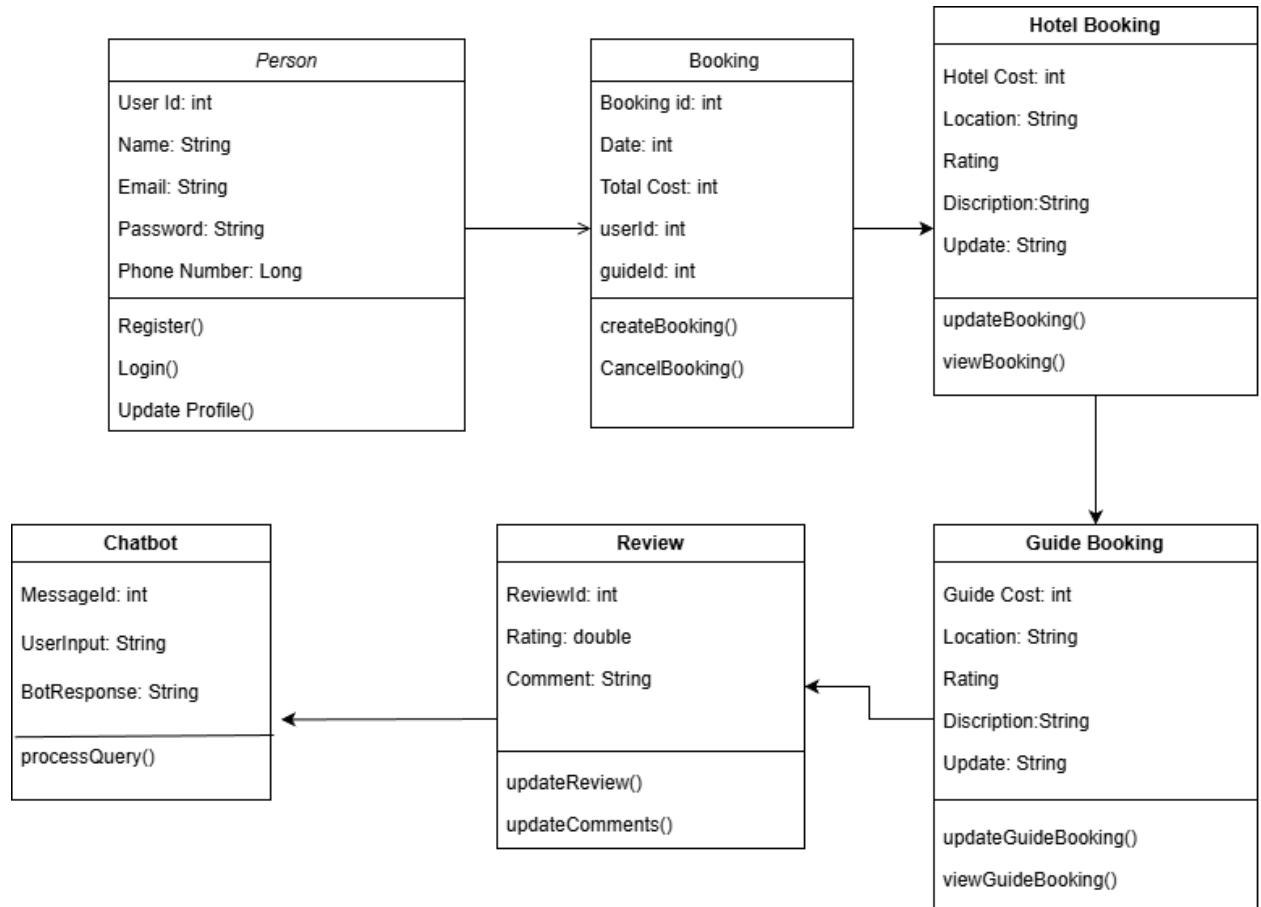
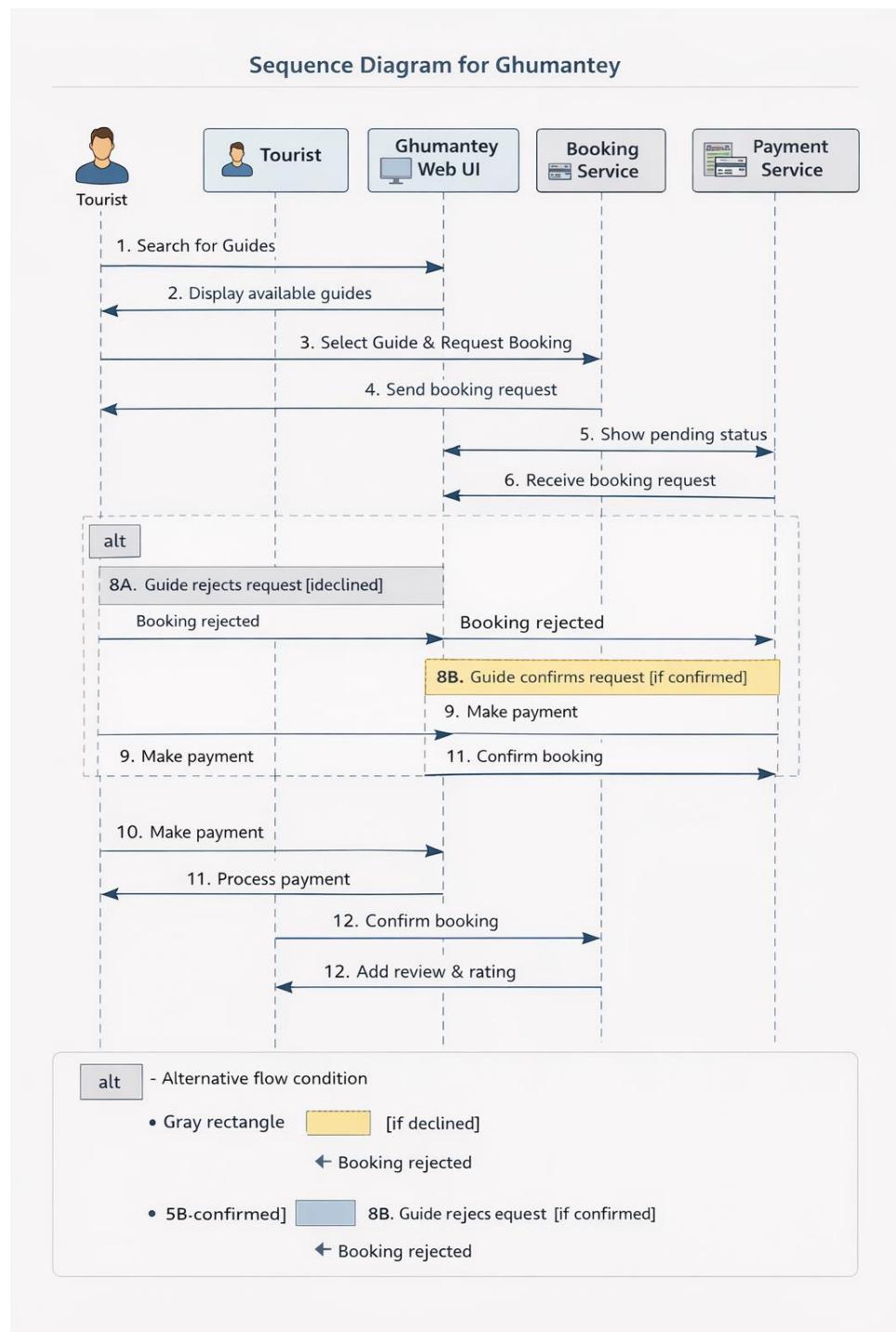


Fig: Class Diagram Ghumente

### 6.3. Sequence Diagram for “Ghumente”:



**Fig: Sequence Diagram for Ghumente**

#### 6.4. Database Schema for “Ghumente”:

##### User\_detail table:

<i>Field Name</i>	<i>Data Type</i>	<i>Description</i>
<i>user_id (PK)</i>	INT	Unique ID for each user
<i>full_name</i>	VARCHAR(100)	User’s full name
<i>email</i>	VARCHAR(100)	User’s email address
<i>password</i>	VARCHAR(255)	Encrypted password
<i>phone_number</i>	VARCHAR(20)	Contact number of the user
<i>address</i>	VARCHAR(150)	User’s address or city
<i>role</i>	VARCHAR(20)	Defines role: “USER” or “ADMIN”
<i>created_at</i>	DATETIME	Date and time of account creation

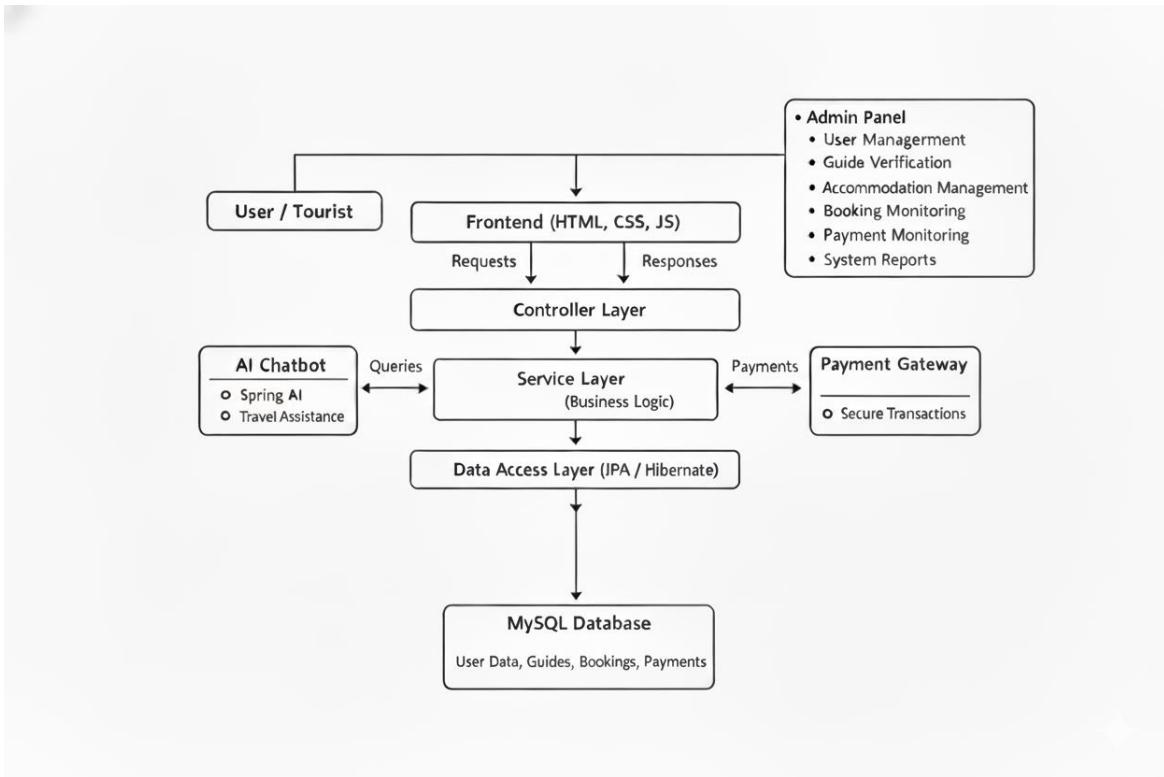
**Fig: Database Schema for user.**

##### Guide\_details table:

<i>Field Name</i>	<i>Data Type</i>	<i>Description</i>
<i>guide_id (PK)</i>	INT	Unique ID for each guide
<i>full_name</i>	VARCHAR(100)	Guide’s full name
<i>email</i>	VARCHAR(100)	Guide’s email
<i>password</i>	VARCHAR(255)	Encrypted password
<i>phone_number</i>	VARCHAR(20)	Guide’s contact number
<i>language</i>	VARCHAR(50)	Languages spoken by the guide
<i>experience_years</i>	INT	Total years of experience
<i>location</i>	VARCHAR(100)	Location or area of service
<i>rate_per_day</i>	DECIMAL(10,2)	Daily service charge
<i>availability</i>	BOOLEAN	Availability status (true/false)
<i>rating</i>	FLOAT	Average rating given by users

**Fig: Database schema for Guide**

## 6.5. “Ghumente” System Architecture:



**Fig: System Architecture Ghumente**

## 7. PROJECT PROGRESS

- **Backend:** Backend part of the project is almost completed. 65% of work has been completed and only admin panel is left and controllers are left. Entity of guides, user travel packages, trecks, admin, and database has been integrated in dao packages and “service” which connects database and controller has been completed in backend part.
- **Frontend:** Frontend part has not been started but within January 15 the web app for “Ghumente” will be completed.
- **Advance Level Chatbot:** The chatbot will be integrated after the completion of web application after 15<sup>th</sup> of January.
- **Payment Gateway Integration:** After the completion of frontend and admin panel we will integrate payment method of “e-sewa” since it gives free payment gateway integration to test the application.

```
55
56     @Override
57     public GuideDetail updateGuide(int id, GuideDetail guide) {
58         GuideDetail existingGuide = getGuideById(id);
59         if (existingGuide != null) {
60             existingGuide.setGuide_name(guide.getGuide_name());
61             existingGuide.setLocation(guide.getLocation());
62             existingGuide.setNumber(guide.getNumber());
63             existingGuide.setDescription(guide.getDescription());
64             existingGuide.setRatings(guide.getRatings());
65             return guideDetailDao.save(existingGuide);
66         }
67         return null;
68     }
69
70     @Override
71     public void deleteGuide(int id) {
72         guideDetailDao.deleteById(id);
73     }
74 }
75 package Gnumantey.turk.Gnumantey.service;
76
77 |
78
79 import java.util.List;
80
81
82 @Service
83 public class GuideServiceImpl implements GuideService {
84
85     @Autowired
86     private GuideDetailDao guideDetailDao;
87
88     @Override
89     public List<GuideDetail> getAllGuides() {
90         return guideDetailDao.findAll();
91     }
92
93     @Override
94     public GuideDetail getGuideById(int id) {
95         Optional<GuideDetail> optionalGuide = guideDetailDao.findById(id);
96         return optionalGuide.orElse(null);
97     }
98
99     @Override
100    public GuideDetail saveGuide(GuideDetail guide) {
101        return guideDetailDao.save(guide);
102    }
103
104    @Override
105    public GuideDetail updateGuide(int id, GuideDetail guide) {
106        GuideDetail existingGuide = getGuideById(id);
```

```
1 package Ghumanley.typ.Ghumanley.service;
2
3
4
5+import java.util.List;□
6
7
8 public interface GuideService {
9
10     List<GuideDetail> getAllGuides();
11
12     GuideDetail getGuideById(int id);
13
14     GuideDetail saveGuide(GuideDetail guide);
15
16     GuideDetail updateGuide(int id, GuideDetail guide);
17
18     void deleteGuide(int id);
19 }
20
21
22
23 package Ghumanley.typ.Ghumanley.dao;
24
25
26+import org.springframework.data.jpa.repository.JpaRepository;□
27
28
29 public interface GuideDetailDao extends JpaRepository<GuideDetail, Integer> {
30
31     public GuideDetail findByGuide_Name(String guide_name);
32     public GuideDetail findByLocation(String location);
33     public GuideDetail findByRatings(String ratings);
34     public GuideDetail findByDescription(String description);
35
36 }
37
38
```

```
public void setNumber(String number) {
    this.number = number;
}

public String getDescription() {
    return description;
}

public void setDescription(String description) {
    this.description = description;
}

public String getRatings() {
    return ratings;
}

public void setRatings(String ratings) {
    this.ratings = ratings;
}

}
```

```
public GuideDetail(String guide_name, String location, String number, String description) {
    super();
    this.guide_name = guide_name;
    this.location = location;
    this.number = number;
    this.description = description;
    this.ratings = ratings;
}
//Generating getter and setter

public String getGuide_name() {
    return guide_name;
}

public void setGuide_name(String guide_name) {
    this.guide_name = guide_name;
}

public String getLocation() {
    return location;
}

public void setLocation(String location) {
    this.location = location;
}

public String getNumber() {
    return number;
}
```

```
package Ghumanley.fyp.Ghumanley.entity;

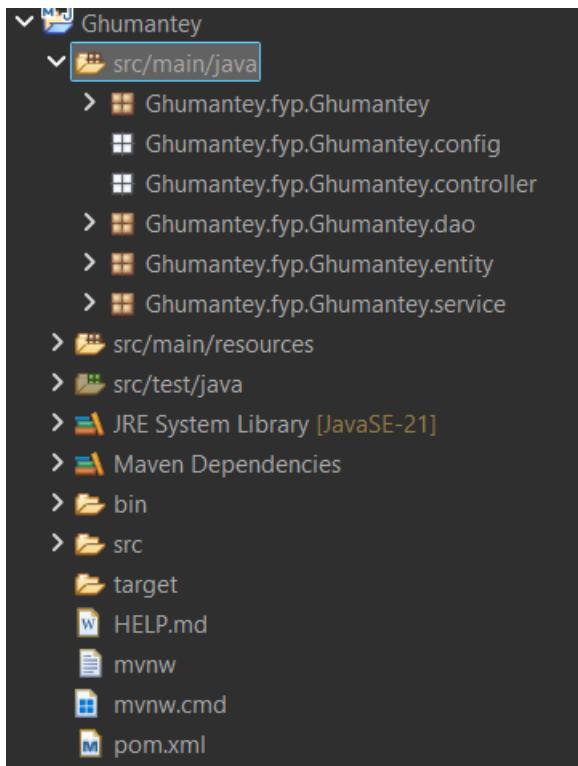
import java.io.Serializable;
@Entity
@Table(name="Guid_Details_Table")

public class GuideDetail implements Serializable {

    /**
     *
     */
    private static final long serialVersionUID = 1L;
@Id
@GeneratedValue(strategy=GenerationType.IDENTITY)
@Column(name="Guide_Name")
private String guide_name;
@Column(name="Location")
private String location;
@Column(name="Number")
private String number;
@Column(name="Description")
private String description;
@Column(name="Ratings")
private String ratings;

//Generating default constructor

public GuideDetail() {
    super();
}
```



## 8. LITERATURE REVIEW

Tourism is one of the fastest-growing sectors in Nepal, playing a vital role in the nation's economic development. The country's rich cultural heritage, natural beauty, and adventure destinations attract thousands of tourists each year. However, despite this potential, many tourists face difficulties in finding reliable guides and authentic local experiences. These challenges highlight the need for a digital platform that bridges the gap between tourists and local service providers, ensuring safety, transparency, and convenience in travel planning. To understand the opportunities and challenges of the tourism sector, several research papers and online articles were reviewed. Among them, the work of "Mr. Bharat Prasad Paudel" published in the "**Nepal Journal Online**" was particularly influential. His research on the "**Opportunities and Challenges of Tourism in Nepal**" emphasized the need for modernization and digitalization in the tourism industry. According to Paudel, adopting digital systems could enhance accessibility, promote local guides, and increase Nepal's global visibility as a tourist destination. This study provided a strong foundation and motivation for developing "**Ghumantey**" a platform aimed at promoting digital tourism and guide management in Nepal. In addition to academic literature, existing tourism platforms were analyzed to identify their features and limitations. Global applications such as "TripAdvisor" and "**GetYourGuide**" offer tourists the ability to explore destinations, read reviews, and make bookings. However, these platforms primarily focus on hotels and activities rather than personalized local guide services. Similarly, Nepal-based applications such as "Visit Nepal" and "Hamro Trip" provide travel information, hotel listings, and event updates but lack integrated systems for guide booking or AI-based chatbot support. These limitations inspired the concept of "**Ghumantey**," which aims to fill these gaps by offering all features in one platform for guide booking, trip planning, and interactive tourist support. A study of similar systems also revealed that most platforms fail to ensure the verification of guides, real-time communication, and secure payment options for tourists. Furthermore, the absence of localized and language-friendly interfaces makes it difficult for both domestic and international travelers to access authentic local experiences. Therefore, there is a strong need for a Nepal-centric tourism system that not only provides guide booking services but also enhances user trust through verified profiles, digital reviews, and AI-driven assistance. "**Ghumantey**" addresses these gaps by introducing a web-based system that connects tourists directly with certified local guides. The system will integrate features such as guide verification, booking management, AI powered chatbot assistance, and user feedback mechanisms. By implementing these solutions, the project aims to promote sustainable tourism, empower local guides, and contribute to Nepal's economic growth through digital transformation. In conclusion, the reviewed literature and existing applications reveal a clear demand for innovation in the tourism sector of Nepal. Inspired by the works of researchers like Mr. Bharat Prasad Paudel and by analyzing the shortcomings of major travel platforms, the "**Ghumantey**" project seeks to develop a modern, user-friendly, and secure guide booking system. This initiative not only enhances tourist experiences but also supports Nepal's vision of advancing towards digital tourism and sustainable

economic development. Platform like “**Hamro Trip**” helps to book and manage the flights. Since we have flight options in our travel packages, this was very fruitful for me to go through. Not only that but “**Visit Nepal**” also provided lots of information about the context of Nepal tourism.

### **8.1. LINKS OF LITERATURE REVIEW**

- Trip Advisor: <https://www.tripadvisor.com/>

Mr. Bharat Prasad Paudel:

<https://www.nepjol.info/index.php/TUJ/article/view/28683>

- Hamro Trip: <https://hamrotrips.com/>
- Visit Nepal: <https://www.visitnepal.com/>
- Google: <https://www.google.com/>

## **9. TOOLS AND TECHNOLOGY**

### **9.1. Backend Technologies:**

- **Java (JDK 17)** (Core programming language used to implement business logic.)
- **Spring Boot Framework** (Used for building the backend RESTful API and managing application configuration efficiently.)
- **Spring Data JPA (Hibernate)** (For database interaction and Object Relational Mapping (ORM).)
- **Spring AI** (Integrated for chatbot functionality to assist users in finding guides and tours.)
- **Maven** (Used for project management and dependency handling.)

### **9.2. Frontend Technologies:**

- **HTML** (For structuring the web pages.)
- **CSS3** (For designing and styling the user interface.)
- **JavaScript** (For adding interactivity and dynamic functionality to the front end.)
- **Bootstrap** (For creating a responsive and mobile-friendly UI.)

### **9.3. Database:**

**MySQL** (Used as the relational database for storing user details, guide information, bookings, and reviews.)

### **9.4. Development Tools and Environment:**

- **Eclipse / IntelliJ IDEA** (Integrated Development Environment (IDE) used for coding and debugging.)
- **MySQL Workbench** (Used for designing and managing the database.)
- **Postman** (Used for testing RESTful APIs.)
- **GitHub** (For version control and project collaboration.)

### **9.5 Server and Deployment:**

- **Apache Tomcat (Embedded in Spring Boot)** (Used as the application server.)
- **Localhost (XAMPP or Spring Boot server)** (For local deployment and testing environment.)

### **9.6. Additional Tools:**

UML Tools (Draw.io): Used for designing system diagrams such as DFD, class diagrams, and sequence diagrams.

## **10. METHODOLOGY**

Ghumente is a guide booking web application that follows System Development Life Cycle (SDLC) approach. I chose Agile model methodology for doing this project since this method is much more flexible and allows continuous updates and changes during the project.

### **10.1. Requirement Analysis**

In this phase, the main focus was to gather and analyze user needs:

- Online research was conducted with tourists and local guides to understand the problems faced during guide booking.
- Functional requirements such as user registration, guide booking, chat support, review system, and payment integration were identified.
- Non-functional requirements like security, reliability, and performance were also specified.

### **10.2. System Design**

- **Architecture Design:** Follows a layered MVC (Model-View-Controller) architecture using Spring Boot for backend and HTML, CSS, JavaScript for frontend.
- **Database Design:** Relational schemas were designed using MySQL.
- **UML Diagrams:** Class diagrams, sequence diagrams, and flowcharts were created to represent data flow and system interaction.

### **10.3. Implementation**

- The backend was developed using Java Spring Boot, with JPA/Hibernate for ORM and database operations.
- The frontend will be designed with HTML, CSS, and JavaScript, ensuring a responsive and user-friendly interface.
- Spring AI (Chatbot integration) will be implemented to assist users in finding guides and navigating the system.
- RESTful APIs will be created to handle communication between the frontend and backend.

### **10.4. Testing**

- Different testing techniques were applied to ensure the reliability and accuracy of the system:
- Unit Testing will be done for individual components.
- Integration Testing will be for combined modules once all modules are completed.

- System Testing for the complete application once it is completed.
- User Acceptance Testing (UAT) will be done with a small group of users (tourists and guides) to gather feedback.

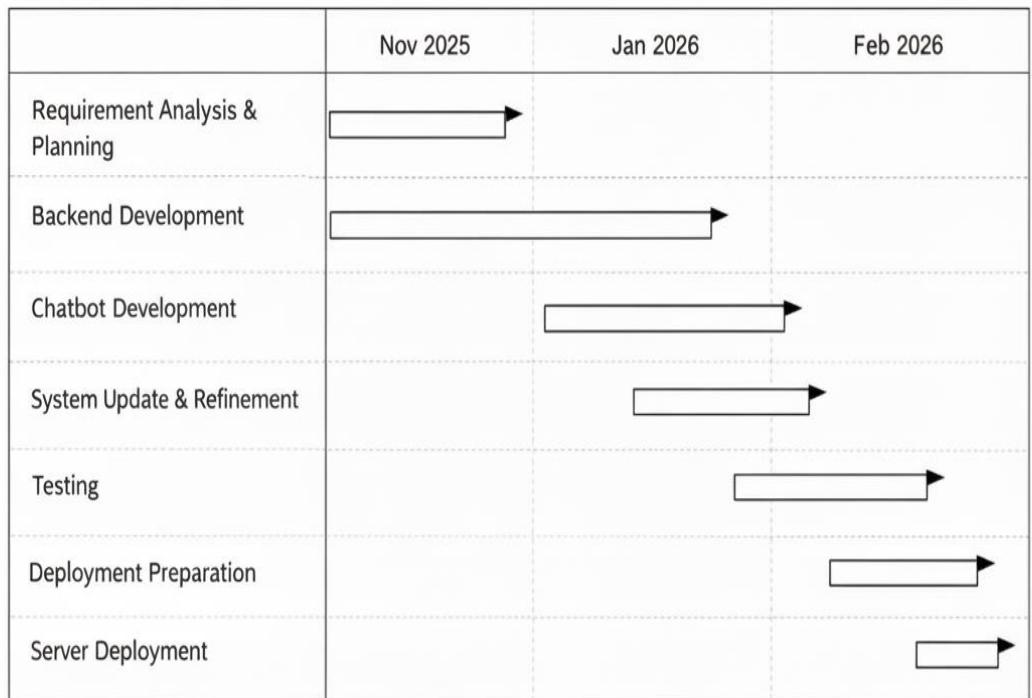
#### **10.5. Deployment**

- The system was deployed on a local server for demonstration and testing purposes.
- The deployment process included configuring the Spring Boot server and connecting it with the MySQL database.

#### **10.6. Maintenance**

- Regular updates and bug fixes were performed after testing feedback.
- Future improvements such as mobile app integration and AI based tour recommendations are planned.

## 11. PROJECT TIMELINE (GANTT CHART)



## 12.RISK ANALYSIS FOR GHUMENTEY

S.N	Risk Description	Likely Hood	Impact	Mitigation Strategy
1	Delay in completing frontend development due to design complexity	Medium	High	Divide tasks into smaller modules and use Agile sprints to ensure timely progress.
2	Integration issues between backend and chatbot system	High	High	Test APIs early and integrate chatbot in a test environment before final deployment.
3	Server or database crash during deployment	Low	High	Keep regular backups and test deployment on a local environment before hosting.
4	Payment gateway (eSewa) integration failure or bugs	Medium	Medium	Contact eSewa technical support if any issue occurs.

## **13.CONCLUSION**

“**Ghumente**” is a digital tourism platform designed to modernize Nepal’s travel industry by connecting tourists with verified local guides, hotels, and authentic travel services. Built using **Java Spring Boot** for the backend and **HTML, CSS, and JavaScript** for the frontend, it offers features like AI-powered chatbot assistance, secure **eSewa** payment integration, and user-friendly trip planning. The system supports both domestic and international travelers, promotes local businesses, and encourages sustainable tourism by highlighting rural destinations. The project emphasizes technological innovation, community empowerment, and ease of travel through a single digital platform.

## **14.FUTURE SCOPE**

- Development of a **mobile application** for easier access and broader reach.
- Addition of **AI-based travel recommendations** for personalized trip suggestions.
- Integration of **multi-language support** to attract global users.
- Implementation of **real-time chat** and **review systems** for better interaction.
- Expansion to include **international travel packages** and collaborations with global agencies.
- Continuous updates for **security, scalability, and performance improvement**.

## REFERENCES

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<https://www.nepjol.info/index.php/TUJ/article/view/28683>

**TripAdvisor:** Official Travel and Guide Platform.

<https://www.tripadvisor.com>

Serves as a practical reference for user experience design, hotel listings, and verified reviews.

**GetYourGuide:** Online Tour Booking System with Verified Local Guides.

<https://www.getyourguide.com>

Provides a model for your system's booking and guide verification feature.

**Visit Nepal Official Portal**

<https://www.visitnepal.com>

A national-level reference to align your platform with Nepal's tourism branding goals.

**Hamro Trip** <https://hamrotrips.com>

A Nepal-based example for local trip and flight booking—useful for comparing local limitations.