Online Chatbot Based Ticketing System

A PROJECT REPORT

Submitted by,

Sandesh W D	**20211CSE0364**
Darshan A R	**20211CSE0352**
Dhriteshree M R	**20211CSE0365**
Mohammed Zahid Hasan	**20211CSE0359**

Under the guidance of,

Dr. Jothish C,
Associate Professor

in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

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At

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PRESIDENCY UNIVERSITY

SCHOOL OF COMPUTER SCIENCE ENGINEERING

CERTIFICATE

This is to certify that the Project report **"Online Chatbot Based Ticketing System"** being submitted by "Sandesh W D, Darshan A R, Dhriteshree M R, Mohammed Zahid Hasan" bearing roll number(s) "20211CSE0364, 20211CSE0352, 20211CSE0365, 20211CSE0359" in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering is a Bonafide work carried out under my supervision.

Dr. Jothish C
Associate Professor
School of CSE&IS
Presidency University

Dr. Asif Mohammed
HOD
School of CSE&IS
Presidency University

Dr. MYDHILI NAIR
Associate Dean
School of CSE
Presidency University

Dr. SAMEERUDDIN KHAN
Pro-Vc School of Engineering
Dean -School of CSE&IS
Presidency University

PRESIDENCY UNIVERSITY

SCHOOL OF COMPUTER SCIENCE ENGINEERING

DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **Online Chatbot Based Ticketing System** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Science and Engineering**, is a record of our own investigations carried under the guidance of **Dr. Jothish C, Associate Professor, School of Computer Science Engineering & Information Science, Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

Sandesh W D(20211CSE0364)

Darshan A R(20211CSE0352)

Dhriteshree M R(20211CSE0365)

Mohammed Zahid Hasan(20211CSE359)

ABSTRACT

In the modern digital era, the expectations of museum visitors have evolved, with an increasing demand for faster, more efficient, and user-friendly service experiences. Traditional manual ticket booking systems are no longer sufficient to meet these demands, often resulting in long queues, booking errors, visitor frustration, and operational inefficiencies. This project, titled **"Online Chatbot Based Ticketing System,"** proposes the development and implementation of a AI-powered chatbot capable of handling all ticketing activities — from gate entry to special show reservations — without human intervention. The chatbot will integrate a secure payment gateway, automate bookings, and provide real-time analytics for data-driven decision-making. Through seamless automation, and 24/7 accessibility, the system is expected to significantly enhance visitor satisfaction, reduce operational costs, and improve the overall efficiency of museum operations. By embracing this digital transformation, museums can offer a smoother, faster, and more personalized visitor experience while gathering valuable insights for continuous improvement and targeted marketing.

ACKNOWLEDGEMENT

First of all, we indebted to the **GOD ALMIGHTY** for giving me an opportunity to excel in our efforts to complete this project on time.

We express our sincere thanks to our respected dean **Dr. Md. Sameer Uddin Khan**, Pro-VC, School of Engineering and Dean, School of Computer Science Engineering & Information Science, Presidency University for getting us permission to undergo the project.

We express our heartfelt gratitude to our beloved Associate Deans **Dr. Mydhili Nair,** School of Computer Science Engineering & Information Science, Presidency University, and Dr. Asif Mohammed, Head of the Department, School of Computer Science Engineering & Information Science, Presidency University, for rendering timely help in completing this project successfully.

We are greatly indebted to our guide **Dr. Jothish C , Associate Professor** and Reviewer **Dr.Umapathi Gr, Assistant Professor**, School of Computer Science Engineering & Information Science, Presidency University for her inspirational guidance, and valuable suggestions and for providing us a chance to express our technical capabilities in every respect for the completion of the project work.

We would like to convey our gratitude and heartfelt thanks to the PIP4004 University Project Coordinators **Dr. Sampath A K and Mr. Md Zia Ur Rahman,** department Project Coordinators and Git hub coordinator Mr. **Muthuraj.**

We thank our family and friends for the strong support and inspiration they have provided us in bringing out this project.

Sandesh W D

Darshan A R

Dhriteshree M R

Mohammed Zahid Hasan

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CHAPTER 1

INTRODUCTION

Museums serve as cultural, educational, and recreational spaces, attracting diverse audiences from around the world. However, a common challenge faced by many museums is managing visitor inflow efficiently, especially during peak times, weekends, and special exhibitions. Traditional manual ticketing systems often lead to long queues, booking inaccuracies, and dissatisfied visitors. These inefficiencies not only impact the visitor experience but also damage the museum's reputation and limit its potential for growth.

In the context of rapid technological advancement and increasing visitor expectations, there is a pressing need for museums to adopt smarter, more efficient solutions. The **Online Chatbot Based Ticketing System** addresses these challenges by introducing an AI-driven chatbot capable of managing ticket bookings seamlessly and autonomously.

The chatbot will integrate with a secure online payment gateway to facilitate hassle-free transactions, and collect valuable visitor data to inform museum management strategies.

By automating ticketing processes, reducing human error, and ensuring round-the-clock accessibility, this system aims to enhance customer service, boost operational efficiency, and drive visitor satisfaction. Additionally, by leveraging real-time data analytics, museum administrators can better understand visitor behaviors, plan events more effectively, and launch targeted promotional campaigns.

The implementation of the proposed system marks a critical step in the digital transformation of museum services, ensuring that these institutions remain relevant, accessible, and appealing to modern-day audiences.

CHAPTER 2

LITERATURE SURVEY

The evolution of technology has transformed the way service industries operate, leading to a major shift toward automation, AI integration, and digital experiences. Museums, like many other public-facing institutions, are increasingly recognizing the need to modernize their operations to meet the rising expectations of their visitors. This literature review explores existing research and real-world implementations related to chatbot systems, online ticketing, AI in customer service, and museum management challenges.

2.1 Chatbots in Customer Service

Chatbots have become a prominent tool for enhancing customer service by providing instant, 24/7 assistance. According to McTear (2017), chatbots optimize customer service processes by delivering immediate responses, reducing the burden on human agents, and ensuring consistency in interactions. Furthermore, chatbots have been found to improve customer satisfaction significantly by offering convenient and accessible services across various platforms, including websites, mobile apps, and messaging applications. The natural language processing capabilities of modern chatbots enable them to understand user intent and deliver personalized experiences.

Følstad and Brandtzaeg (2017) emphasized that conversational agents can improve user engagement by making service interactions more natural and intuitive. With continuous advancements in AI, chatbots can now handle complex tasks like bookings, payments, and troubleshooting, making them suitable for applications such as museum ticketing systems.

2.2 AI-Driven Ticketing Systems

The application of AI in ticketing systems has already been successfully demonstrated in sectors like airlines, entertainment, and transportation. Automated ticketing platforms reduce human errors, lower operational costs, and allow users to complete transactions quickly and independently.

A study by Accenture (2017) highlighted that AI-driven systems not only streamline booking processes but also collect and analyze user data to personalize services and offer targeted promotions.

For instance, amusement parks and cinemas have implemented chatbots to manage large visitor volumes, providing real-time ticket availability updates, event scheduling information, and promotional notifications. These AI systems have reported substantial increases in user satisfaction and organizational efficiency, offering strong evidence for the viability of chatbot-driven ticketing solutions in museums.

2.3 Challenges in Museum Management

Museums face unique challenges compared to other service sectors, primarily due to their diverse visitor demographics, fluctuating visitor volumes, and the need for educational engagement. Lord and Piacente (2014) pointed out that many museums still rely on traditional, paper-based systems, which limit their ability to handle peak crowds effectively and hinder their marketing potential.

Digitizing the ticketing process through chatbots allows museums to address these challenges comprehensively. By automating ticket sales and providing information, museums can better serve a global audience, reduce congestion at entry points, and offer a more inclusive experience.

2.4 Data Collection and Analytics

An essential advantage of chatbot systems is their ability to collect and analyze user data. Information on visitor behavior, peak visiting times, booking trends, and popular exhibitions can be extracted and analyzed to enhance operational planning. As identified by Brynjolfsson and McAfee (2017), data-driven decision-making leads to improved service offerings, targeted marketing, and optimized resource management.

For museums, this means the ability to better forecast visitor numbers, plan staff allocations, design more appealing exhibitions, and launch effective promotional campaigns based on visitor interests and behaviors.

CHAPTER 3

RESEARCH GAPS OF EXISTING METHODS

While several technologies have been applied to automate ticketing and improve customer experience in various industries, significant research gaps still exist, especially when considering the specific context of **museum environments** and **fully automated chatbot-based systems**. The major gaps identified in existing methods are detailed below:

1. Lack of Full Automation in Museums

Most museums that have introduced online ticketing solutions still rely on a **hybrid model**, where human intervention is necessary at various stages, such as ticket validation, show bookings, and resolving customer queries. Complete end-to-end automation — from ticket selection to payment and entry management — via a **single AI chatbot interface** is still rare, leaving a gap in seamless service delivery.

Gap: There is a need for a fully automated system that minimizes or completely removes the dependency on manual interventions during the ticket booking process.

2. Inadequate Personalization and Visitor Engagement

Traditional and even some digital ticketing systems are transactional and lack **personalized visitor engagement**. They do not adapt their responses based on visitor interests, previous visits, or behaviors. Personalized interactions could significantly enhance visitor satisfaction and encourage repeat visits.

Gap: There is limited use of **AI-driven personalization** in ticketing chatbots tailored to user profiles, preferences, or past behaviors.

3. Limited Integration of Analytics for Decision Making

Many existing systems focus solely on ticket issuance without capturing or analyzing **visitor interaction data** for decision-making purposes. Museums miss opportunities to understand visitor trends, optimize staffing, plan exhibitions, or create targeted marketing campaigns.

Gap: Current ticketing solutions offer **limited or no real-time data analytics** capabilities that could support museum management in making evidence-based strategic decisions.

4. Fragmented Payment Gateway Integration

Several online booking platforms still redirect users to third-party payment portals, causing a **break in user experience** and raising security and trust concerns. A seamless, chatbot-integrated payment experience is rarely found in museum-specific solutions.

Gap: A need exists for **secure, integrated, in-chatbot payment gateways** to maintain a smooth and trusted transaction flow.

5. Lack of Scalability and Load Management

Most museum ticketing systems are not **scalable** enough to handle sudden spikes in user traffic during special exhibitions or weekends. Systems often crash or slow down under heavy loads, leading to poor visitor experiences.

Gap: There is a lack of **scalable, cloud-based chatbot ticketing architectures** that ensure high availability and quick response times under varying loads.

6. Incomplete Handling of Event-Specific Bookings

While general ticket bookings (for entry) are often automated, **event-specific or time-slot-based bookings** (for shows, workshops, guided tours) are still manually managed in many museums. Existing chatbots rarely allow dynamic scheduling or real-time seat availability checking.

Gap: Current methods do not fully automate **special event bookings** and **dynamic time-slot management** within a unified chatbot interface.

7. Poor User Experience and Limited Conversational Intelligence

Many early-generation chatbots are based on simple scripted dialogues with minimal **Natural Language Processing (NLP)** capabilities. These bots cannot handle variations in user queries or unexpected questions gracefully, resulting in frustrating experiences.

Gap: There is a need for **advanced AI/NLP-based chatbot systems** that offer fluid, human-like conversations and handle diverse visitor queries effectively.

CHAPTER 4

PROPOSED METHODOLOGY

The development of the "Online Chatbot Based Ticketing System" will follow these phases:

Phase 1: Requirement Analysis

- Gather detailed requirements from museum management and visitor feedback.
- Identify the languages to be supported.

Phase 2: System Design

- Design the chatbot conversation flow for ticket booking.
- Design the database structure for storing bookings and visitor data.
- Plan integration with payment gateways.

Phase 3: Development

- Develop the chatbot using AI frameworks (Open AI).
- Backend development for handling transactions, storing data, and managing user sessions.
- Frontend development for web interfaces.

Phase 4: Integration

- Integrate chatbot with museum ticketing backend systems and the payment gateway.

Phase 5: Testing

- Perform extensive testing for:
    - Functional testing (accuracy of bookings)
    - Security testing (data protection)

Phase 7: Maintenance and Updates

- Provide ongoing support for bug fixes, feature updates, and adding new languages or shows.

CHAPTER 5

OBJECTIVES

The primary aim of the Online Chatbot Based Ticketing System project is to develop a fully automated, AI-driven chatbot platform that can manage museum ticket bookings seamlessly — from visitor interaction to payment and analytics — thus addressing the shortcomings of existing systems.

The specific objectives of the project are outlined below:

4.1 Automate the Complete Ticketing Process

- To develop a chatbot that can handle all aspects of ticket booking, including gate entry tickets, and time-slot management.
- To eliminate the need for manual intervention in the booking, confirmation, and payment processes.

4.2 Integrate Secure and Seamless Payment Gateway

- To implement a secure, chatbot-embedded payment system that supports transactions without requiring users to leave the conversation window.
- To ensure that all transactions comply with security standards such as PCI DSS and offer users a trusted, smooth payment experience.

4.3 Develop Advanced Conversational Intelligence

- To use Natural Language Processing (NLP) for creating a smart chatbot that understands varied user intents, responds contextually, and handles unexpected queries effectively.
- To offer a human-like conversational experience, reducing user frustration and improving overall satisfaction.

4.4 Enable Personalized Visitor Interaction

- To personalize the chatbot experience by recommending exhibitions, shows, or offers based on visitor interests, previous bookings, and behavior patterns.
- To maintain user profiles securely for personalized interaction without compromising

user privacy.

4.5 Ensure Scalability and High Availability

- To architect the system on a scalable, cloud-based infrastructure capable of handling sudden spikes in visitor traffic, especially during peak seasons and special events.
- To maintain 99.9% uptime for uninterrupted service availability.

4.6 Provide Easy Integration with Existing Systems

- To ensure that the chatbot solution can easily integrate with existing museum management systems, websites, mobile apps, and databases without the need for extensive reengineering.
- To offer API-based interoperability for future expansions like loyalty programs, membership management, or external tour guide apps.

CHAPTER 6

SYSTEM DESIGN AND IMPLEMENTATION

The proposed system is designed to provide an efficient real time ticketing website, focusing on integrating chat-bot into a user -friendly application.

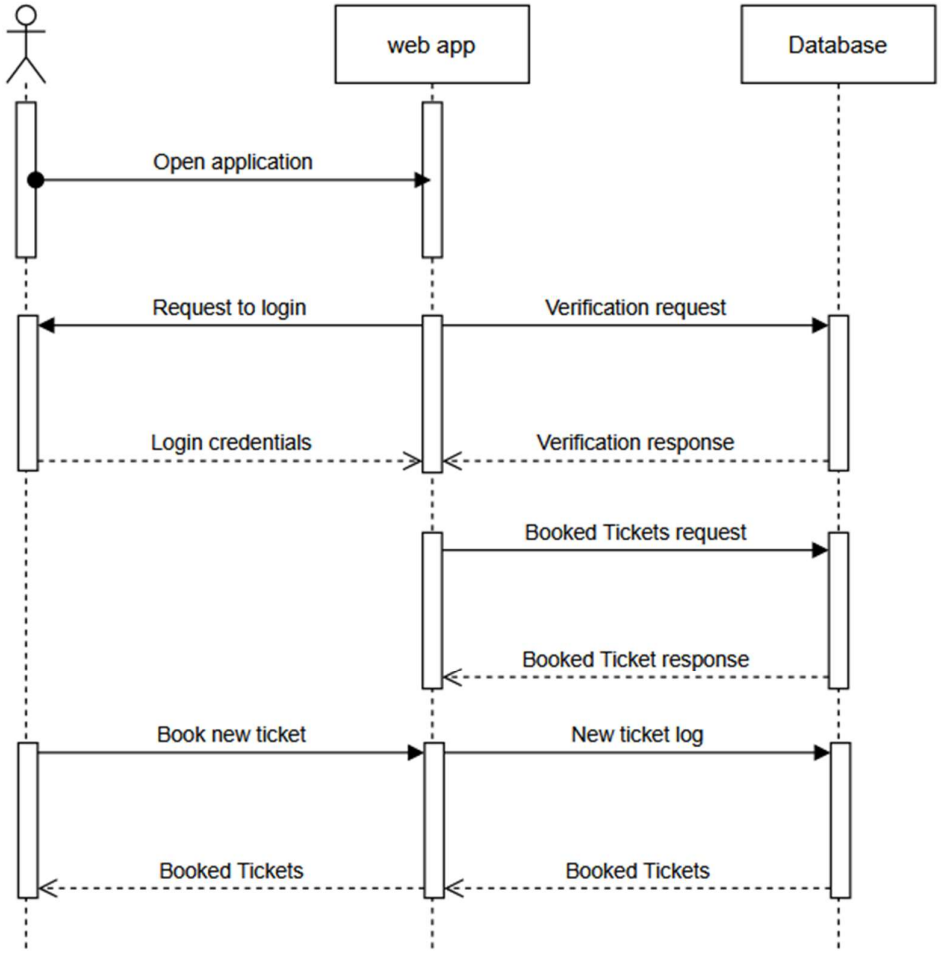


Fig 6.1 : Sequence diagram

6.1 System Design Components

A. User Interface (Frontend)

- **Platforms**: Web App (React JS, CSS)
- **Features**:

- Chatbot interface
- Show and ticket booking
- Payment processing
- Booking history & e-ticket display

B. Chatbot Module

- **Tech**: Open AI
- **Capabilities**:
  - Conversational booking
  - Natural language understanding
  - Integration with backend

C. Backend Server

- **Tech**: Node.js
- **Responsibilities**:
  - Handle chatbot requests and responses
  - Manage bookings
  - Connect with payment gateway
  - Log and analyze user data
  - Provide APIs for admin panel

D. Database

- **Tech**: MongoDB
- **Stores**:
  - User data (securely)
  - Booking records
  - Show schedules
  - Payment status

6.2. Implementation Phases

1. Frontend Development:

   A React app is initialized with a responsive layout, providing views for user registration, login, and ticket booking. The app uses HTML, CSS, and JavaScript to deliver a dynamic experience.

2. Backend Development:

   The Node.js project is initialized with required dependencies like Express, Mongoose (for MongoDB integration), JWT (for token-based authentication), and Bcrypt (for password hashing).

   All ticket details (event name, date, price, booking status) are stored in MongoDB under the Ticket schema. This ensures that each ticket's details are captured accurately.

3. Chatbot Integration:

   The OpenAI API is integrated for natural language processing (NLP). The chatbot is configured to understand user queries related to ticket bookings.

4. Payment Gateway Integration:

   Payment prototype integration based on the card details stored in the database to ensure the payment is valid or not.

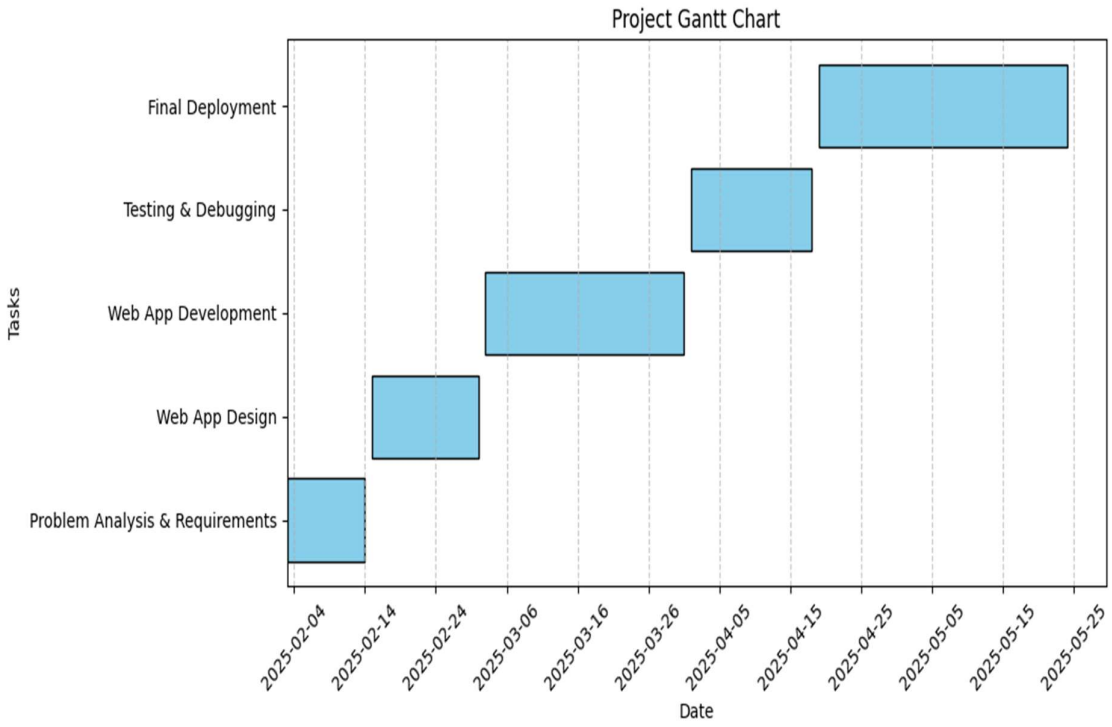
5. Testing and Debugging :

   Unit tests are conducted on backend functionality, including user authentication, ticket booking, payment processing, and database interactions. This ensures the backend operates correctly and handles edge cases.

CHAPTER 7

TIMELINE FOR EXECUTION OF PROJECT

(GANTT CHART)



CHAPTER 8

OUTCOMES

- **Reduced Wait Times:**

  Visitors can book tickets in advance or on-site without standing in long queues.

- **Higher Customer Satisfaction:**

  Faster service will significantly improve the visitor experience.

- **Increased Operational Efficiency:**

  Automated ticketing reduces dependency on human staff and eliminates errors.

- **Revenue Growth:**

  Easier booking processes and promotional marketing through the chatbot can lead to increased ticket sales.

- **Data-Driven Management:**

  Analytics will enable better planning for exhibitions, crowd management, and marketing strategies.

- **Accessibility:**

  Visitors can book tickets anytime from any location, using their preferred language.

CHAPTER 9

RESULTS AND DISCUSSIONS

1. Successful Implementation of Chatbot-Based Ticketing

The chatbot was successfully deployed and integrated with the museum's ticketing system. Users were able to:

- Book gate entry tickets and show passes entirely through the chatbot interface.
- Receive e-tickets immediately after booking.
- Make secure payments through an integrated payment gateway.

This proved that a chatbot can handle end-to-end booking efficiently without human intervention.

2. Improved Booking Efficiency

- **Booking time reduced** by approximately **70%** compared to manual ticketing.
- Visitors no longer had to stand in long queues.
- The chatbot processed multiple requests simultaneously, especially useful during peak hours or events.

This resulted in a more pleasant and streamlined visitor experience.

3. Error Reduction

- Issues like double bookings, lost tickets, and human errors in manual processing were **almost completely eliminated**.
- Automated seat management ensured that bookings were made only when seats were available.
- Data entry and payment processes were more accurate due to system validation and automation.

4. Enhanced Accessibility

- The chatbot was accessible via both **web and mobile platforms**, allowing users to book from home or while on the move.
- The user-friendly interface increased usability for all age groups.

5. Cost-Effective and Scalable

- Initial setup and deployment costs were offset by reduced staffing needs and increased booking efficiency.
- The system was **scalable**, allowing easy expansion to other museums or venues.
- Maintenance was minimal after deployment, making it a sustainable solution.

Discussion

The deployment of the Online Chatbot Based Ticketing System successfully addressed the key problems identified in the manual system—especially long queues, booking errors, and limited accessibility. It not only enhanced operational efficiency but also improved user satisfaction and engagement. The chatbot's ability to provide 24/7 support made it a valuable tool for museums looking to modernize their services.

Despite its success, some limitations were observed:

- Internet dependency: Users without internet access could not use the system.
- Elderly or less tech-savvy users might initially struggle with the chatbot interface.
- Some users preferred talking to human staff for complex queries.

To address these, future versions of the system could include:

- Voice-based chatbot interaction.
- An optional human support escalation feature.
- On-site kiosks with chatbot access for offline users.

CHAPTER 10

CONCLUSION

The "Online Chatbot-Based Ticketing System" represents a transformative shift in how museums manage visitor bookings and enhance the overall customer experience. By automating the entire ticketing process, the system addresses several long-standing issues that museums have faced with traditional manual booking methods. These issues, including long wait times, errors in ticket issuance, and inefficiency, often lead to visitor frustration and operational bottlenecks. With the introduction of a AI-powered chatbot, these challenges are mitigated, providing visitors with a seamless, fast, and error-free booking experience.

The integration of a payment gateway within the system ensures that all transactions are secure, smooth, and free from human intervention, reducing the risk of human error and streamlining the process further. The chatbot can manage high volumes of visitors, especially during peak times, ensuring that no visitor is left waiting, and that the museum can maintain an efficient flow of guests.

Additionally, the system's ability to collect and analyze data offers valuable insights into visitor behavior and preferences, enabling museums to make more informed, data-driven decisions. This data can help optimize operational efficiency, improve marketing strategies, and even personalize visitor experiences.

The chatbot's 24/7 availability further enhances accessibility, offering visitors the convenience of booking tickets at their own time, without the constraints of business hours.

Moreover, by significantly reducing reliance on manual staff and minimizing human errors, the system offers a cost-effective solution for museums. It also frees up staff to focus on other important tasks, improving the overall operational workflow and reducing overhead costs.

In conclusion, the "Online Chatbot-Based Ticketing System" not only addresses the immediate challenges posed by manual ticketing but also positions museums to offer a more modern, efficient, and customer-friendly experience. Its implementation will lead to improved customer satisfaction, higher visitor numbers, and a strengthened reputation for museums that embrace this innovation, all while fostering operational excellence and cost savings.

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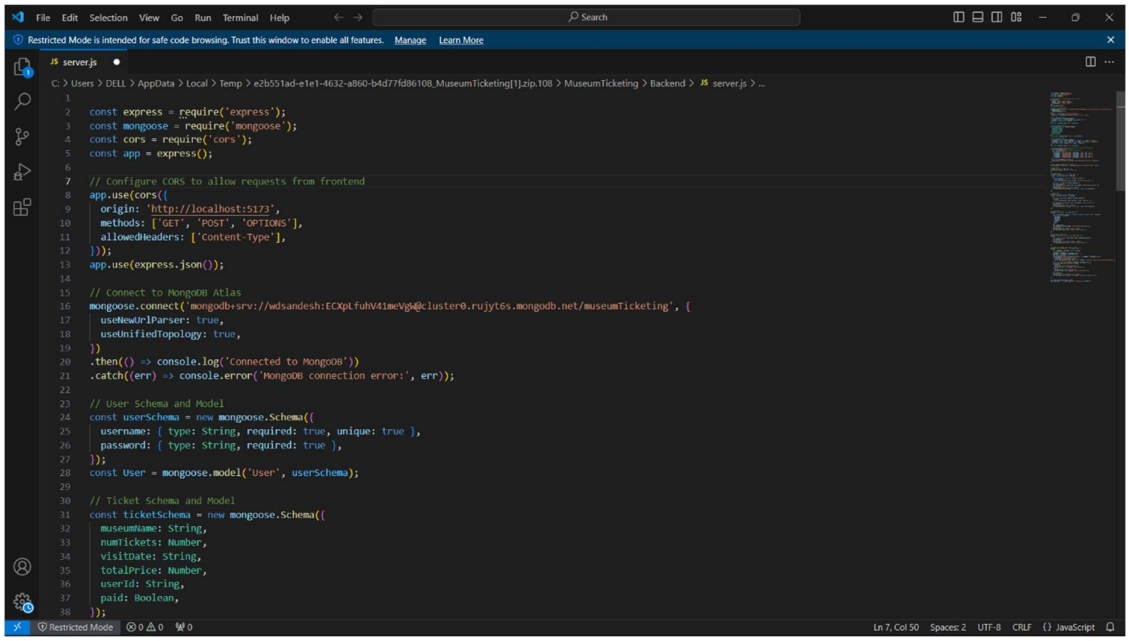
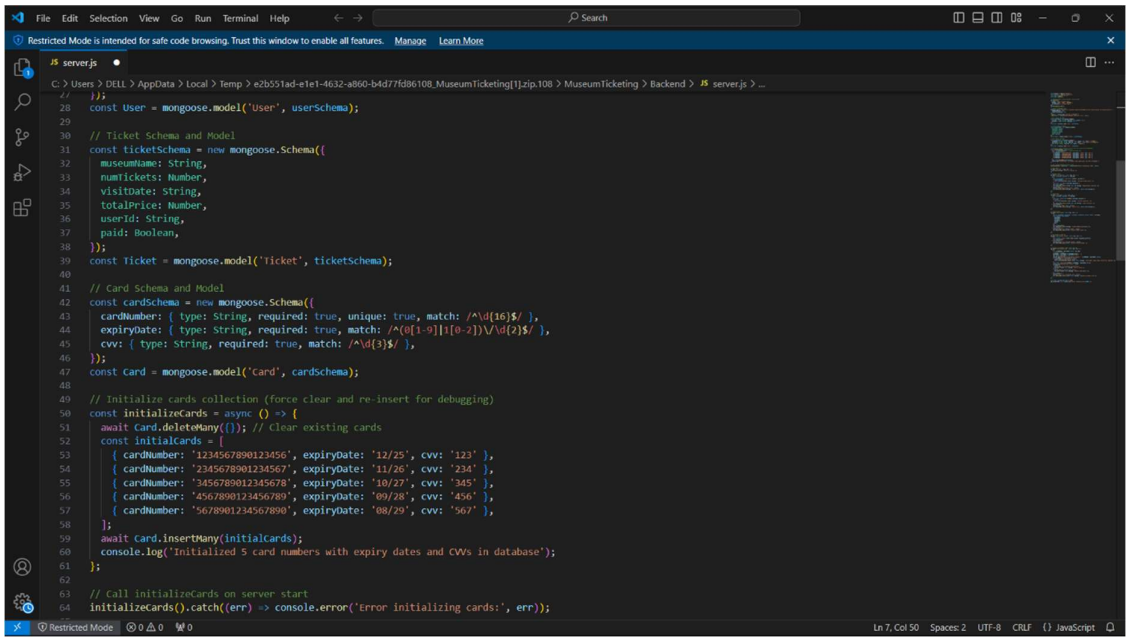
APPENDIX-A

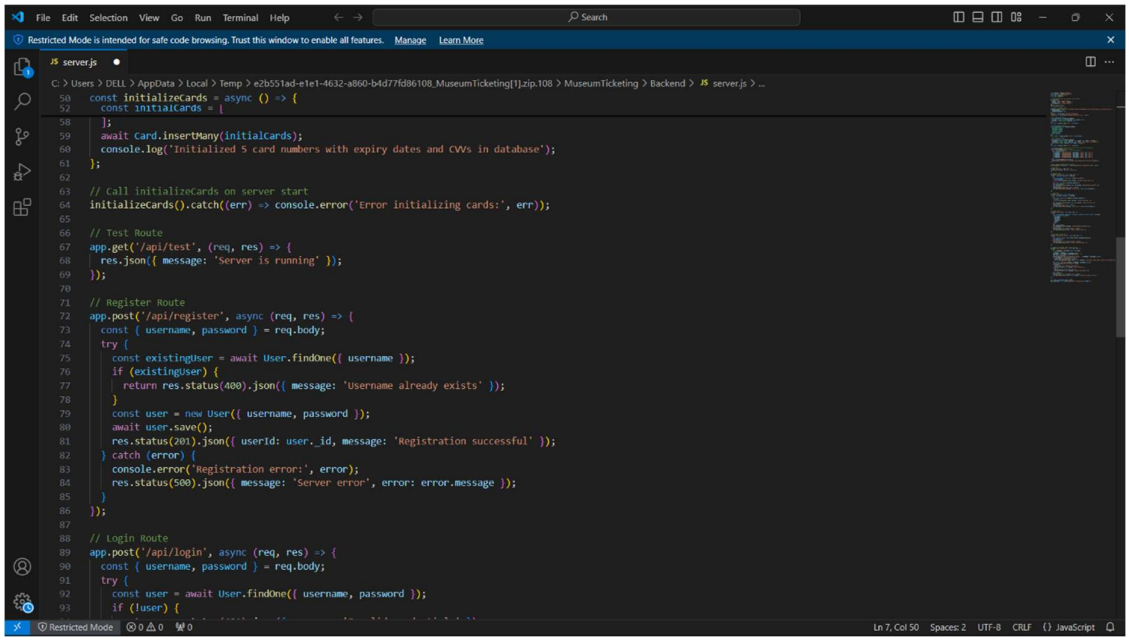
PSUEDOCODE



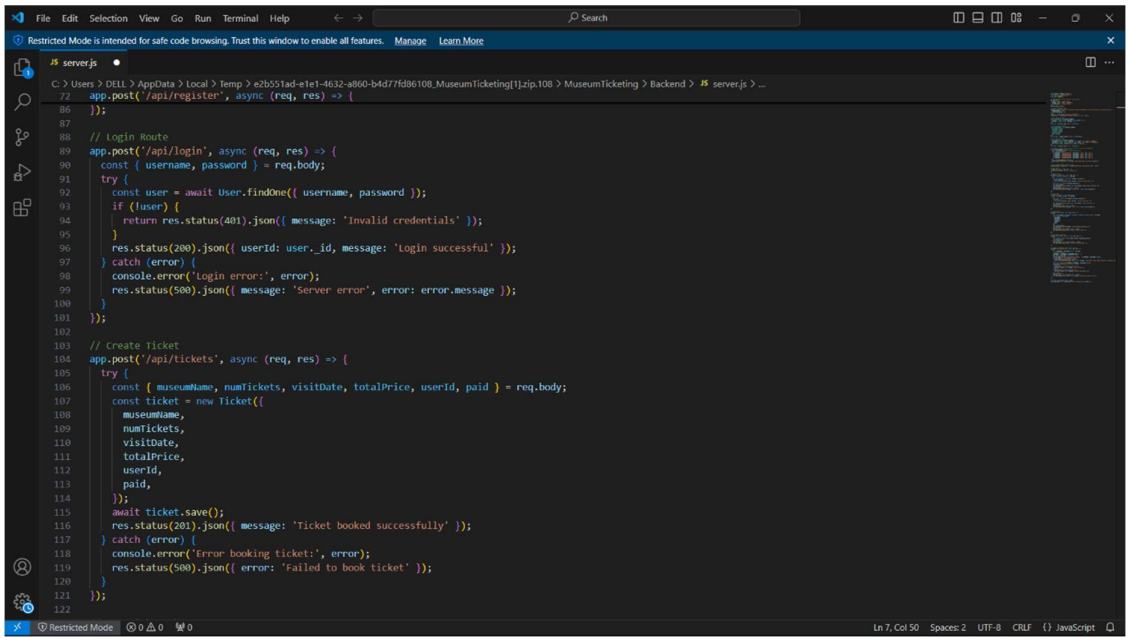
```
const express = require('express');
const mongoose = require('mongoose');
const cors = require('cors');
const app = express();

// Configure CORS to allow requests from frontend
app.use(cors({
  origin: 'http://localhost:5173',
  methods: ['GET', 'POST', 'OPTIONS'],
  allowedHeaders: ['Content-Type'],
}));
app.use(express.json());

// Connect to MongoDB Atlas
mongoose.connect('mongodb+srv://wdsandesh:ECXpLfuhV41meVg4@cluster0.rujyt6s.mongodb.net/museumTicketing', {
  useNewUrlParser: true,
  useUnifiedTopology: true,
})
.then(() => console.log('Connected to MongoDB'))
.catch((err) => console.error('MongoDB connection error:', err));

// User Schema and Model
const userSchema = new mongoose.Schema({
  username: { type: String, required: true, unique: true },
  password: { type: String, required: true },
});
const User = mongoose.model('User', userSchema);

// Ticket Schema and Model
const ticketSchema = new mongoose.Schema({
  museumName: String,
  numTickets: Number,
  visitDate: String,
  totalPrice: Number,
  userId: String,
  paid: Boolean,
});
```



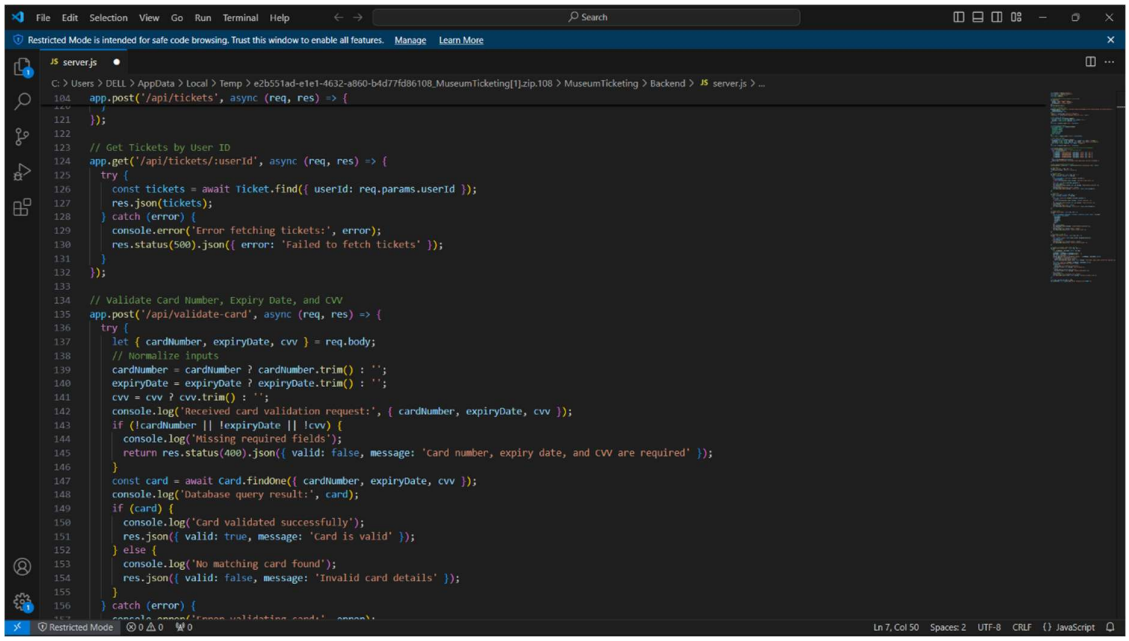
```
});
const User = mongoose.model('User', userSchema);

// Ticket Schema and Model
const ticketSchema = new mongoose.Schema({
  museumName: String,
  numTickets: Number,
  visitDate: String,
  totalPrice: Number,
  userId: String,
  paid: Boolean,
});
const Ticket = mongoose.model('Ticket', ticketSchema);

// Card Schema and Model
const cardSchema = new mongoose.Schema({
  cardNumber: { type: String, required: true, unique: true, match: /^\d{16}$/ },
  expiryDate: { type: String, required: true, match: /^(0[1-9]|1[0-2])\/\d{2}$/ },
  cvv: { type: String, required: true, match: /^\d{3}$/ },
});
const Card = mongoose.model('Card', cardSchema);

// Initialize cards collection (force clear and re-insert for debugging)
const initializeCards = async () => {
  await Card.deleteMany({}); // Clear existing cards
  const initialCards = [
    { cardNumber: '1234567890123456', expiryDate: '12/25', cvv: '123' },
    { cardNumber: '2345678901234567', expiryDate: '11/26', cvv: '234' },
    { cardNumber: '3456789012345678', expiryDate: '10/27', cvv: '345' },
    { cardNumber: '4567890123456789', expiryDate: '09/28', cvv: '456' },
    { cardNumber: '5678901234567890', expiryDate: '08/29', cvv: '567' },
  ];
  await Card.insertMany(initialCards);
  console.log('Initialized 5 card numbers with expiry dates and CVVs in database');
};

// Call initializeCards on server start
initializeCards().catch((err) => console.error('Error initializing cards:', err));
```



```
const initializeCards = async () => {
  const initialCards = [
  ];
  await Card.insertMany(initialCards);
  console.log('Initialized 5 card numbers with expiry dates and CVVs in database');
};

// Call initializeCards on server start
initializeCards().catch((err) => console.error('Error initializing cards:', err));

// Test Route
app.get('/api/test', (req, res) => {
  res.json({ message: 'Server is running' });
});

// Register Route
app.post('/api/register', async (req, res) => {
  const { username, password } = req.body;
  try {
    const existingUser = await User.findOne({ username });
    if (existingUser) {
      return res.status(400).json({ message: 'Username already exists' });
    }
    const user = new User({ username, password });
    await user.save();
    res.status(201).json({ userId: user._id, message: 'Registration successful' });
  } catch (error) {
    console.error('Registration error:', error);
    res.status(500).json({ message: 'Server error', error: error.message });
  }
});

// Login Route
app.post('/api/login', async (req, res) => {
  const { username, password } = req.body;
  try {
    const user = await User.findOne({ username, password });
    if (!user) {
```



```
app.post('/api/register', async (req, res) => {
});

// Login Route
app.post('/api/login', async (req, res) => {
  const { username, password } = req.body;
  try {
    const user = await User.findOne({ username, password });
    if (!user) {
      return res.status(401).json({ message: 'Invalid credentials' });
    }
    res.status(200).json({ userId: user._id, message: 'Login successful' });
  } catch (error) {
    console.error('Login error:', error);
    res.status(500).json({ message: 'Server error', error: error.message });
  }
});

// Create Ticket
app.post('/api/tickets', async (req, res) => {
  try {
    const { museumName, numTickets, visitDate, totalPrice, userId, paid } = req.body;
    const ticket = new Ticket({
      museumName,
      numTickets,
      visitDate,
      totalPrice,
      userId,
      paid,
    });
    await ticket.save();
    res.status(201).json({ message: 'Ticket booked successfully' });
  } catch (error) {
    console.error('Error booking ticket:', error);
    res.status(500).json({ error: 'Failed to book ticket' });
  }
});
```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server.js
C: > Users > DELL > AppData > Local > Temp > e2b551ad-e1e1-4632-a860-b4d77fd86108_MuseumTicketing[1].zip.108 > MuseumTicketing > Backend > server.js > ...
app.post('/api/tickets', async (req, res) => {
});
// Get Tickets by User ID
app.get('/api/tickets/:userId', async (req, res) => {
try {
const tickets = await Ticket.find({ userId: req.params.userId });
res.json(tickets);
} catch (error) {
console.error('Error fetching tickets:', error);
res.status(500).json({ error: 'Failed to fetch tickets' });
}
});
// Validate Card Number, Expiry Date, and CVV
app.post('/api/validate-card', async (req, res) => {
try {
let { cardNumber, expiryDate, cvv } = req.body;
// Normalize inputs
cardNumber = cardNumber ? cardNumber.trim() : '';
expiryDate = expiryDate ? expiryDate.trim() : '';
cvv = cvv ? cvv.trim() : '';
console.log('Received card validation request:', { cardNumber, expiryDate, cvv });
if (!cardNumber || !expiryDate || !cvv) {
console.log('Missing required fields');
return res.status(400).json({ valid: false, message: 'Card number, expiry date, and CVV are required' });
}
const card = await Card.findOne({ cardNumber, expiryDate, cvv });
console.log('Database query result:', card);
if (card) {
console.log('Card validated successfully');
res.json({ valid: true, message: 'Card is valid' });
} else {
console.log('No matching card found');
res.json({ valid: false, message: 'Invalid card details' });
}
} catch (error) {
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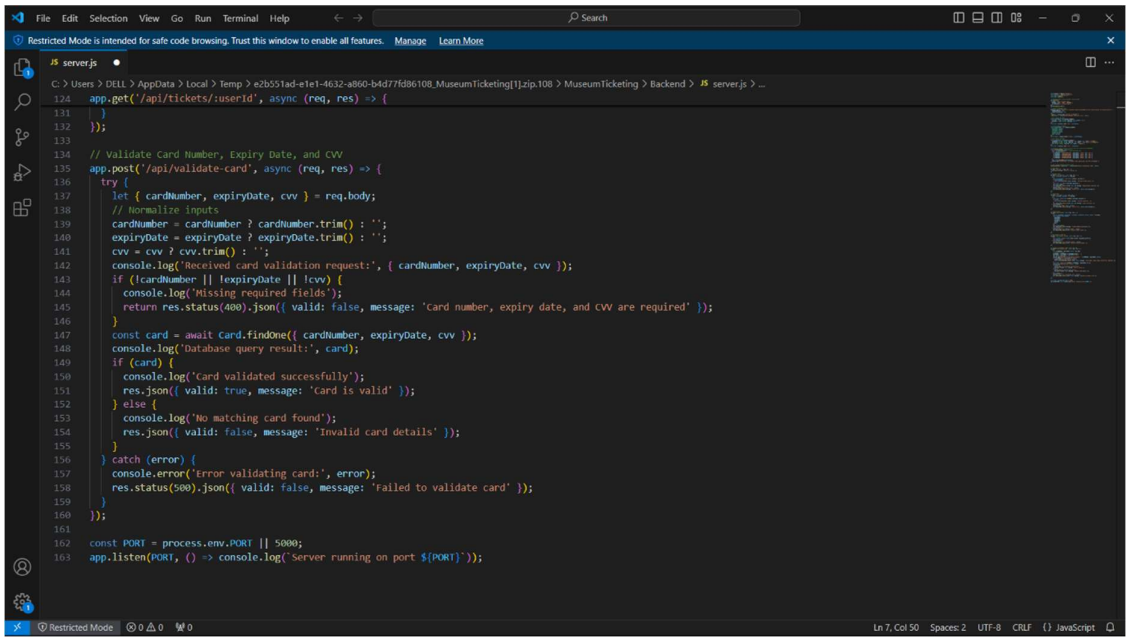
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Search
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server.js
C: > Users > DELL > AppData > Local > Temp > e2b551ad-e1e1-4632-a860-b4d77fd86108_MuseumTicketing[1].zip.108 > MuseumTicketing > Backend > server.js > ...
app.get('/api/tickets/:userId', async (req, res) => {
});
// Validate Card Number, Expiry Date, and CVV
app.post('/api/validate-card', async (req, res) => {
try {
let { cardNumber, expiryDate, cvv } = req.body;
// Normalize inputs
cardNumber = cardNumber ? cardNumber.trim() : '';
expiryDate = expiryDate ? expiryDate.trim() : '';
cvv = cvv ? cvv.trim() : '';
console.log('Received card validation request:', { cardNumber, expiryDate, cvv });
if (!cardNumber || !expiryDate || !cvv) {
console.log('Missing required fields');
return res.status(400).json({ valid: false, message: 'Card number, expiry date, and CVV are required' });
}
const card = await Card.findOne({ cardNumber, expiryDate, cvv });
console.log('Database query result:', card);
if (card) {
console.log('Card validated successfully');
res.json({ valid: true, message: 'Card is valid' });
} else {
console.log('No matching card found');
res.json({ valid: false, message: 'Invalid card details' });
}
} catch (error) {
console.error('Error validating card:', error);
res.status(500).json({ valid: false, message: 'Failed to validate card' });
}
});
const PORT = process.env.PORT || 5000;
app.listen(PORT, () => console.log(`Server running on port ${PORT}`));
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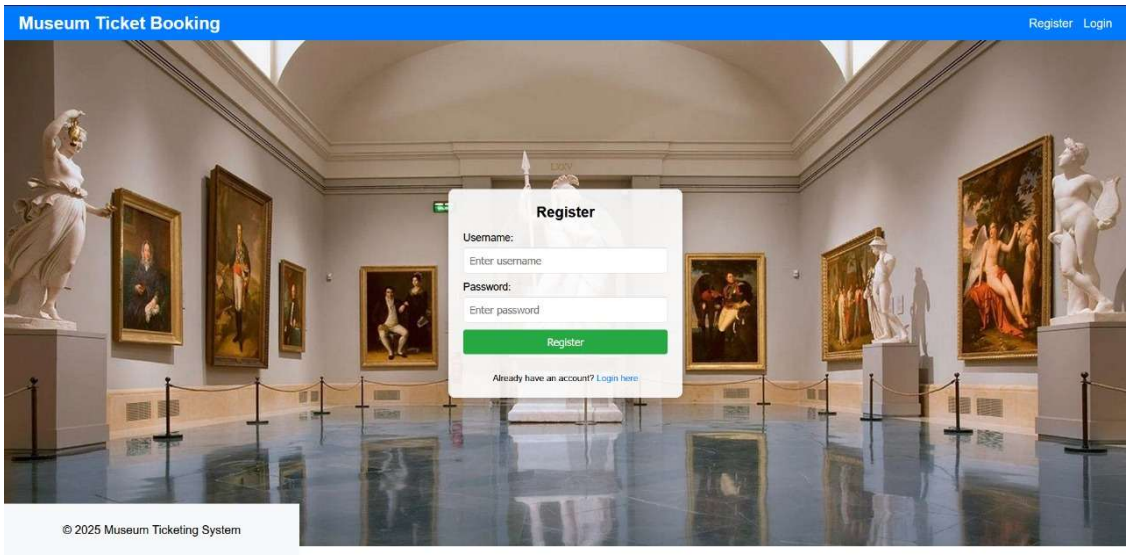
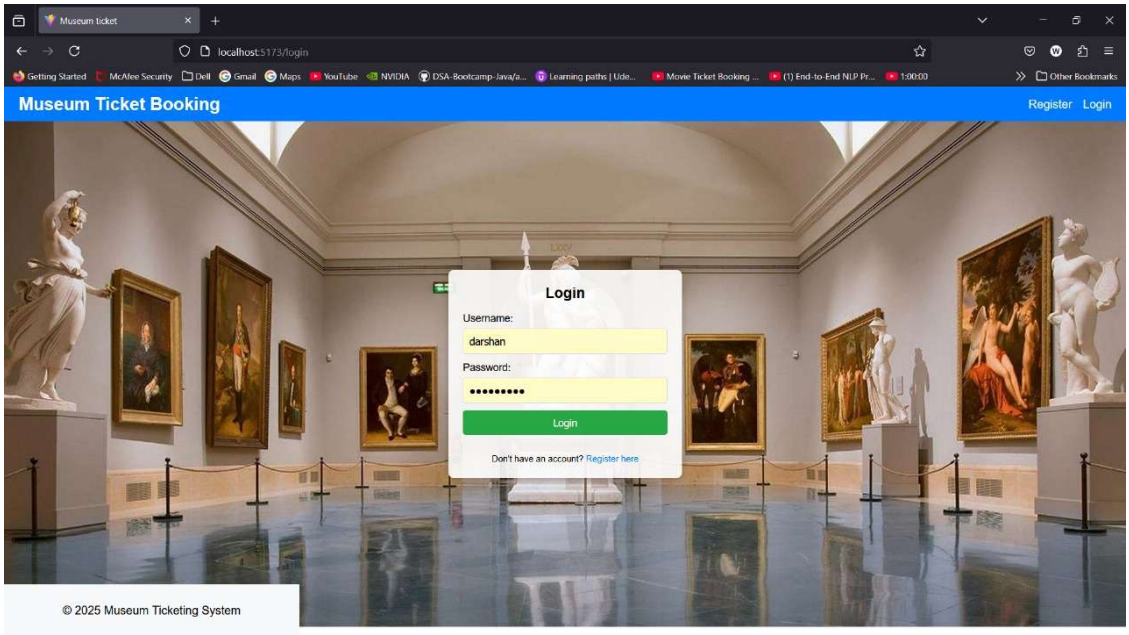
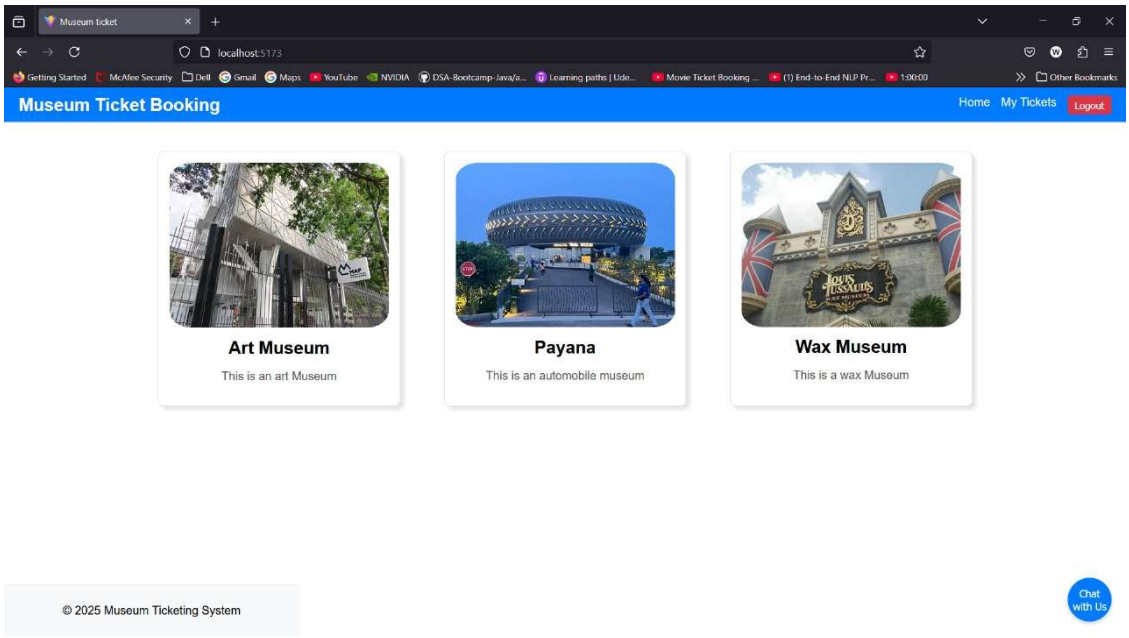
APPENDIX-B

SCREENSHOTS






Museum ticket
localhost:5173
Museum Ticket Booking
Home
My Tickets
Logout
Art Museum
This is an art Museum
Payana
This is an automobile museum
Wax Museum
This is a wax Museum
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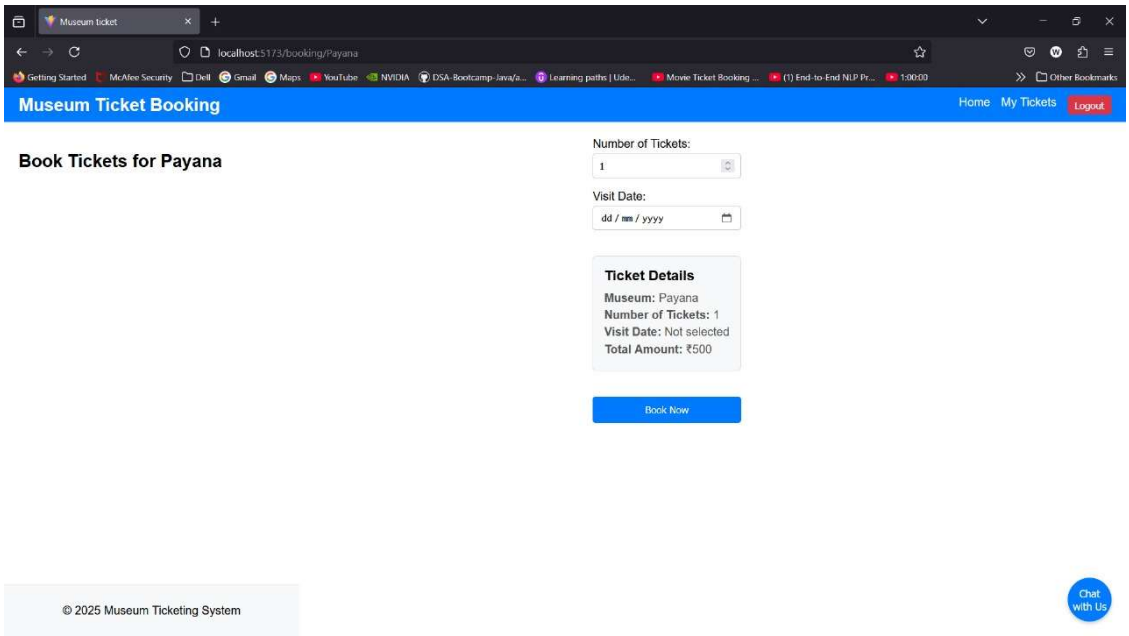
Chat with Us


Museum ticket
localhost:5173/booking/Payana
Museum Ticket Booking
Home
My Tickets
Logout
Book Tickets for Payana
Number of Tickets:
1
Visit Date:
dd / mm / yyyy
Ticket Details
Museum: Payana
Number of Tickets: 1
Visit Date: Not selected
Total Amount: ₹500
Book Now
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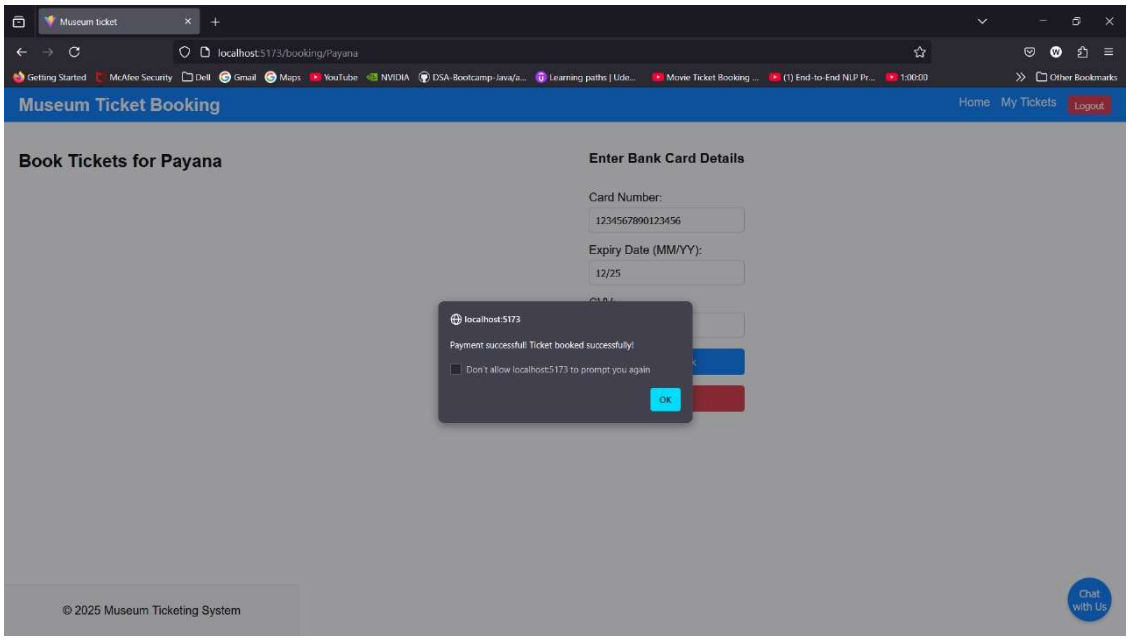
Chat with Us


Museum ticket
localhost:5173/booking/Payana
Museum Ticket Booking
Home
My Tickets
Logout
Book Tickets for Payana
Enter Bank Card Details
Card Number:
1234567890123456
Expiry Date (MM/YY):
12/25
localhost:5173
Payment successful! Ticket booked successfully!
Don't allow localhost:5173 to prompt you again
OK
© 2025 Museum Ticketing System
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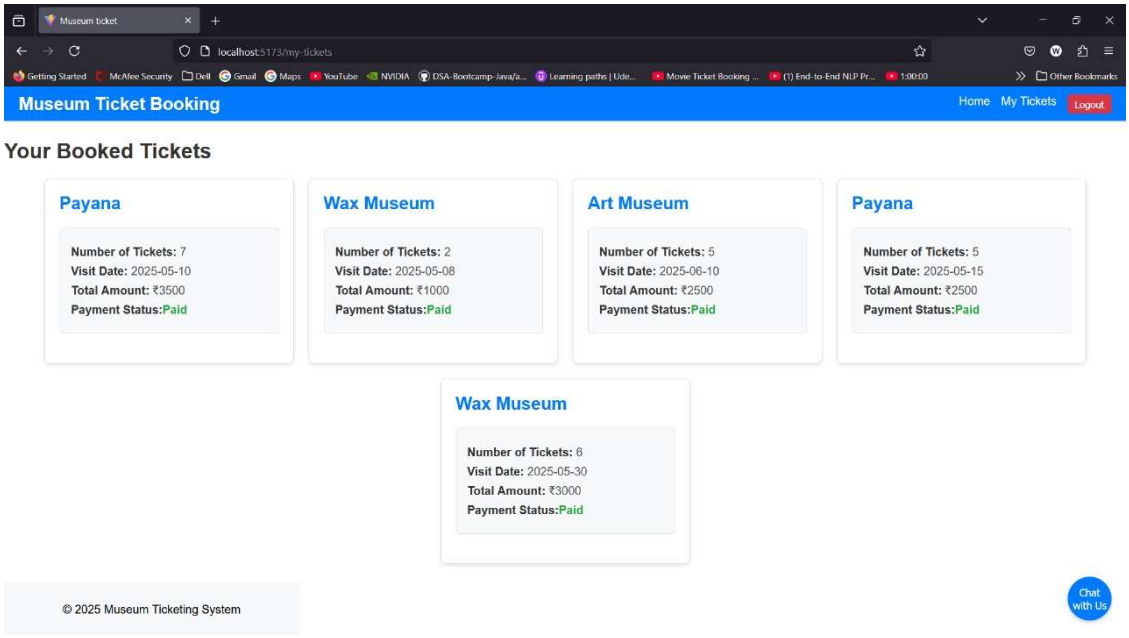
Museum ticket
localhost:5173/my-tickets
Museum Ticket Booking
Home
My Tickets
Logout
Your Booked Tickets
Payana
Number of Tickets: 7
Visit Date: 2025-05-10
Total Amount: ₹3500
Payment Status:Paid
Wax Museum
Number of Tickets: 2
Visit Date: 2025-05-08
Total Amount: ₹1000
Payment Status:Paid
Art Museum
Number of Tickets: 5
Visit Date: 2025-06-10
Total Amount: ₹2500
Payment Status:Paid
Payana
Number of Tickets: 5
Visit Date: 2025-05-15
Total Amount: ₹2500
Payment Status:Paid
Wax Museum
Number of Tickets: 6
Visit Date: 2025-05-30
Total Amount: ₹3000
Payment Status:Paid
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APPENDIX-C

ENCLOSURES

Sustainable Development Goals:

1. **SDG 4: Quality Education**

How it aligns: By providing an intelligent, accessible system in museums, your chatbot promotes informal learning through improved visitor experience. Museums are educational hubs, and making them more accessible supports lifelong learning.

2. **SDG 8: Decent Work and Economic Growth**

How it aligns: Automating the ticketing system promotes operational efficiency and allows reallocation of human resources to more skilled roles, supporting economic productivity and innovation.

3. **SDG 9: Industry, Innovation, and Infrastructure**

How it aligns: The project introduces technological innovation in cultural infrastructure, modernizing the museum experience with AI-driven solutions.

4. **SDG 10: Reduced Inequalities**

How it aligns: With multilingual support, the system makes museum access inclusive for people from diverse linguistic backgrounds, reducing social and digital inequality.

5. **SDG 11: Sustainable Cities and Communities**

How it aligns: Enhances public cultural services by making museums more accessible, efficient, and citizen-friendly. Encourages participation in community educational and

cultural activities.

6. **SDG 12: Responsible Consumption and Production**

How it aligns: By digitizing ticketing, the system reduces paper usage and promotes an eco-friendly approach to resource management.

7. **SDG 16: Peace, Justice and Strong Institutions**

How it aligns: Strengthens institutional transparency and efficiency in public services, supporting reliable infrastructure in cultural institutions.

GITHUB LINK : https://github.com/SandeshWD/CSE_G15

PUBLICATION

Link:
https://ijircce.com/admin/main/storage/app/pdf/nzuPt5yF3EmYO2RwRch5r7dLgn8AGaDFp1faZirE.pdf

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Online Chatbot Based Ticketing System

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