

Open innovation – idea presentation

Online Chatbot based ticketing system

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PROPOSED SOLUTION

FEATURES AND PROTOTYPE

MUSEUM MITRA: A E-Ticket booking platform for Museums . The proposed solution is a highly interactive functional chatbot for ticket booking with advanced website to reduce manual booking which and resolve multiple issues as mentioned .

FEATURES INCLUDED TO SOLVE ISSUE:

- 1. Multilingual Support:** Real-time language translation for **global users** Enhances user experience by using **Google Cloud Translation API**.
- 2. Seamless Ticket Booking:** Automated booking process **date , time, and ticket selection**
- 3. Payment Gateway Integration :** **Secure transactions** through credit/debit cards, digital wallets.
- 4. Operational Analytics:** Real-time insights into booking patterns and **user behavior**. Data-driven **decision-making** for marketing and operations with **AI Analytics model**
- 5. Efficient Scalability :** Handles **high volumes** of ticket requests simultaneously **minimizes human error** and **improves accuracy**.
- 6. AI-Driven FAQ System:** Offer instant answers to common questions using an **AI-powered FAQ** that **improves over time** with user interactions.
- 7. Enhanced Marketing & Promotions :** Tailored offers based on visitor preferences



INNOVATION :

1. Artifact Locator : It highlights and visually maps the **location of Artifacts** present in which Museum .



2. AI Recommendation : Chatbot recommends the Museum and **Artifacts Based on User interests** . Also **plans for user** to explore. AI CHATBOT uses user rated and Feedback details suggest new users

3.Real-Time Wait Time Updates: If your museum includes specific timed events or exhibits, the chatbot can inform visitors about **current wait times or availability** for specific attractions.

4.Interactive Quiz: Integrate **quizzes and trivia to engage** users, allowing them to test their knowledge about the museum's collection and history.

5. Voice assistance: The chatbot allows visitors to use **voice commands** for navigation, bookings, and inquiries, enhancing accessibility for all users, especially those **with disabilities** or who prefer **hands-free interaction**.

TECHNOLOGIES USED :

Programming Languages	Java script(frontend), Nodejs(backend),python
Frameworks & Libraries	React.js (UI), Django (Backend) , Botpress , Flask
Database & Storage	MongoDB(Data Storage), Firebase
Payment integration	UPI ID, and other major online payment application
Multilingual support with analytics	Google Cloud Translation API and Google Analytics
Cloud provider & Web Server	AWS, Google Cloud & Nginx, Apache

Timeline of Methodology & Process for Implementation is divided into 4 phases:

Phase 1: Planning and Design

- Define core features
- Design user flow
- Create content
- Select tools and platforms

Phase 2: Development

- Backend development
- Multilingual support
- Implement personalization
- Testing

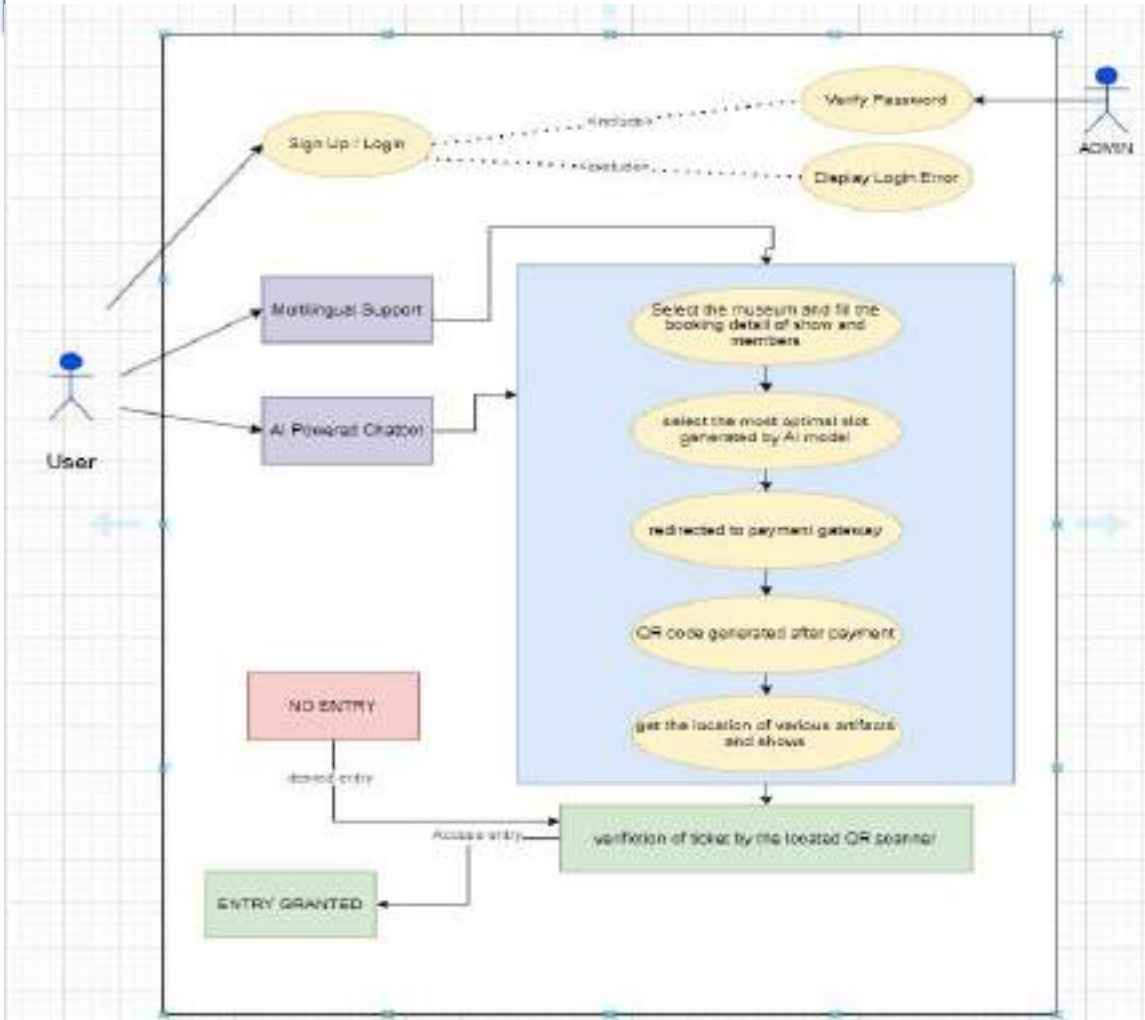
Phase 4: Launch Optimization

- Soft launch
- Monitor performance
- Continuous optimization
- Marketing and promotion

Phase 3: Integration and Testing

- System integration
- User testing
- Analytics integration

PROTOTYPE AND TECHINCAL APPROACH



FEASIBILITY AND VIABILITY

Feasibility of the Idea:

Technical feasibility:

- Enhanced **Visitor Experience**
- **Reduces wait times**
- **Operational Efficiency:** Eliminates **human errors**
- **Data-Driven Insights:** Advanced analytics enable **data-backed decision-making**.

Marketing feasibility:

1. **Demand Assessment:** demand for a chatbot-based ticketing system in the museum industry.
2. **Competitive Analysis:** Analyze **existing solutions** and identify gaps for differentiation.

Potential Challenges & Risks:

1. **System Integration:** integration of chatbot, payment gateway, and analytics
2. **User Adoption:** Potential resistance from **non-tech-savvy visitors**, limiting initial uptake.
3. **Data Privacy:** **Secure handling** of payment
4. **System Reliability:** Downtime during peak hours could lead to **visitor dissatisfaction** and **revenue loss**.
5. **Maintenance and Updates:** **Regular update** and **maintenance** of system functional and secure
6. **Scalability:** As visitor numbers grow, the system must be able to **scale efficiently** to handle increased traffic without **compromising performance**.

Strategic Solutions:

1. Implement an **API-driven architecture** for smooth integration between chatbot, payment gateway, and analytics .
2. Design a **user-friendly interface** with clear instructions and **support for non-tech-savvy visitors**.
3. Ensure secure transactions with **end-to-end encryption** and compliance with data privacy regulations.
4. Deploy the system on **cloud platform** with **auto-scaling** to manage peak traffic efficiently
5. Utilize **automated CI/CD pipelines** to deploy regular updates and security patches with minimal disruption.
6. Use **cloud infrastructure** with auto-scaling and **load balancing** to handle growing visitor traffic.



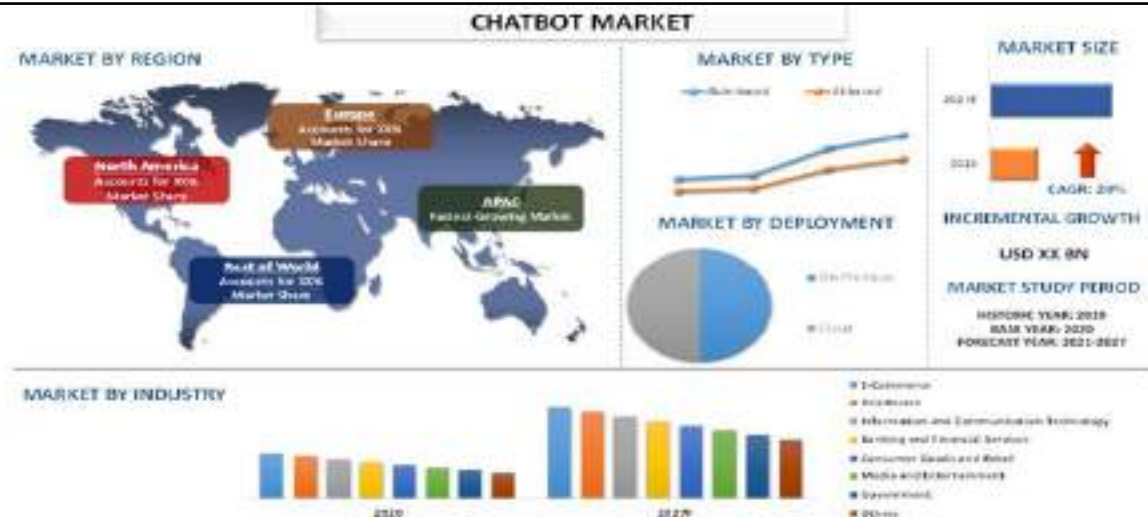
IMPACT AND BENEFITS

Potential Impact on the Target Audience:

- **Enhanced Accessibility:** Multilingual support makes the museum accessible to a **global audience**, including **non-native speakers**.
- **Improved User Experience:** Automated ticket booking and **reduces wait times**, enhancing overall satisfaction.
- **Increased Engagement :** Personalized recommendations and **seamless interaction** encourage repeat visits.

Benefits of the Solution:

- **Cultural Inclusivity:** Broader audience reach due to **language support** and accessibility features.
- **Visitor Experience:** Improved **visitor planning** and satisfaction through efficient, **user-friendly booking**.
- **Revenue Growth:** Increased ticket sales through easy booking and **targeted marketing** based on user data.
- **Cost Efficiency:** Reduced operational costs by **automating** the ticketing process and **minimizing the need for manual intervention**.
- **Paperless Transactions:** Encourages **digital ticketing**, reducing the need for printed tickets, and promoting sustainability.



RESEARCH and REFERENCES

References: Existing chatbots and sites

1. **Prezi.com** a popular existing chatbot for ticketing
<https://prezi.com/p/5hsunhbemf9n/revolutionizing-museum-experience-with-chatbot-ticketing-system/>
2. **Conferbot.com**: site with info on chatbot for museum ticket booking.
<https://www.conferbot.com/chatbottemplates/664cf7fa441d848c226d0c0b/guidebot-for-state-museum-and-historic-sites>
3. **Culture Chatbot**: a virtual museum tour guide
<https://rasa.community/showcase/jhn-ams/>
4. Reference for study on **evolution of chatbot** in tourism
<https://roccapital.com/the-evolution-of-chatbots-in-tourism-a-systematic/>

RESEARCH:

Articles on museum chatbot ticketing system:

1. **Research gate**: Site for Articles based on various project
https://www.researchgate.net/publication/367118629_Chatbots_in_Museums_Is_Visitor_Experience_Measured/
2. Article on chatbot for **ticket booking**
<https://intapi.sciendo.com/pdf/10.2478/cjot-2022-0002>

DOCUMENTATION:

1. **Google LLM** : large language model for multilingual support
<https://cloud.google.com/ai/llms#how-it-works>
2. **Google analytics**: A platform to understand customer journey and improve marketing ROI.
<https://marketingplatform.google.com/about/analytics/>
3. **OpenAI**: OpenAI API provides a simple interface to state-of-the-art **AI model for natural language processing**
<https://platform.openai.com/docs/quickstart>