# SMART INDIA HACKATHON 2024

## TITLE PAGE

- **Problem Statement ID –** 1648
- **Problem Statement Title-** Online Chatbot based ticketing system
- **Theme-** Travel & Tourism
- **PS Category-** Software
- **Team ID-**
- **Team Name-** Technocrats

Technocrats

# IDEA TITLE

SMART INDIA HACKATHON 2024

## ❖ Proposed Solution

The solution involves creating an efficient and responsive multilingual chatbot that manages the entire ticket booking process for a museum. This system would cover all types of bookings, from entry tickets to specific shows or exhibitions. The integration of a payment gateway will enable a fully automated and human-free booking experience. Additionally, the system will offer analytics to support data-driven decision-making by museum management.

## ❖ Key Points

- Improved Customer Service
- Efficient Handling of High Volumes
- Cost-Effective Solution
- Data Collection and Analysis
- Reduced Human Error
- Multilingual Support

## ❖ Innovation and Uniqueness of the Solution

- Multilingual and User-Centric
- Fully Automated Process
- Sending e-tickets
- Voice Interaction
- Point Based Systems for Rewards
- Event Reminders
- AI Based Dynamic Pricing
- Chatbot Customization
- Sentiment Analysis

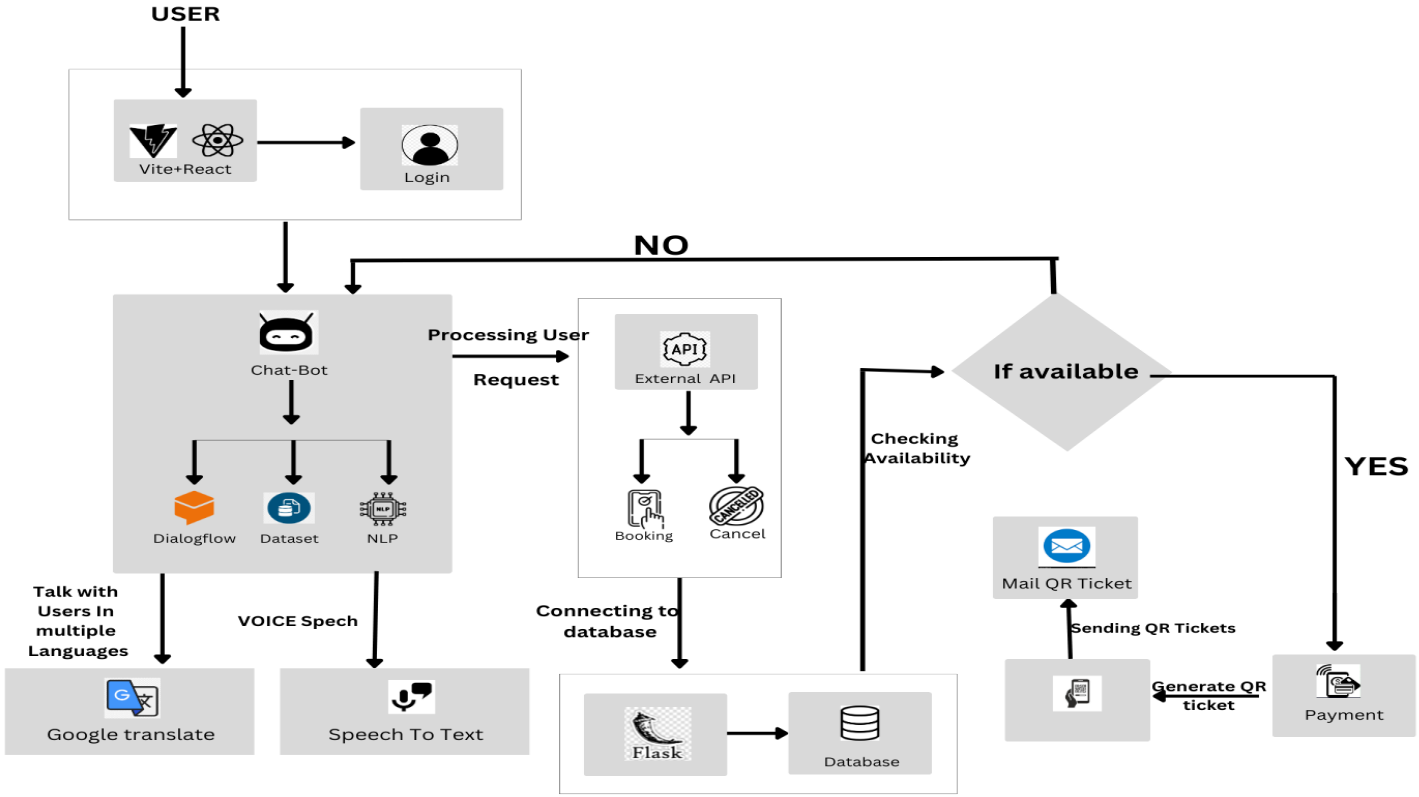
Technocrats

# TECHNICAL APPROACH

SMART INDIA HACKATHON

## ❖ Technologies to be used

- Programming Language - Python, JavaScript
- Frameworks - Flask ,Reactjs ,Rasa , TensorFlow
- Database - MongoDB
- Payment Gateway - Stripe
- Cloud service - AWS




## ❖ Methodology

**Frontend Development:** Using Vite with React.js to implement user authentication via OAuth and integrate a chatbot interface.
**Chatbot Development:** Utilizing Rasa for NLP and support multiple languages through Google Translate API. Implement speech-to-text through Google Speech API.
**Backend Development:** Using Flask to handle API requests and connect it to a PostgreSQL database to manage user data and transactions. Using APIs to check availability, if available, proceed with booking, and handle unavailable services with alternatives or cancellations.
**QR Code Generation and Email Service:** Automatically generate QR codes for booking confirmations and send tickets to user via mail.
**Payment Integration**: Securely process payments using gateways like Stripe or PayPal, ensuring transaction success before generating and sending tickets.
**Deployment:** Using EC2 instance of AWS to host the backend services, chatbot, and database.

Technocrats

# FEASIBILITY AND VIABILITY

SMART INDIA HACKATHON 2024

## ❖ Analysis of the feasibility of the idea

- **Technical Feasibility:** Advanced chatbot and NLP technologies can handle complex queries and provide multilingual support. Payment gateway integration is feasible for secure transactions.
- **Economic Feasibility:** The system reduces long-term operational costs and can increase revenue through improved visitor experience.
- **Operational Feasibility:** The chatbot system is scalable, user-friendly, and can handle high visitor volumes efficiently.

## ❖ Potential Challenges and Risks

- **Technical Challenges:** Integrating with existing systems and ensuring data security.
- **User Acceptance:** Some visitors may prefer traditional methods.
- **System Reliability:** Potential for technical glitches and downtime.
- **Maintenance:** Requires ongoing updates and support.

## ❖ Strategies to Overcome Challenges

- **Incentives:** Offering incentives to early adopters in the form of discounts or rewards.
- **Monitoring and System alerts**: Using AWS monitoring tool we can overcome system downtime and performance issue.
- **Continuous Improvement**: Establish a schedule for regular updates on basis of user feedback

Technocrats

# IMPACT AND BENEFITS

SMART INDIA HACKATHON 2024

## ❖ Potential impact on the target audience

- **Enhanced Visitor Experience:** Reduces wait times and simplifies the ticketing process, making it faster and more convenient.
- **Improved Accessibility:** Multilingual support caters to a diverse audience, including international visitors, enhancing inclusivity.
- **Convenience and Flexibility:** Allows visitors to book tickets anytime, from anywhere, without being restricted by location or museum hours.

## ❖ Benefits of the Solution

- **Social Benefits**:
  - Increases visitor engagement and enhances access to cultural and educational opportunities.
- **Economic Benefits**:
  - Boosts ticket sales and revenue through an easier booking process.
  - Reduces staffing costs and improves operational efficiency by automating ticketing.
- **Environmental Benefits**:
  - Reduces paper usage, supporting sustainability efforts.
  - Lowers energy consumption by minimizing the need for physical ticketing infrastructure.

Technocrats

# RESEARCH AND REFERENCES

SMART INDIA HACKATHON 2024

## ❖ Links of the reference and research work

- https://react.dev/reference/react
- https://flask.palletsprojects.com/en/3.0.x/tutorial
- https://rasa.com/docs/rasa
- https://huggingface.co/mistralai/Mistral-7B-v0.3
- https://docs.llamaindex.ai/en/stable
- https://github.com/ggerganov/llama.cpp/tree/master/gguf-py
- https://cloud.google.com/translate/docs/reference/api-overview
- https://cloud.google.com/text-to-speech?hl=en
- https://testdriven.io/blog/flask-stripe-tutorial
- https://docs.aws.amazon.com/ec2/latest/instancetypes/instance-types.html
- https://www.youtube.com
- https://chatgpt.com