

CAPSTONE PROJECT

PROJECT TITLE

Presented By:

1. **Harini M – Meenakshi Sundararajan Engineering College –
B.E. ECE**

OUTLINE

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT

- Planning a trip can be difficult and time-consuming, especially for people with a limited budget, tight schedule, or specific interests. Most travel apps only give general suggestions and don't change based on real-time updates or personal preferences. Because of this, people often have to use several apps to manage bookings, transportation, weather, and things to do. There is a need for a smart and personalized AI travel assistant that can make travel planning easier, adjust to changes quickly, and provide recommendations based on each user's needs.

PROPOSED SOLUTION

- We propose building **“TripMate – The Smartest AI Travel Planner”** using IBM Watsonx.ai and Agentic AI. The assistant:
- Accepts text and voice inputs to understand user preferences
- Recommends destinations based on interests, budget, and season
- Builds personalized, day-wise itineraries including transport and accommodations
- Offers real-time travel tips, weather updates, and backup plans
- Learns from user feedback to improve future travel suggestions

SYSTEM APPROACH

- Technology Used:
- IBM Cloud Lite
- Watsonx.ai Foundation Models (Granite)
- IBM Agentic AI
- Cloud Object Storage
- NLP and Prompt Engineering Tools

ALGORITHM & DEPLOYMENT

- **Algorithm Selection:**

The project uses **Granite**, a foundation language model in IBM Watsonx.ai, well-suited for personalized and conversational tasks like travel planning. It enables contextual understanding, itinerary generation, and adaptive response creation.

- **Data Input:**

- User text or voice input (destination, travel dates, preferences, budget)
- Optional: Real-time data such as weather, events, or transport availability
- Built-in destination knowledge and travel prompt templates

- **Training Process:**

No custom model training is required. Instead, prompt engineering in Agentic AI is used to define behaviors such as itinerary building, travel suggestions, and dynamic adjustments.

- **Prediction Process:**

Upon receiving user input, the LLM generates a personalized travel plan by reasoning through constraints like budget, interests, and location—adapting its recommendations based on real-time context.

- **Deployment:**

The agent is deployed using **Watsonx.ai Runtime** within a Deployment Space on IBM Cloud Lite and is accessed through a chat interface or API for end users.

RESULT

The screenshot displays the IBM watsonx Agent web interface. At the top, the header includes the IBM watsonx logo, an 'Upgrade' button, and user account information for 'Harini Magesh's Account' in the 'Dallas' region. The breadcrumb trail indicates the current location: 'Deployment spaces / AI-Powered Travel Planner Agent / watsonx Agent /'. Below this, the 'watsonx Agent' is shown with a green 'Deployed' status and an 'Online' indicator. A navigation bar contains links for 'API reference', 'Test', 'Evaluations', and 'Preview' (which is currently selected). A 'New chat' button is also present.

The main chat area shows a conversation between a user and the watsonx Agent. The user's message at 10:15 PM asks the agent to create a 3-day trip to Kerala for a budget of ₹10,000 in August, including hotel and transport suggestions, activities, and weather tips. The agent's response at 10:15 PM provides a detailed answer, noting that August is a peak tourist season in Kerala and prices may be higher than usual. It offers several suggestions:

- Look for budget-friendly hotels or hostels in Kerala, such as those in Alleppey or Varkala, which can cost between ₹1,000 to ₹3,000 per night.
- Consider traveling by bus or train instead of hiring a taxi or renting a car, as this can be more affordable.
- Plan your activities and sightseeing in advance, and look for free or low-cost options such as visiting local markets, beaches, or temples.
- Try local cuisine, which can be delicious and affordable, with meals starting from ₹100 to ₹300 per person.
- Be mindful of the weather, as August is a rainy month in Kerala, and plan your activities accordingly.

The right-hand sidebar, titled 'About this deployment', provides details about the agent's configuration:

- Name:** watsonx Agent
- Description:** Change this description to reflect your particular agent
- Deployment Details:**
 - Deployment ID: 886f329-b1fd-47...
 - Serving name: No serving name.
 - Software specification: runtime-24.1-py3.11
 - Hardware specification: Extra extra small: 1 CPU and 2 GB RAM
 - Copies: 1
- Tags:** wx-agent
- Associated asset:** watsonx Agent (a908cdb5-4b8f-413b-acc8-fe99c846810f)
- Last modified:** 47 seconds ago
- Created on:**

IBM watsonx

Upgrade

Harini Magesh's Account

Dallas

HM

Deployment spaces / AI-Powered Travel Planner Agent / watsonx Agent /

watsonx Agent

Deployed Online

API reference

Test

Evaluations

Preview

New chat +

- Look for budget-friendly hotels or hostels in Kerala, such as those in Alleppey or Varkala, which can cost between ₹1,000 to ₹3,000 per night.
- Consider traveling by bus or train instead of hiring a taxi or renting a car, as this can be more affordable.
- Plan your activities and sightseeing in advance, and look for free or low-cost options such as visiting local markets, beaches, or temples.
- Try local cuisine, which can be delicious and affordable, with meals starting from ₹100 to ₹300 per person.
- Be mindful of the weather, as August is a rainy month in Kerala, and plan your activities accordingly.

Some popular destinations in Kerala that can be visited on a budget include:

- Alleppey: Known for its backwaters and houseboat cruises, Alleppey is a great place to relax and enjoy the natural beauty of Kerala.
- Varkala: A coastal town with beautiful beaches, Varkala is a great spot for swimming, sunbathing, and water sports.
- Fort Kochi: A historic town with a rich cultural heritage, Fort Kochi is a great place to explore and learn about the history and architecture of Kerala.

Overall, with some planning and research, it's possible to have a great trip to Kerala on a budget of ₹10,000 in August.

How did I get this answer?

Type something...

About this deployment

Name

watsonx Agent

Description

Change this description to reflect your particular agent

Deployment Details

Deployment ID: 8886f329-bbfd-47...

Serving name:

No serving name.

Software specification:

runtime-24.1-py3.11

Hardware specification:

Extra extra small: 1 CPU and 2 GB RAM

Copies:

1

Tags

wx-agent

Associated asset

watsonx Agent

a980cd55-4b8f-413b-acca-fe99c846016f

Last modified

47 seconds ago

Created on

CONCLUSION

- **TripMate – The Smartest AI Travel Planner** simulates a human-like travel advisor using generative AI. It supports:
 - Personalized, adaptive travel planning
 - Voice and text input
 - Real-time itinerary adjustments and suggestions
 - It can scale to serve both domestic and international travelers using IBM Cloud infrastructure.
 - Integration with maps and real-time weather APIs
 - Support for multiple Indian languages (Hindi, Tamil, Bengali, etc.)
 - Visual landmark and QR recognition for bookings
 - Community trip ratings and shared itineraries
 - Offline planning mode for areas with low or no connectivity

FUTURE SCOPE

- **TripMate – The Smartest AI Travel Planner** uses generative AI to act like a human travel advisor. It offers:
- Personalized travel planning
- Voice and text input
- Real-time itinerary updates
- Built on IBM Cloud, it supports:
- Map and weather integration
- Indian language support
- QR code and landmark recognition
- Offline planning and shared itineraries
- It's scalable for both local and global travelers.

REFERENCES

- Integration with airline and hotel APIs for instant bookings
- AI-based travel expense tracking and budgeting
- Augmented Reality (AR) travel guide features
- Multi-user group itinerary coordination (e.g., friends or family trips)
- Sustainability-focused travel suggestions (eco-friendly routes and stays)

IBM CERTIFICATIONS



IBM CERTIFICATIONS



IBM CERTIFICATIONS





THANK YOU