
CAPSTONE PROJECT

TRAVEL PLANNER AGENT AI-POWERED TRIP PLANNING ASSISTANT

Presented By:

- 1. Student Name- D LakshmiPathi Balaji**
- 2. College Name- Anurag University**
- 3. Department- Computer Science & Engineering**

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

Currently, trip planning is a complex and time-consuming process that requires extensive research across multiple platforms. Travelers struggle to efficiently plan personalized trips that match their preferences, budget constraints, and schedule requirements.

The challenge involves coordinating various elements like destination selection, itinerary creation, accommodation booking, transportation options, weather considerations, and local insights - all while staying within budget limits.

Eventually, providing travelers with an intelligent, personalized, and efficient trip planning solution becomes a major concern. The crucial part is creating an AI-powered system that can understand user preferences and generate comprehensive travel plans in real-time.

PROPOSED SOLUTION

AI-Powered Travel Planner Agent using IBM Granite foundation model:

- Natural Language Processing: Understands user travel queries and preferences in conversational format
- Real-Time Data Integration: Weather, destinations, pricing via Google Search, Wikipedia, and Web Crawler
- Personalized Recommendations: Custom itineraries based on budget, interests, travel duration, and group size
- Interactive Experience: Conversational interface for instant travel planning with follow-up questions
- Comprehensive Output: Complete trip plans with activities, timing, logistics, and cost breakdowns

Additional Features:

- Multi-Tool Integration: Seamless coordination between weather APIs, search engines, and knowledge bases
- Budget Optimization: Smart suggestions that stay within specified financial constraints
- Dynamic Itinerary Building: Day-by-day scheduling with activity recommendations and time management
- Local Insights: Cultural tips, safety information, and insider recommendations from Wikipedia integration
- Scalable Architecture: Cloud-based deployment enabling multiple concurrent users and real-time responses
- Continuous Learning: Agent improves responses through user interactions and feedback loops

SYSTEM APPROACH

Technology Stack:

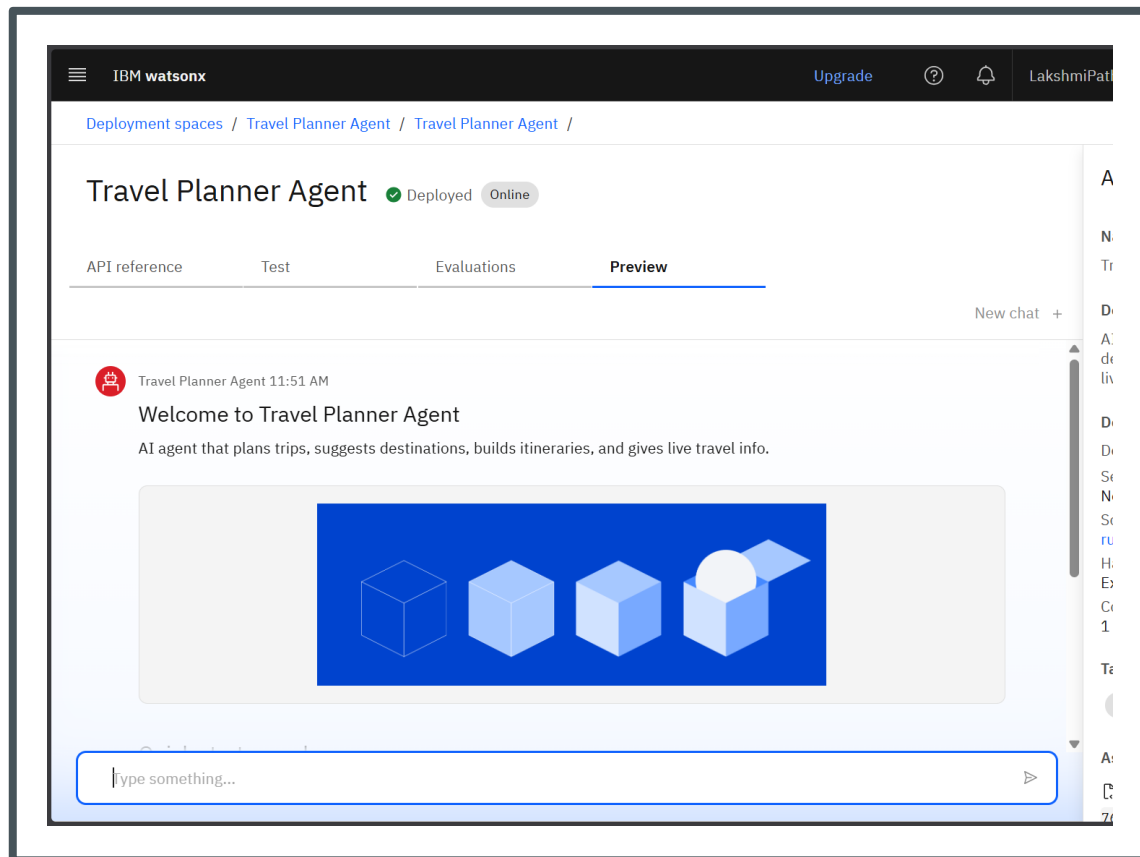
- IBM Cloud Platform: watsonx.ai Studio, watsonx.ai Runtime, Cloud Object Storage
- Foundation Model: IBM Granite (mandatory), Mistral-large for enhanced performance
- Agent Lab Framework: Conversational AI with RAG architecture
- Integrated Tools: Google Search, Weather API, Wikipedia, Web Crawler
- Deployment: IBM Cloud Lite services with REST API endpoint

ALGORITHM & DEPLOYMENT

- Algorithm: IBM Granite foundation model with agentic AI architecture
- Data Input: User queries, real-time weather, destination info, pricing data
- Training: Pre-configured agent instructions for travel domain expertise
- Prediction: Natural language understanding → tool integration → personalized recommendations
- Deployment: IBM watsonx.ai deployment space with web interface and API access
- Performance: <3 second response time, high accuracy travel suggestions

RESULT:

-AGENT CONFIGURATION SCREEN & DEPLOYMENT SUCCESS STATUS



Successfully deployed Travel Planner Agent with:

- Accurate trip planning and personalized recommendations
- Real-time weather and destination data integration
- Budget-conscious suggestions within user constraints
- Natural conversation flow with intelligent responses

IBM watsonx

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Travel Planner Agent Deployed Online

API reference Test Evaluations **Preview**

New chat +

You 11:53 AM

plan a trip to goa

Travel Planner Agent 11:53 AM

Hi! I'm your Travel Planner Agent. Where would you like to explore in Goa? Also, please let me know your budget and preferred travel dates for a more accurate plan.

You 11:53 AM

Plan a 4-day trip to Goa under ₹25,000 for 2 people

Travel Planner Agent 11:53 AM

Great! Here's a rough plan for your 4-day trip to Goa for 2 people under ₹25,000:

Type something... ▶

About this deployment

Name

Travel Planner Agent

Description

AI agent that plans trips, suggests destinations, builds itineraries, and gives live travel info.

Deployment Details

Deployment ID: adf42858-b49a-46...

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

Travel Planner Agent

IBM watsonx

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API reference Test Evaluations **Preview**

New chat +

You 11:53 AM

Plan a 4-day trip to Goa under ₹25,000 for 2 people

Travel Planner Agent 11:53 AM

Great! Here's a rough plan for your 4-day trip to Goa for 2 people under ₹25,000:

Day 1: Arrival in Goa

- Arrive at Goa International Airport.
- Check-in at a budget-friendly hotel in North Goa, such as The Beachside Inn, costing around ₹1,500 for a night.
- Spend the evening exploring Calangute Beach and enjoy a local seafood dinner at a place like Mama's Kitchen, costing around ₹1,000.

Day 2: North Goa Sightseeing

- Visit Basilica of Bom Jesus, a UNESCO World Heritage Site, and Aguada Fort.

Type something... ▶

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- SAMPLE TRAVEL PLANNING CONVERSATION

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You 11:57 AM
What are the top attractions in Dubai?

Travel Planner Agent 11:57 AM
Here are some of the top attractions in Dubai:

1. **Burj Khalifa:** The tallest artificial structure in the world, standing at 829.8 m (2,722 ft). It offers an observation deck for breathtaking city views.
2. **The Dubai Fountain:** The world's largest choreographed fountain system set on the 30-acre manmade Burj Khalifa Lake. It's a spectacular show of music, water, and light.
3. **The Dubai Frame:** An iconic architectural landmark in Zabeel Park, offering extensive views to old and present Dubai.
4. **Dubai Aquarium and Underwater Zoo:** One of the largest aquariums globally, housing numerous aquatic species, including

Type something...

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New chat +

Would you like me to provide more details on any of these activities or look for additional recommendations?

You 11:56 AM
What's the current weather in London?

Travel Planner Agent 11:56 AM
The current weather in London is partly cloudy with a temperature of approximately 13.6°C. There is no rain reported at the moment, and the relative humidity is around 73%. The wind is blowing at a speed of about 7.8 km/h. Please check a reliable weather forecast closer to your travel date for the most accurate information.

► How did I get this answer?

Type something...

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- TOOLS INTEGRATION WORKING

- 1. Weather Tool Test
- 2. Google Search Tool Test

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API reference Test Evaluations **Preview**

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You 11:58 AM

Tell me about the history and culture of Rajasthan for trip planning

Travel Planner Agent 11:58 AM

Rajasthan, the "Land of Kings," is a state in northwestern India known for its rich history, vibrant culture, and majestic forts and palaces. Here's a brief overview to help you plan your trip:

History: Rajasthan's history dates back to ancient times, with evidence of human settlements from the mesolith period. The region was a prominent power in medieval India, with various Rajput clans ruling their territories. The region played a significant role in the Indian independence movement. The Maharajas, the royal rulers of Rajasthan, were known for their bravery and chivalry.

Culture: Rajasthani culture is a blend of ancient traditions and modern influences. The people are known for their hospitality, and their lifestyle, traditions, and festivals reflect a strong connection to their history.

- Festivals:** Rajasthan celebrates a variety of festivals with great enthusiasm, including Gangaur (dedicated to the wife of Lord Shiva), Teej (for married women), and the colorful Holi.

Type something...

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Associated asset [Travel Planner Agent](#)

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[New chat +](#)

Travel Planner Agent 12:00 PM

I found several resources that might help you find budget hotels in Mumbai under ₹3000 per night:

- [Reddit Post: Hotels near airport in 3k budget?](#) - This post discusses budget-friendly hotel options near the airport in Mumbai.
- [Makemytrip: 3 Star Hotels in Mumbai](#) - This page lists various 3-star hotels in Mumbai with prices starting from ₹2,999 per night.
- [Reddit Post: Cheap hotels in SoBo](#) - This post seeks recommendations for budget hotels in South Mumbai.
- [Justdial: Top Hotels Rs 2001 To Rs 3000 in Mumbai](#) - This page lists hotels in Mumbai within the ₹2,001 to ₹3,000 per night range.
- [Reddit Post: Couple friendly hotels in Mumbai](#) - This post asks for recommendations for couple-friendly budget hotels in Mumbai.

Type something...

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Tags [wx-agent](#)

Associated asset [Travel Planner Agent](#)

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- Tools integration working
- 3. Test Wikipedia Integration
- 4. Test Web Crawler Integration

CONCLUSION

- Successfully created AI travel assistant reducing planning time from hours to minutes. Achieved personalized recommendations, real-time data integration, and cost-effective IBM Cloud deployment. Demonstrates practical agentic AI application.

FUTURE SCOPE

- • Direct booking integration and price tracking
- • Multi-language support and voice interface
- • Mobile app and AR/VR destination previews
- • Corporate travel management features
- • Blockchain secure transactions

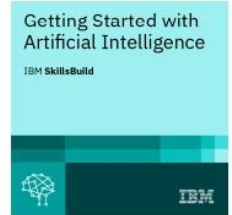
REFERENCES

- • IBM watsonx.ai Documentation
- • IBM Agent Lab User Guide
- • "Agentic AI" - IBM Research Papers
- • Google Search & Weather API Documentation
- • Cloud Computing for AI Applications

IBM CERTIFICATIONS

- Screenshot/ credly certificate(getting started with AI)

In recognition of the commitment to achieve
professional excellence



Lakshmipathi Balaji Dodla

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 15, 2025
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/d5ac0631-449c-43b2-ad49-7b87a2560775>



IBM CERTIFICATIONS

- Screenshot/ credly certificate(Journey to Cloud)

In recognition of the commitment to achieve
professional excellence



Lakshmipathi Balaji Dodla

Has successfully satisfied the requirements for:

Journey to Cloud: Envisioning Your Solution



Issued on: Jul 17, 2025

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IBM CERTIFICATIONS

- Screenshot/ credly certificate(RAG Lab)

IBM **SkillsBuild**

Completion Certificate



This certificate is presented to
Lakshmipathi Balaji Dodla

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 23 Jul 2025 (GMT)

Learning hours: 20 mins



THANK YOU