
CAPSTONE PROJECT

TRAVEL PLANNER AGENT

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OUTLINE

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PROBLEM STATEMENT

Example: A Travel Planner Agent is an AI-powered assistant that helps users plan trips efficiently and intelligently. It uses real-time data to suggest destinations, build itineraries, and recommend transport and accommodation options. By understanding user preferences, budgets, and constraints, it tailors personalized travel plans. Integrated with maps, weather updates, and local guides, it ensures a smooth travel experience. The agent can also manage bookings, alert users to changes, and optimize schedules on the go. This smart assistant transforms complex travel planning into a seamless, enjoyable process.

PROPOSED SOLUTION

- The proposed system aims to provide an AI-powered travel planning assistant that can suggest destinations, plan itineraries, and provide flight, hotel, and activity recommendations based on user preferences and real-time data. The solution will consist of the following components:
- **Data Collection:**
 - Gather travel-related datasets, including information on destinations, flights, hotels, attractions, and user preferences.
 - Integrate real-time APIs for flight prices, hotel availability, weather conditions, and events to enhance recommendation accuracy
- **Data Preprocessing:**
 - **Clean and preprocess the collected data to handle missing values, outliers, and inconsistencies.**
 - Perform feature engineering to extract relevant attributes like price, ratings, location proximity, and weather conditions for better planning.
- **Machine Learning Algorithm:**
 - Use **IBM Granite 3.2 or 3.3 (instruct/chat)** as the primary LLM for reasoning and conversation.
 - Implement a **LangGraph-based multi-tool agent**
- **Deployment:**
 - Build a **watsonx Assistant interface** that interacts with users, collects trip details (destination, dates, budget, preferences).
 - Deploy on IBM Cloud with scalability and API accessibility for web or mobile interfaces.
- **Evaluation:**
 - Assess the system's performance by testing various user queries (single-city, multi-city, budget trips).
 - Monitor real-time performance metrics like response time and API reliability.
- Result: The final solution provides **personalized travel plans** with real-time flight and hotel options, weather-based recommendations, and optimized itineraries—all within a conversational assistant interface.

SYSTEM APPROACH

The "System Approach" section outlines the overall strategy and methodology for developing and implementing the **travel planner agent**.

- **System requirements:** IBM Cloud account with watsonx.ai and watsonx Assistant enabled, deployment environment.
- **Library required to build the model:** langchain or langgraph, ibm_watsonx.ai, API client libraries etc.

ALGORITHM & DEPLOYMENT

- In the Algorithm section, describe the **foundation model and agent logic** chosen for generating travel plans and recommendations.
- **Algorithm Selection:**
 - Provide an overview of the chosen **IBM Granite 3.2 or 3.3 (instruct/chat)** foundation model, justifying its selection for conversational reasoning and multi-step itinerary planning.
 - **Data Input:**
 - Specify the input features used by the agent
 - **Training Process:**
 - Describe how the foundation model can be **fine-tuned (optional)** with travel-related datasets to improve response accuracy.
 - **Prediction Process:**
 - Explain how the agent combines API responses to produce a final **personalized travel plan**, including flights, hotels, attractions, and cost estimates.

RESULT



You 01:35 AM

lucknow to kanpur zoo



watsonx Agent 01:35 AM

To get from Lucknow to the Kanpur Zoo, you can follow these steps:

1. **By Train:** The nearest railway station to Kanpur Zoo is Kanpur Central. From there, you can take an auto-rickshaw or a taxi to reach the zoo, which is about 5 km away. Trains from Lucknow to Kanpur Central take approximately 2 to 3 hours. [More details](#)
2. **By Bus:** Buses are available from Lucknow to Kanpur. Once in Kanpur, you can take an auto-rickshaw or a taxi to the zoo. The journey by bus takes around 2 hours and 4 minutes. [More details](#)
3. **By Taxi/Cab:** You can book a cab directly to Kanpur Zoo. Services like Uber, Ola, and local taxi services are available. The distance is approximately 5 km from the city center. [More details](#)
4. **Google Maps:** Use Google Maps for real-time traffic updates and directions. It will guide you from your current location to Kanpur Zoo. [More details](#)
5. **Local Transport:** Once in Kanpur, you can use local transport like buses or auto-rickshaws to reach the zoo.

Kanpur Zoo, officially known as the Central Zoo Research Centre (CZRC), is a notable attraction. It houses a variety of animals and is also known for its conservation efforts.

Please ensure to check the zoo's visiting hours and any entry requirements or restrictions before your visit. Safe travels!

CONCLUSION

- The proposed **Travel Planner Agent on IBM Cloud** leverages IBM's **Granite foundation models** integrated with **tool-calling capabilities** to provide real-time, personalized travel itineraries. By combining user preferences with live data from flights, hotels, weather, and attractions APIs, the system ensures accurate and dynamic travel planning.
- The solution is **scalable, interactive, and enterprise-ready**, built using **watsonx.ai, watsonx Assistant, and Flows Engine** for tool deployment.

FUTURE SCOPE

- The travel planner agent can be enhanced with **multimodal and multilingual support**, enabling voice, image, and map-based interactions for global users.
- It can also integrate with **booking platforms and personalized user profiles** to provide end-to-end trip planning and real-time optimized recommendations.

REFERENCES

- IBM documentation on watsonx.ai and Granite foundation models
- API documentation for flight, hotel, and weather services (e.g., Amadeus, Skyscanner, OpenWeather API)
- IBM tutorials on tool-calling agents using LangChain/LangGraph
- Articles on best practices for data preprocessing, prompt engineering, and evaluation of LLM outputs
- Mentor guide in internship and documents provided

IBM CERTIFICATIONS

In recognition of the commitment to achieve
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Deeksha Paliwal

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



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This certificate is presented to

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for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT)

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THANK YOU