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# **CAPSTONE PROJECT**

## **TRAVEL PLANNER AGENT**

**Presented By:**

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# OUTLINE

- Problem Statement
- Proposed System/Solution
- System Development Approach
- Algorithm & Deployment
- Result (Output Image)
- Conclusion
- Future Scope
- References

# PROBLEM STATEMENT

Planning trips can be time-consuming and overwhelming. Travelers often struggle to:

- Find reliable information about destinations, itineraries, and budgets.
- Get personalized recommendations based on their preferences.
- Access all this information in one place without visiting multiple websites or apps.
- Traditional travel planning methods (manual research or generic travel websites) lack interactivity, personalization, and quick answers to specific queries.

# PROPOSED SOLUTION

Develop an AI-powered Travel Planner Agent using IBM watsonx.ai that:

1. Uses a vector index to retrieve travel information (destinations, itineraries, FAQs).
2. Leverages foundation models (e.g., Mistral-Large or Llama 3) for natural language interactions.
3. Provides real-time, conversational answers to travel-related questions.
4. Offers features like: Destination recommendations  
Sample itineraries  
Budget estimates  
Travel tips and FAQs
5. Deploys as a service (via Deployment Space) to be accessed through APIs or integrated into a chatbot interface.

# SYSTEM APPROACH

1. IBM Cloud Account with access to watsonx.ai Studio, watsonx.ai Runtime, and Cloud Object Storage (Lite plan is sufficient).
2. Stable Internet Connection (minimum 5 Mbps) for cloud operations and model interactions.
3. Modern Web Browser (Google Chrome, Microsoft Edge, or Mozilla Firefox) for accessing IBM Cloud services.
4. Basic Local Machine (4 GB RAM, dual-core processor, Windows/Mac/Linux) to run the browser and manage files.
5. Consistent Region Selection (e.g., London, Sydney) to ensure all services—project, runtime, and deployment space—are in the same region.

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# IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Functions
- IBM Cloud service
- IBM Granite (via watsonx.ai studio)
- IBM Cloud Object Storage
- IBM AI Tools

# RESULT

The screenshot shows the IBM watsonx Agent Lab interface. The top navigation bar includes the IBM watsonx logo, an Upgrade button, a help icon, a notification bell, the user's name (Rakshittha Beeranahalli's Ac...), the location (London), and a profile icon (RB). The breadcrumb trail indicates the current path: Projects / Travel\_Planner\_Agent / Agent Lab. The main interface is divided into two panels. The left panel, titled 'Build', contains sections for Setup, Configuration, Instructions, Knowledge, and Tools. The Configuration section shows the Framework set to 'LangGraph' and the Architecture set to 'ReAct'. The Instructions section contains the text: 'You are a helpful assistant that uses tools to answer questions in detail. When greeted, say "Hi, I am watsonx.ai agent. How can I help you?"'. The Tools section has buttons for 'Add a tool' and 'Create custom tool'. The right panel, titled 'Agent preview', shows a chat interface with a welcome message from 'watsonx Agent' at 05:33 PM: 'Welcome to watsonx Agent. Change this description to reflect your particular agent.' Below the message is a diagram of a graph structure with a magnifying glass icon. At the bottom is a text input field with the placeholder 'Type something...' and a send button.

This screenshot shows the same IBM watsonx Agent Lab interface as the previous one, but with a chat history in the 'Agent preview' panel. The chat history shows a user message at 05:36 PM: 'what are the famous places to visit in india'. The agent's response at 05:36 PM is: 'Some of the famous places to visit in India include: 1. Taj Mahal, Agra 2. Red Fort, Delhi 3. Golden Temple, Amritsar 4. Amer Fort, Jaipur 5. Hawa Mahal, Jaipur 6. Humayun's Tomb, Delhi 7. Gulmarg 8. Munnar 9. Gangtok 10. Manali'. Below the list, the agent adds: 'These are just a few examples, and there are many more places to explore in India. You can find more information and plan your trip by visiting websites like MakeMyTrip, Holidify, and Lonely Planet.' At the bottom of the chat panel is a text input field with the placeholder 'Type something...' and a send button.

# RESULT

The screenshot displays the IBM watsonx Agent interface. The top navigation bar includes the IBM watsonx logo, an Upgrade button, a help icon, a notification bell, the user profile 'Rakshitha Beeranhalli's Ac...', the location 'London', and a user initials icon 'RB'. Below this, the breadcrumb trail reads 'Projects / Travel\_Planner\_Agent / watsonx Agent'. The main interface is divided into three sections: 'Saved agents', 'Build', and 'Agent preview'. The 'Saved agents' section on the left shows a list of agents, with 'watsonx Agent' selected, featuring a description: 'Change this description to reflect your particular agent'. The 'Build' section in the center is titled 'Build' and shows the model 'Model: llama-3-3-70b-instruct'. It includes buttons for 'Add a tool' and 'Create custom tool'. Below these, a list of 'Added tools (5)' is shown: 'Google search' (Retrieve information from the internet with the Google search engine.), 'DuckDuckGo search' (Retrieve information from the internet with the DuckDuckGo search engine.), 'Wikipedia search' (Retrieve information from Wikipedia articles.), 'Webcrawler' (Retrieve information from a website.), and 'Weather' (Retrieve the weather of a city.). The 'Agent preview' section on the right shows a chat interface with a message from 'watsonx Agent 05:40 PM' saying 'Welcome to watsonx Agent' and 'Change this description to reflect your particular agent'. Below the message is a flowchart diagram with a magnifying glass icon. At the bottom of the preview is a text input field with the placeholder 'Type something...' and a send button.

IBM watsonx Upgrade ? Bell Rakshitha Beeranhalli's Ac... London RB

Projects / Travel\_Planner\_Agent / watsonx Agent Share feedback Autosave on New agent + Deploy

**Saved agents** < **Build** AI Model: llama-3-3-70b-instruct <

From Travel\_Planner\_Agent

**watsonx Agent**  
Change this description to reflect your particular agent

**Add a tool** **Create custom tool**

Added tools (5)

- Google search**  
Retrieve information from the internet with the Google search engine.
- DuckDuckGo search**  
Retrieve information from the internet with the DuckDuckGo search engine.
- Wikipedia search**  
Retrieve information from Wikipedia articles.
- Webcrawler**  
Retrieve information from a website.
- Weather**  
Retrieve the weather of a city.

**Agent preview**

watsonx Agent 05:40 PM

**Welcome to watsonx Agent**  
Change this description to reflect your particular agent

Type something...

[https://eu-gb.dataplatform.cloud.ibm.com/wx/agents?context=wx&project\\_id=11e03a88-c3...](https://eu-gb.dataplatform.cloud.ibm.com/wx/agents?context=wx&project_id=11e03a88-c3...)



# RESULT

IBM watsonx

Upgrade ?

Rakshitha Beeranhalli's Ac... ▾

London ▾

RB

Deployment spaces /

↑ ↓ ▾ ⓘ ⚙ ⌛ ⓧ ☰

## Travel Planner Deployment

Overview

Assets


Deployments

Jobs

Manage

### Jump back in

Assets that you promote or add to the space show here.



[View all](#)

### Deployments

All ▾

✔ Deployed	✖ Failed
0	0

[View deployments](#)

### Job runs

🔄 Active	✖ Failed last 24 hours ▾
0	0

[View jobs](#)

### Space history

🔄

ⓘ No notifications

You will see your most recent notifications here.

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# CONCLUSION

The Travel Planner Agent developed using IBM watsonx.ai provides an interactive and efficient solution for trip planning. By integrating a foundation model with a vector index of travel information, the system delivers personalized recommendations, itineraries, and travel tips through natural language interaction. Leveraging cloud-based resources ensures scalability, minimal hardware requirements, and easy deployment as an API or chatbot. This approach demonstrates how AI-powered agents can simplify travel planning and enhance user experience.

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## GITHUB LINK

[https://github.com/Rakshitha-Beeranhalli/Travel\\_Planner\\_Agent.git](https://github.com/Rakshitha-Beeranhalli/Travel_Planner_Agent.git)

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# FUTURE SCOPE

- Real-Time Data Integration
- Personalized Recommendations
- Multi-Language Support
- Booking and Payment Integration
- Mobile App Deployment

# REFERENCES

- IBM. Watsonx.ai Documentation. IBM Cloud. Available at: <https://cloud.ibm.com/docs/watsonx>
- Ministry of Tourism, Government of India. India Tourism Statistics 2023. Available at: <https://tourism.gov.in>

# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



## Rakshitha Beeranhalli

Has successfully satisfied the requirements for:

### Getting Started with Artificial Intelligence



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# IBM CERTIFICATIONS

IBM **SkillsBuild**

Completion Certificate



This certificate is presented to  
**Rakshitha Beeranhalli**

for the completion of

**Lab: Retrieval Augmented Generation with  
LangChain**

(ALM-COURSE\_3824998)

According to the Adobe Learning Manager system of record

**Completion date:** 28 Jul 2025 (GMT)

**Learning hours:** 20 mins





**THANK YOU**