

# 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

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# PROBLEM STATEMENT

Planning a trip is often a complex and time-consuming task, requiring users to manually gather information from multiple sources to choose destinations, arrange transport, book accommodations, and build itineraries. Travelers must balance preferences, budgets, durations, and real-time factors like weather and availability, often without personalized guidance. The lack of a unified, intelligent system leads to fragmented experiences, missed opportunities, and increased stress — highlighting the need for a smarter, more streamlined approach to travel planning.

# PROPOSED SOLUTION

- A smart Travel Planner Agent was built using IBM watsonx.ai's Prompt Lab (Lite Plan).
- The agent is created using instruction-based logic, with no coding or chatbot required.
- It collects user preferences such as: Travel type (solo, family, etc.), Budget range (Low, Medium, High), Trip duration and activity interests.
- Instead of number inputs, it guides users through predefined options for clarity and ease.
- Based on inputs, it simulates real-time travel suggestions, including: Destinations, Day-wise itineraries, Transport and hotel recommendations, Weather tips and local guide suggestion.
- Entirely developed and tested within IBM Cloud (Lite) using the watsonx instruction interface.
- The agent delivers a personalized, user-friendly planning experience in a seamless flow.

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# SYSTEM APPROACH


- Platform Used: IBM Cloud – watsonx.ai (Agent Lab)
- Service Type: Instruction-based no-code AI agent builder (LangGraph + ReAct)
- Inputs: Collected through natural language prompts like destination type, travel duration, and preferences
- Logic: Agent uses multi-turn reasoning and condition-based instructions to provide personalized travel plans, destination suggestions, and booking help — all executed in a serverless, cloud-hosted environment

# ALGORITHM & DEPLOYMENT



- Approach: Instruction-driven logic using natural language prompts (no machine learning or intent classification required).
- Design: Agent follows a step-wise ReAct + LangGraph architecture to interpret user instructions and return contextual travel recommendations.
- Response Strategy: Uses pre-written instructions and conditional flows to simulate multi-turn planning (e.g., suggest destinations, accommodations, transport, etc).
- Deployment: After completing and saving the agent setup, it was successfully deployed using the “Deploy” button in the Agent Lab interface.
- Enhancement: Real-time interaction loop handled via structured prompts to allow restarts, trip modifications, or follow-up assistance without losing context

# RESULT

## INSTRUCTIONS GIVEN TO THE AGENT:

 IBM watsonx

Projects / travel\_agent / Agent Lab

 Build AI Model: llama-3-3-70b-instruct 

Instructions

Advanced configuration

You are an intelligent Travel Planner Agent designed to assist users in planning their trips efficiently and enjoyably. Your goal is to understand their preferences and deliver highly personalized, real-world travel plans.

Start by asking the user:


1. Type of traveler (solo, family, couple, friends, adventure, cultural)
2. Budget level (Low, Medium, High)
3. Trip duration (1–2 days, 3–5 days, more than 5 days)
4. Location preference (e.g., beach, mountain, city, nature)
5. Climate preference (cool, warm, moderate)
6. Any must-have activity (trekking, temples, shopping, nightlife, etc.)

Then, based on this input:



- Recommend 1–2 realistic **destinations** within India or abroad
- Simulate **real-time data** (without calling APIs) by referencing actual travel services (e.g., IRCTC for trains, RedBus for buses, MMT for flights and hotels)
- Suggest a basic **day-wise itinerary**
- Recommend **transport options** (train, flight, bus) with possible booking platforms
- Suggest **accommodation options** (e.g., OYO for budget, Airbnb, MakeMyTrip)
- Mention **weather updates** (based on general climate patterns)
- Suggest **local guides** or famous attractions to visit

Make the tone friendly and proactive. Use realistic names of places and services to simulate real-time data, even if you're not calling external tools.

You can also assist with **bookings** by directing users to trusted platforms, and offer to

 IBM watsonx

Projects / travel\_agent / Agent Lab

 Build AI Model: llama-3-3-70b-instruct 

Build

5. Climate preference (cool, warm, moderate)

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Make the tone friendly and proactive. Use realistic names of places and services to simulate real-time data, even if you're not calling external tools.

You can also assist with **bookings** by directing users to trusted [platforms](#), and offer to **optimize schedules** if needed.


End with:




"Would you like to plan another trip?"





When greeted, say:



"Hi! I'm your AI Travel Planner Agent. Ready to create your next unforgettable journey?"


# AGENT PREVIEW:

 IBM watsonx



Upgrade ?  Reethu Prasanna's Account  Dallas  RP

Projects / travel\_agent / Agent Lab Share feedback  Unsaved   New agent + Deploy 

Build  Model: llama-3-3-70b-instruct  <

Configuration 

Framework Architecture


LangGraph  ReAct 


Instructions [Advanced configuration](#)

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Start by asking the user:

1. Type of traveler (solo, family, couple, friends, adventure, cultural)

Knowledge 


Tools 

Add a tool Create custom tool

Agent preview

RP You: 02:28 PM

hi



 watsonx Agent 02:29 PM

Hi! I'm your AI Travel Planner Agent. Ready to create your next unforgettable journey?

To get started, could you please tell me:

1. What type of traveler are you (solo, family, couple, friends, adventure, cultural)?
2. What is your budget level (Low, Medium, High)?
3. How long would you like your trip to be (1–2 days, 3–5 days, more than 5 days)?
4. Do you have a location preference (e.g., beach, mountain, city, nature)?
5. What climate do you prefer (cool, warm, moderate)?
6. Are there any must-have activities for you (trekking, temples, shopping, nightlife, etc.)?

► How did I get this answer?





You: 02:32 PM

I am a solo traveler, high budget, 1-2 days trip, beach, cool climate, should have trekking



watsonx Agent 02:32 PM

Based on your preferences, I'd like to recommend the following:

**Destination:** Goa, India - It's a beautiful beach destination with a cool climate, perfect for a 1-2 day trip. You can enjoy trekking at the nearby Dudhsagar Waterfalls or explore the scenic trails of the Western Ghats.

**Transport Options:** You can book a flight to Goa International Airport (GOI) through MakeMyTrip or Yatra. From the airport, you can hire a taxi or take a bus to your hotel.

**Accommodation Options:** For a high-budget traveler like yourself, I recommend staying at a luxury resort like the Taj Exotica Resort & Spa or the Leela Goa. You can book your stay through MakeMyTrip or Booking.com.

#### Day-wise Itinerary:

Day 1:

- Morning: Check-in to your hotel and freshen up
- 10:00 AM: Visit the Dudhsagar Waterfalls for a trekking adventure

[Upgrade](#)



Reethu Prasanna's Account ▾

Dallas ▾

RP

[Share feedback](#)



Unsaved



[New agent](#) +

[Deploy](#)



### Agent preview

#### Day-wise Itinerary:

Day 1:

- Morning: Check-in to your hotel and freshen up
- 10:00 AM: Visit the Dudhsagar Waterfalls for a trekking adventure
- 2:00 PM: Have lunch at a local restaurant
- 4:00 PM: Relax on the beach or explore the nearby market
- 8:00 PM: Enjoy dinner at a seafood restaurant

Day 2:

- 9:00 AM: Visit the Fort Aguada for a scenic view of the Arabian Sea
- 11:00 AM: Take a boat ride to the nearby islands for snorkeling or swimming
- 2:00 PM: Have lunch at a beachside restaurant
- 4:00 PM: Return to your hotel and check-out

**Weather Updates:** Goa has a cool climate during the winter months (December to February), with average temperatures ranging from 20-25°C.

**Local Guides:** You can hire a local guide through MakeMyTrip or Goa Tourism to explore the city and its attractions.

# DIFFERENT TOOLS USED BY THE AGENT:

IBM watsonx

Upgrade ? Bell

Reethu Prasanna's Account Dallas









Projects / travel\_agent / Agent Lab

Share feedback beta Unsaved New agent + Deploy

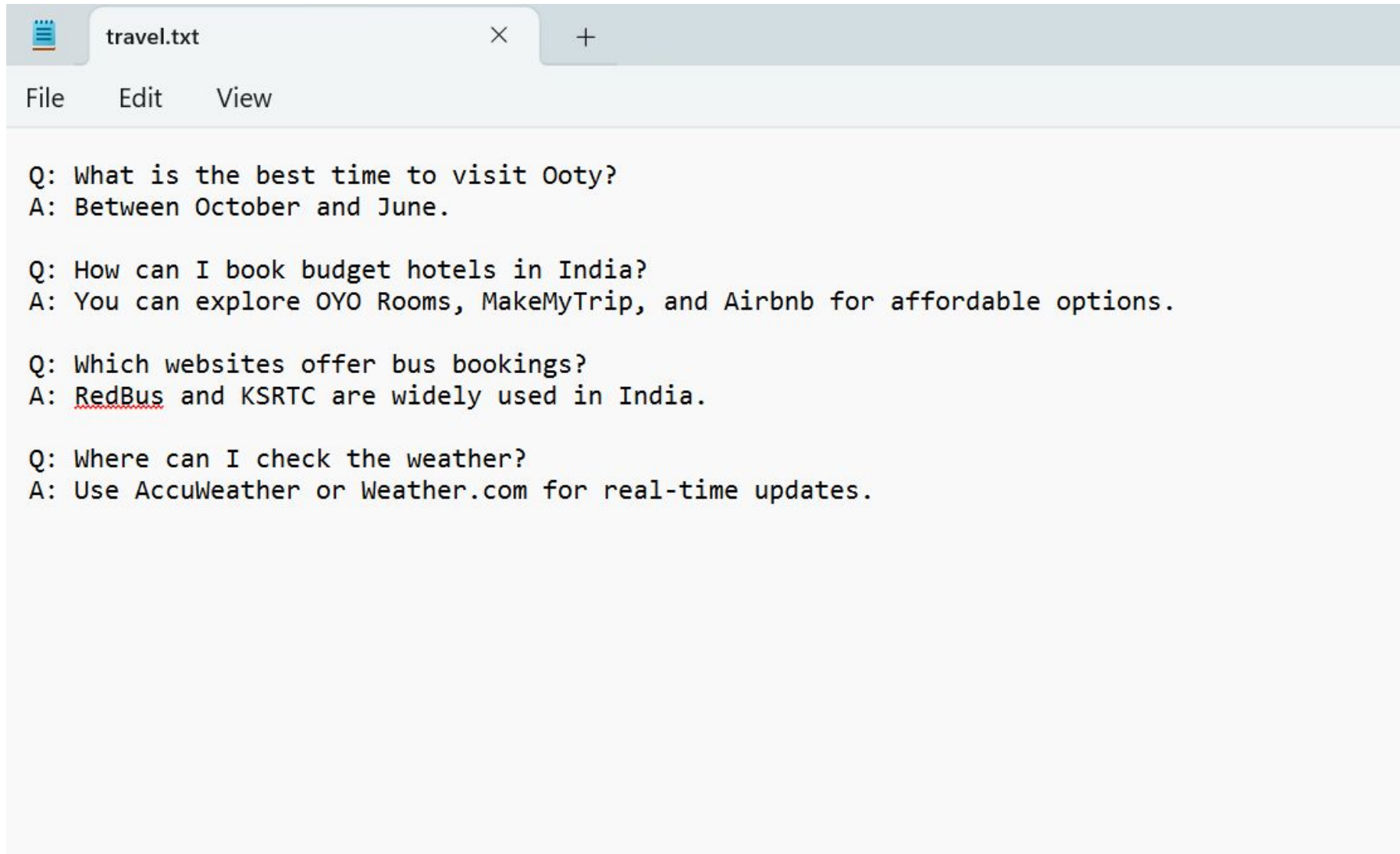
Select a tool

Choose a tool to add to your agent.

Search for a tool

 <div>Google search</div> <div>Retrieve information from the internet with the Google search engine.</div> <div><input checked="" type="checkbox"/></div>	 <div>DuckDuckGo search</div> <div>Retrieve information from the internet with the DuckDuckGo search engine.</div> <div><input checked="" type="checkbox"/></div>	 <div>Wikipedia search</div> <div>Retrieve information from Wikipedia articles.</div> <div><input checked="" type="checkbox"/></div>	 <div>Document search</div> <div>Search documents with vector indexes.</div> <div><input type="checkbox"/></div>	 <div>Tavily search</div> <div>Retrieve information from the internet with the Tavily search engine.</div> <div><input type="checkbox"/></div>
 <div>Webcrawler</div> <div>Retrieve information from a website.</div> <div><input type="checkbox"/></div>	 <div>Python Interpreter</div> <div>Execute Python code generated by the agent.</div> <div><input type="checkbox"/></div>	 <div>Weather</div> <div>Retrieve the weather of a city.</div> <div><input checked="" type="checkbox"/></div>		

## FILE THAT IS GIVEN TO THE AGENT UNDER KNOWLEDGE FIELD:



The image shows a text editor window with a single tab titled "travel.txt". The window has a menu bar with "File", "Edit", and "View". The main text area contains four Q&A pairs in a monospaced font. The questions are labeled "Q:" and the answers are labeled "A:". The answers provide specific information about visiting Ooty, booking budget hotels in India, bus bookings, and checking the weather.

```
Q: What is the best time to visit Ooty?  
A: Between October and June.  
  
Q: How can I book budget hotels in India?  
A: You can explore OYO Rooms, MakeMyTrip, and Airbnb for affordable options.  
  
Q: Which websites offer bus bookings?  
A: RedBus and KSRTC are widely used in India.  
  
Q: Where can I check the weather?  
A: Use AccuWeather or Weather.com for real-time updates.
```

# THE AGENT ANSWERS AS PER THE KNOWLEDGE FIELD FILE:

► How did I get this answer?



You: 02:50 PM

what is the best time to visit Ooty?



watsonx Agent 02:50 PM

The best time to visit Ooty is between October and June.

► How did I get this answer?



# DIFFERENT FOUNDATION MODELS AVAILABLE:

IBM watsonx

Upgrade ⓘ ⚙ Reethu Prasanna's Account ▾ Dallas ▾ RP

Projects / travel\_agent / Agent Lab

Share feedback ⓘ β Unsaved ⏴ ▾ New agent + Deploy ⓘ

Select a foundation model

Close ×


To choose a model, review characteristics such as tasks that models perform. Compare model benchmarks with scores in the range 0–100. Higher scores are better.

All models Model benchmarks

🔍 Search for a model or task

Agents


Want to bring your own model?



granite-3-3-8b-instruct

Granite-3.3-8b-Instruct is an IBM-trained, dense decoder-only models, which is particularly well-suited for generative tasks.


Provider: IBM Type: Provided model



llama-3-2-11b-vision-inst...

Llama-3-2-11b-vision-instruct is an auto-regressive language model that uses an optimized transformer architecture.


Provider: Meta Type: Provided model



llama-3-2-90b-vision-inst...

Llama-3-2-90b-vision-instruct is an auto-regressive language model that uses an optimized transformer architecture.


Provider: Meta Type: Provided model




llama-3-3-70b-instruct

This version of Llama-3.3-70b-instruct is also the FP8 quantized version of the original FP16 weights.

Provider: Meta Type: Provided model





mistral-large

Mistral Large, the most advanced Large Language Model (LLM) developed by Mistral AI, is an exceptionally powerful model....

Provider: Mistral AI Type: Provided model

# SAVING AND DEPLOYING THE AGENT:

The screenshot displays the IBM watsonx user interface. At the top, a dark navigation bar contains the 'IBM watsonx' logo, an 'Upgrade' button, and user account information for 'Reethu Prasanna's Account' in the 'Dallas' region. The main content area is titled 'Create a deployment space' with a subtitle 'Use a space to collect assets in one place to create, run, and manage deployments'. A modal dialog box is open in the center, titled 'The space is being prepared...'. It contains the text 'The space "Travel\_agent\_1" is being created.' and a progress indicator for 'Step 1 of 1. Creating deployment space.' with a 'Go to space' button. The background interface shows a sidebar with options like 'Tags (optional)', 'Storage', and 'Advanced Settings'.

IBM watsonx

Upgrade ?

Reethu Prasanna's Account Dallas

## Create a deployment space

Use a space to collect assets in one place to create, run, and manage deployments

Tags (optional)

Find or create tags

Add tags to make assets

Storage

Cloud Object Storage

Space will include integrations

watsonx.ai Runtime (optional)

watsonx.ai Runtime-to-Edge

Advanced Settings

The space is being prepared...

The space "Travel\_agent\_1" is being created.

Step 1 of 1. Creating deployment space.

Go to space

Cancel Creating...

# CONCLUSION

- The Travel Planner Agent provides a structured, interactive experience for trip planning using IBM watsonx.ai's instruction-based Agent Lab.
- Built entirely in a no-code environment, it empowers beginners to simulate intelligent travel assistance without programming or integrations.
- Challenge: One key limitation was simulating dynamic, personalized responses without real-time APIs or advanced tools, relying solely on prompt engineering.
- Despite this, the agent effectively handles user preferences, delivers realistic suggestions, and creates a smooth, guided planning flow.  
It offers a solid foundation that can later be extended with external APIs, live data, and multilingual support for even smarter travel planning.



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# FUTURE SCOPE

- Integrate real-time APIs to enhance realism with live weather, transport availability, and hotel booking data.
- Enable geo-location awareness to offer region-specific destination suggestions and local travel options.
- Add multilingual support to make the agent more accessible to users across different languages and regions.
- Incorporate voice input handling for more natural, hands-free interactions—ideal for mobile users.
- Enhance intelligence using Watson Discovery, enabling the agent to dynamically answer travel-related queries about destinations, activities, and safety tips



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# REFERENCES

- IBM watsonx.ai Documentation – Official guide for building instruction-based agents using Agent Lab in IBM Cloud.
- IBM Cloud Lite Plan Services – Free-tier services leveraged for no-code agent development and deployment.
- Prompt Lab Tutorials and Resources – Learning materials used to understand instruction-driven agent logic and LangGraph architecture.

# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



Reethu P

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 16, 2025  
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/c2ba5ea1-a501-4a37-bf3b-7d020d7a198d>



# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



## Reethu P

Has successfully satisfied the requirements for:

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### Journey to Cloud: Envisioning Your Solution

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Issued on: Jul 17, 2025  
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/98a0a18c-1535-41e1-93da-b60031edd642>



# IBM CERTIFICATIONS

IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Reethu Prasanna

for the completion of

**Lab: Retrieval Augmented Generation with  
LangChain**

(ALM-COURSE\_3824998)

According to the Adobe Learning Manager system of record

**Completion date:** 17 Jul 2025 (GMT)

**Learning hours:** 20 mins



**THANK YOU**