

# CAPSTONE PROJECT

## TRAVEL PLANNER AGENT

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CSE(Artificial Intelligence & Machine Learning)

 [GitHub](#)

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# OUTLINE

- **Problem Statement**
- **Proposed Solution**
- **System Development Approach**
- **Deployment**
- **Result**
- **Conclusion**
- **Future Scope**
- **References**

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# PROBLEM STATEMENT

Planning a trip can be time-consuming and confusing due to scattered information across multiple platforms. Users often struggle to choose destinations, create itineraries, manage bookings, and stay updated with real-time changes.

To solve this, we propose a Travel Planner Agent — an AI-powered assistant built using IBM Cloud Lite and IBM Granite. It helps users plan trips intelligently by:

- Suggesting destinations based on preferences and budget
- Generating personalized itineraries
- Recommending transport and accommodations
- Integrating real-time weather, maps, and alerts

This smart assistant simplifies complex travel planning into a seamless and interactive experience.

# PROPOSED SOLUTION

## User Profile Creation & Input Collection:

- The agent begins by gathering the traveler's preferences, goals, budget, dates, destinations, accommodation standards, and activity interests.
- Supports dialog-based interaction or form-based inputs for a personalized start.

## Intelligent Destination and Itinerary Recommendation:

- Uses machine learning and recommendation algorithms to suggest destinations and activities that match user preferences and constraints.
- Ensures realistic time allocation and considers proximity between attractions.

## Real-Time Data Integration:

- Integrates with mapping services and transportation APIs to recommend and visualize optimal routes, travel times, and transit options.
- Syncs with weather APIs and updates plans if forecasts change (e.g., rainy days = indoor activities).

## Accommodation and Transport Management

- Searches for available transport options (flights, trains, buses, rental cars) based on budget and convenience.
- Recommends stays (hotels, hostels, rentals) matching user preferences and manages comparisons on price, rating, and location.

## Seamless Booking and Notifications

- Connects to booking platforms to reserve transport, accommodation, and activities.
- Provides booking confirmations, reminders, and real-time alerts if changes or cancellations occur.

## **Adaptive Itinerary & Dynamic Scheduling**

- Monitors conditions throughout the trip, updating the itinerary in real-time as needed (e.g., traffic delays, attraction closures, weather events).
- Offers instant alternatives and rescheduling when disruptions arise.

## **User Assistance and Local Guidance**

- Supplies maps, navigation, and local recommendations (restaurants, events, customs).
- Acts as an in-trip assistant for spontaneous questions or changes.

## **Budget Monitoring and Optimization**

- Tracks estimated vs. actual spending.
- Suggests more cost-effective alternatives where possible.

## **Deployment:**

- Develop a user-friendly interface or application that provides real-time predictions .
- Deploy the solution on a scalable and reliable platform, considering factors like server infrastructure, response time, and user accessibility.

# SYSTEM APPROACH

The "**System Approach**" section outlines the overall strategy and methodology for developing and implementing the Travelling planning agent . Here's a suggested structure for this section:

## **System requirements:**

- Operating System: Windows 10 / Linux / macOS
- RAM: Minimum 4 GB
- Internet: Required for IBM Cloud and API access

## **Tools:**

- IBM Watsonx.ai (Granite model access)
- IBM Code Engine (for deployment)
- Git/GitHub for version control

## **Library required to build the model:**

- IBM-Watsonx-ai
- requests (for APIs)
- IBM cloud CLI (for IBM Cloud operations)

# DEPLOYMENT

1. Click on Deploy for deployment of Agent.

The screenshot shows the Edunet AI agent deployment interface. The top navigation bar includes 'Projects / Travel Planner Agent / Travel planner agent', 'Share feedback', 'Autosave on', 'New agent', and a 'Deploy' button highlighted with a red rectangle. The left sidebar, titled 'Build', contains a list of options: 'Setup', 'Configuration', 'Knowledge', and 'Tools', with 'Tools' selected and highlighted by a blue border. The main area, titled 'Agent preview', displays a welcome message from the 'Travel planner agent' at 02:53 PM, followed by a diagram of a travel itinerary. Below the diagram, there are two sample questions with corresponding response buttons: 'Your smart travel assistant is ready. Where to?' and 'Let's plan your next adventure. Just tell me where, how much, and what you love!'. At the bottom, there is a text input field labeled 'Type something...'.

Projects / Travel Planner Agent / Travel planner agent

Share feedback β Autosave on 📁 ▼ New agent Deploy 🔗 🔒 ℹ️

**Build** AI Model: granite-3-3-8b-instruct ⚙️ <

- Setup ▼
- Configuration ▼
- Knowledge ▼
- Tools** ▼

**Agent preview**

🤖 Travel planner agent 02:53 PM

Welcome to Travel planner agent

An AI agent for travelling your trips.

**Sample questions**

"Your smart travel assistant is ready. Where to?" →

Let's plan your next adventure. Just tell me where, how much, and what you love!" →

Type something... 🗨️ ▶️

## 2. Now we have to create a API key (Click create to open the API key page in new window.)

**Deploy as an AI service** ×

Create an online deployment. If you want to edit code in notebook format before deploying, save as a deployment notebook. [Learn more.](#)

**i** You must create a user API key. Click Create to open the API key page in a new tab.

**Create**

**Define details**

Deployment name

Sous Chef

Target deployment space

New deployment space + Reload ↻

Why don't I see all of my spaces? ⓘ

Cancel Deploy ▶



3. Click on create a key option.

IBM watsonx

Upgrade

?


🔔

Manish Sharma's Account

Dallas

MS

⋮



Manish Sharma

sharmamanish188666@gmail.com

[Edit IBMid profile](#)

Dark theme off

Profile

Git integrations


User API key


User API key

A user API key is required to authenticate runtime operations in IBM watsonx. Rotate keys as needed to create a new key and phase out the current key. [Learn more](#)

Create a key

+

Name	Creation date	Status
<div><div></div><div><div>Start by adding a user API key.</div><div>Click Create a Key to add a user API Key.</div></div></div>		



## 4. User API key successfully created.

IBM watsonx

Upgrade

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Manish Sharma

sharmamanish188666@gmail.com

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Profile

Git integrations

User API key

✔ User API key is successfully created.

Your new key is stored in IBM watsonx and IBM Cloud.

✕

User API key

A user API key is required to authenticate runtime operations in IBM watsonx.

Rotate keys as needed to create a new key and phase out the current key. [Learn more](#)

🗑️

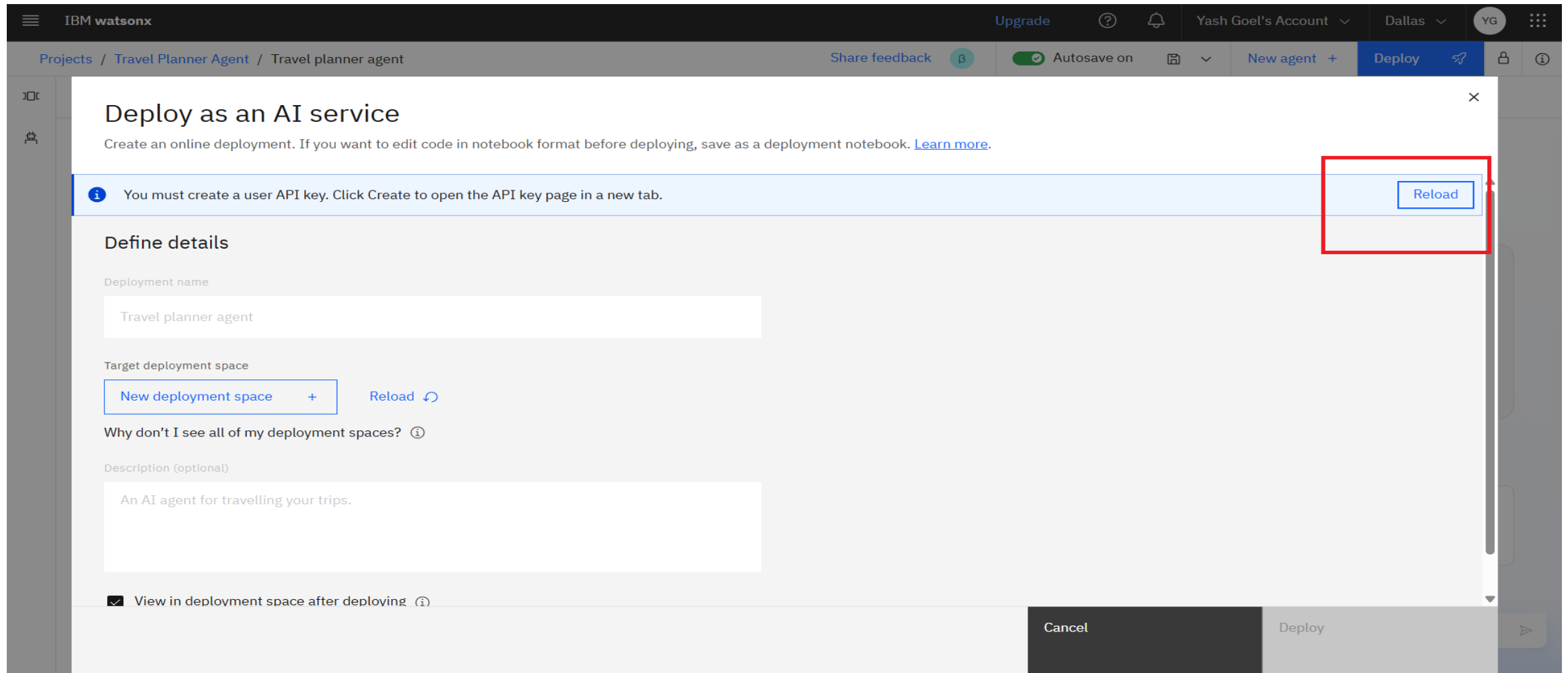
Rotate

🔄

?

Name	Creation date	Status
cpd-apikey-IBMid-6980010CAQ-2025-08-02T13:25:49Z	August 2, 2025 at 6:55:49 PM	✔ Active

## 5. Click on Reload button.



IBM watsonx

Upgrade ? Yash Goel's Account Dallas YG

Projects / Travel Planner Agent / Travel planner agent Share feedback Autosave on New agent + Deploy

### Deploy as an AI service

Create an online deployment. If you want to edit code in notebook format before deploying, save as a deployment notebook. [Learn more.](#)

**i** You must create a user API key. Click Create to open the API key page in a new tab. **Reload**

#### Define details

Deployment name

Travel planner agent

Target deployment space

New deployment space + Reload ↺

Why don't I see all of my deployment spaces? ⓘ

Description (optional)

An AI agent for travelling your trips.

☒ View in deployment space after deploying ⓘ

Cancel Deploy

## 6. Click on Reload and after that New deployment space.

Projects / Travel Planner AI bot / Travel PLanner AI

Share feedback β Autosave on ⏏ ⌵ New agent + Deploy 🔗 🔒 ℹ️

### Deploy as an AI service ✕

Create an online deployment. If you want to edit code in notebook format before deploying, save as a deployment notebook. [Learn more.](#)

ℹ️ You must create a user API key. Click Create to open the API key page in a new tab.

Reload

#### Define details

Deployment name

Travel PLanner AI

Target deployment space

New deployment space + Reload ↺

Why don't I see all of my deployment spaces? ℹ️

Description (optional)

A Travel Planner Agent is an AI-powered assistant that helps users plan trips efficiently.

Cancel Deploy

## 7. Enter deployment space name , Select deployment stage as development and select Watsonx.ai Runtime service.Click on create.

### Create a deployment space

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

+ New

Local file

Name

Travel Planner AI

Description (Optional)

0/100

What's the purpose of this space?

Deployment stage ⓘ

Development

Tags (optional)

Find or create tags

Add tags to make assets easier to find

Storage

Cloud Object Storage-xp

Space will include integration with [Cloud Object Storage](#) for storing space assets.

watsonx.ai Runtime (optional)

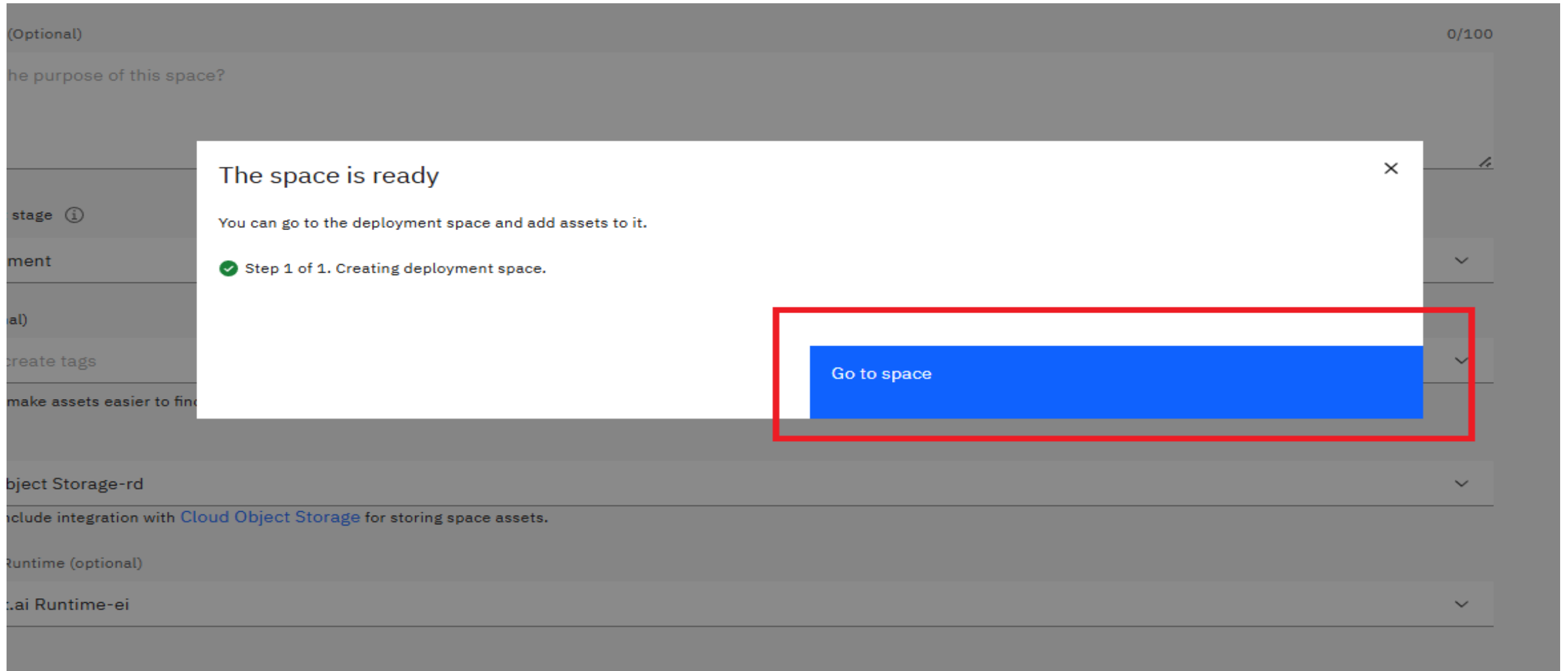
watsonx.ai Runtime-mq

Advanced Settings

Cancel

Create

## 8. Now your space is ready, click on go to space.



## 9. Now click on reload button , after that click on deploy

Projects / Travel Planner AI bot / Travel PLanner AI

Share feedback β Autosave on 📁 ▼ New agent + Deploy 🔗 🔒 📄

Deploy as an AI service ×

Create an online deployment. If you want to edit code in notebook format before deploying, save as a deployment notebook. [Learn more.](#)

Define details

Deployment name

Travel PLanner AI

Target deployment space

New deployment space +

Reload ↺

Why don't I see all of my deployment spaces? ⓘ

Description (optional)

A Travel Planner Agent is an AI-powered assistant that helps users plan trips efficiently.

Cancel

Deploy >

10. Your Agent is Deployed. Now click on Agent name.

Deployment spaces /

↑↓

ⓘ

🔗

🕒

💬

⚙️

My\_deployment1

Overview

Assets

Deployments

Jobs

Manage

🔍 Search

↺

Name	Type	Status	Asset	Asset type	Tags	Last modified
<div>⌵</div> Travel PLanner AI	Online	✅ Deployed	Travel PLanner AI	Ai service	<div>wx-agent</div> ✎	33 seconds ago Manish Sharma (You)

Items per page: 20

1-1 of 1 items

1 of 1 pages



## 11. Now click on Preview to test our AI Agent.

IBM watsonx

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Deployment spaces / My\_deployment1 / Travel Planner AI /

Travel Planner AI Deployed Online

API reference

Test

Preview

Endpoints for inferencing ⓘ

Private endpoint

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/6da2258d-8ef7-429a-9401-63148bfb24b7/ai\_s

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/6da2258d-8ef7-429a-9401-63148bfb24b7/ai\_s

Public endpoint

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/6da2258d-8ef7-429a-9401-63148bfb24b7/ai\_s

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/6da2258d-8ef7-429a-9401-63148bfb24b7/ai\_s

Learn more about the 2021-05-01 version query parameter

Code snippets

cURL

Java

JavaScript

Python

Scala

Bearer <token> ⓘ

IAM

About this deployment

Name

Travel Planner AI

Description

A Travel Planner Agent is an AI-powered assistant that helps users plan trips efficiently.

Deployment Details

Deployment ID: 6da2258d-8ef7-42...

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 AI

520dd2e7-0d84-4ee4-8a88-d454a0a8a1ha


edunet

foundation

# RESULT

Now to test our Agent lets ask some questions about Travelling.

- Give me a 10 days itinerary of Meghalaya under 10000.

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Deployment spaces / My\_deployment1 / Travel PLanner AI /


Travel PLanner AI ✔ Deployed Online

API reference Test **Preview**

New chat +

 You 07:07 PM

give me a 10 days itinerary of Meghalaya under 10000 rupees

 Travel PLanner AI 07:07 PM

To create a 10-day itinerary for Meghalaya under 10,000 INR, I'll use a combination of my knowledge base and hypothetical API calls to provide you with a suggested plan. Here's a rough outline:

**Day 1: Arrival in Shillong**

- Arrive at Umhlong (Shillong) via Shillong Airport or by road.
- Check into a budget hotel (approx. 500 INR/night).
- Visit Living Root Bridge (near Cherrapunji) - a must-see natural wonder.
- Overnight in Shillong.

Type something... 🔍

# Travel PLanner AI ✔️ Deployed Online

API reference

Test

**Preview**[New chat](#) +

## Day 2: Shillong Sightseeing

- Visit Ward's Lake and enjoy the serene surroundings.
- Explore Golf Links and the nearby Gymkhana Club.
- Visit Umiam Lake for a relaxing boat ride.
- Overnight in Shillong.

## Day 3: Explore Nearby Villages

- Travel to Bishop's Ccemetery and see the surreal pathways through the hills.
- Visit Khasi Hills and learn about the local culture.
- Overnight in Shillong.

## Day 4: Cherrapunji

- Travel to Cherrapunji (approx. 2 hours from Shillong).

Type something...



# Travel Planner AI ✅ Deployed Online

[API reference](#)[Test](#)[Preview](#)[New chat +](#)

## Day 5: More in Cherrapunji

- Visit Langsha Falls and enjoy the scenic beauty.
- Explore the local market for handicrafts and local produce.
- Overnight in Cherrapunji.

## Day 6: Travel to Dawki

- Travel to Dawki (approx. 2 hours from Cherrapunji).
- Visit Umngai River for a boat ride across the clear blue water.
- Explore the India-Bangladesh border and the Sky Walk.
- Overnight in Dawki.

## Day 7: Near Dawki

- Visit the nearby Lum Nehgrai Waterfall.



# Travel PLanner AI 🟢 Deployed Online

[API reference](#)[Test](#)[Preview](#)[New chat +](#)

## Day 9: Nature and Adventure

- Visit Elephant Falls and enjoy the misty surroundings.
- Consider a trek to Sylhet Hills for a more adventurous day.
- Overnight in Shillong.

## Day 10: Departure


- Last-minute shopping or sightseeing.
- Depart from Shillong.

## Budget Breakdown (Approximate):

- Accommodation (10 nights): 5,000 INR (budget hotels/guesthouses)
- Local Transport (shared taxis, buses): 2,000 INR
- Food (street food, local eateries): 2,500 INR




- It gives me complete itinerary under 10000 for 10 days.







 IBM watsonx

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## Travel PLanner AI ✔ Deployed Online

API reference Test **Preview**

New chat +

✖ Depart from something...

**Budget Breakdown (Approximate):**


- Accommodation (10 nights): 5,000 INR (budget hotels/guesthouses)
- Local Transport (shared taxis, buses): 2,000 INR
- Food (street food, local eateries): 2,500 INR
- Entrance fees and activities: 500 INR

**Total: ~10,000 INR**

Please note that prices are approximate and can vary. It's advisable to check current rates closer to your travel dates. Also, consider the monsoon season (May to September) for lush greenery but be prepared for occasional rain. The best time to visit Meghalaya is from October to April for pleasant weather.

For real-time data, pricing, and availability, you would need to integrate with travel APIs for flights, hotels, and local transport. Additionally, using a tool like IBM Granite could help refine this itinerary based on specific interests or preferences.

✖ This itinerary is a general guide and may be adjusted based on your preferences, season, and specific travel requirements. Prices are approximate.

Type something... 

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# CONCLUSION

- In summary, the Travel Planner Agent addresses the pain points of modern trip planning by unifying key features—personalized suggestions, itinerary generation, booking support, and live updates—through an intelligent AI-driven platform powered by IBM Cloud Lite and IBM Granite.
- This solution not only streamlines travel organization and decision-making but also enhances the overall experience by providing timely, relevant, and easily accessible information. As a result, users benefit from a smoother, more interactive, and stress-free approach to planning their journeys.

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# FUTURE SCOPE

- The future of travel management will be defined by fully autonomous AI agents that handle every aspect of planning, booking, and in-trip adjustments with minimal input, offering proactive, emotionally intelligent, and hyper-personalized support.
- These systems will leverage multimodal interfaces—such as voice, AR/VR, and wearables—to create immersive, intuitive experiences, while advanced machine learning will tailor recommendations to users' real-time context, preferences, and emotions, predicting disruptions and providing seamless solutions before problems arise.



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# REFERENCES

- Edunet foundation
- IBM cloud

# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



## Manish Sharma

Has successfully satisfied the requirements for:

### Getting Started with Artificial Intelligence



Issued on: Jul 19, 2025  
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/fa623386-5662-46f1-8f7f-eeae63dcbe4f>



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### Journey to Cloud: Envisioning Your Solution



Issued on: Jul 20, 2025  
Issued by: IBM SkillsBuild

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# IBM CERTIFICATIONS

IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Manish Sharma

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)

**Learning hours:** 20 mins



**THANK YOU**