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# CAPSTONE PROJECT

## TRAVEL PLANNER AGENT

**Presented By:**

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# OUTLINE

- **Problem Statement**
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Deployment**
- **Result Conclusion**
- **Future Scope**
- **References**

# PROBLEM STATEMENT

- The Challenge - 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

- Proposed Solution: Travel Planner Agent using IBM AI Cloud & Granite model
- **1. User Interaction & Input Collection**
- Use IBM Watson Assistant to interact with users via chat/voice
- Collect preferences: destination types, budget, travel dates, interests
- Capture constraints: dietary, accessibility, visa, language, etc.
- **2. Real-time Data Integration**
- Integrate with:
  - Google,duck duck go to serach for events hotels and flights
  - Weather updates tool for aether updates
  - Use IBM App Connect or API Gateway for secure and scalable API handling
- **3. Personalized Itinerary Generation**
- Use Granite LLMs to generate customized travel plans
- Suggest optimized travel routes and times
- Recommend activities, restaurants, and accommodations based on user profile

# PROPOSED SOLUTION

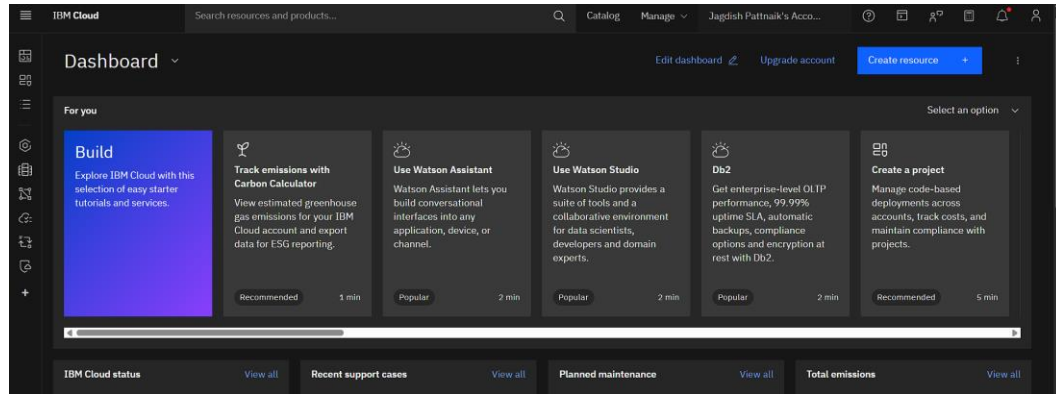
- Proposed Solution: Travel Planner Agent using IBM AI Cloud & Granite
- 4 Natural Language Understanding (NLU) with Granite
- Use IBM Granite foundation models to:
  - Understand complex user queries
  - Extract entities like locations, dates, preferences
- 5 Real-Time Test and optimization
- Use deployment environment to test
  - Re-plan in case of cancellations or disruptions
  - Offer alternatives using AI logic and available data
- 6. Deployment & Scalability
- Host on IBM Cloud Kubernetes or Code Engine for auto-scaling
- Use IBM Monitoring & Logging for performance tracking
- Enable multi-device access (Web, Mobile)

# SYSTEM APPROACH

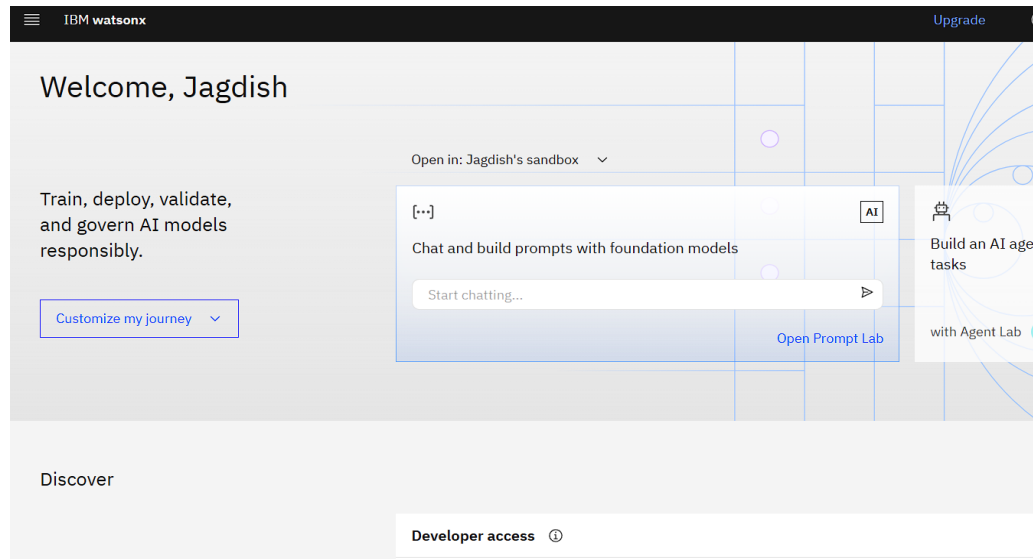
## .System requirements

- IBM CLOUD SERVICES
- IBM WATSON X RUN TIME SERVICES
- IBM WATSON X AI/ML SERVICES
- IBM GRANAITE MODELS

# RESULT AND STEPS



SIGN IN IBM CLOUD PORTAL



THEN NAVIGATE TO WATSONX AI PORTAL AND CREATE RESOURCE

# RESULT-STEPS

The screenshot shows the 'Create a project' interface in IBM watsonx. The header includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'Jagdish Pattnaik's Account' in 'Dallas'. The main heading is 'Create a project' with a subtext: 'Start with a new, blank project or select from where to import an existing project.' On the left, there's a sidebar with '+ New', 'Local file', and 'Sample'. The main area is titled 'Define details' and contains three text input fields: 'Name' (filled with 'TRAVEL PLANNER AI AGENT'), 'Description (optional)' (filled with 'AN AI AGENT THAT PLANS AND BOOKS TRAVELS ACCORDING TO USERS PREFERENCE'), and 'Tags (optional)' (with an 'Add tags' button). At the bottom right are 'Cancel' and 'Create' buttons.

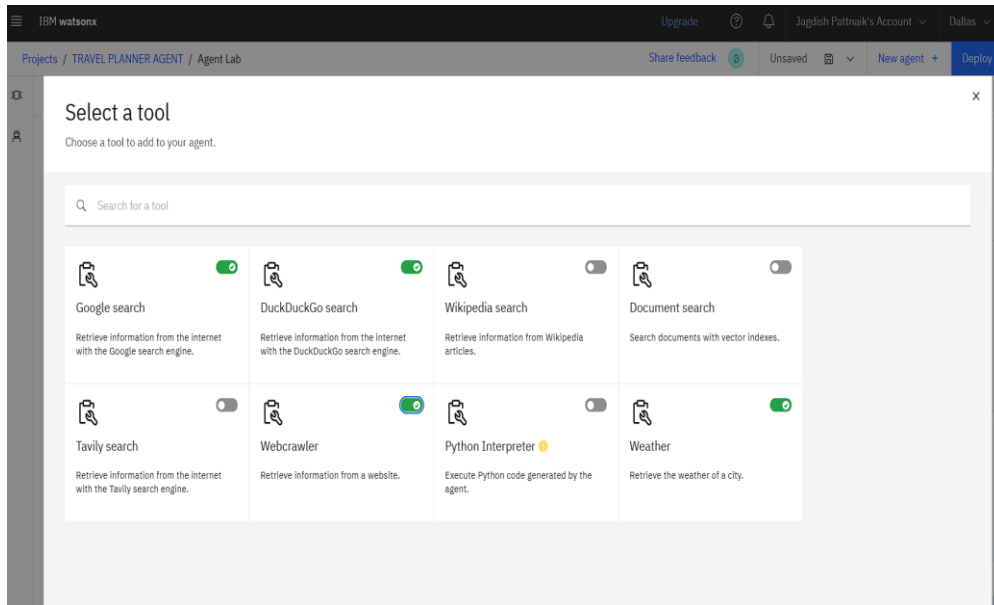
NEW AI AGENT IS CREATED AND CONFRIGURATION

The screenshot shows the 'Build' configuration page for the 'TRAVEL PLANNER AGENT' in IBM watsonx. The header includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'Jagdish Pattnaik's Account' in 'Dallas'. The main heading is 'Build' with a subtext: 'Start with a new, blank project or select from where to import an existing project.' On the left, there's a sidebar with '+ New', 'Local file', and 'Sample'. The main area is titled 'Define details' and contains three text input fields: 'Name' (filled with 'TRAVEL PLANNER AI AGENT'), 'Description (optional)' (filled with 'AN AI AGENT THAT PLANS AND BOOKS TRAVELS ACCORDING TO USERS PREFERENCE'), and 'Tags (optional)' (with an 'Add tags' button). At the bottom right are 'Cancel' and 'Create' buttons.

GRANITE MODEL SELECTED AND INSTRUCTIONS GIVEN



# RESULT



## TOOLS USED IN AI AGENT

# RESULT

## Agent preview

- JP** You: 08:58 AM  
hi
- AI TRAVEL AGENT** 08:58 AM  
Hi, where do you want to go this time?  
► **How did I get this answer?**
- JP** You: 09:00 AM  
puri odisha
- AI TRAVEL AGENT** 09:00 AM  
Great choice! Puri is a beautiful city in Odisha, known for its stunning beaches and the famous Jagannath Temple. To help you plan your trip, could you please provide me with the following details:
1. How many days do you plan to spend in Puri?
  2. What's your approximate budget per day?
  3. Are there any specific activities or attractions you're interested in?
  4. How many people will be traveling with you?
  5. Do you have any dietary restrictions or preferences?

Type something...

## Agent preview

- JP** You: 09:02 AM  
1.10 days 2.4000 inr 3.go to jagannath temple ,lokanath temple and bata mangala temple and sirluli hanuman temple near puri and beach and naerby local attractions 4.4 people.veg dieatery
- AI TRAVEL AGENT** 09:05 AM  
Thanks for the details! Here's a preliminary plan for your 10-day trip to Puri, Odisha, keeping in mind your preferences and budget:
- Accommodation:**
- Suggest staying at a budget-friendly hotel or guesthouse near the beach, such as "Hotel Sea Beach" or "Puri Beach View Inn," which offer comfortable rooms at around 1,000 INR per night.
- Transport:**
- From Bhubaneswar Airport/Railway Station to Puri, you can take a taxi or a state transport bus (around 300 INR).
  - For local travel within Puri, use auto-rickshines or hire a local taxi for day trips.
- Itinerary:**
- Day 1:**

Type something...

SAMPLE QUERY FOR USER ASKING TO GO PURI ODISA VEG FOOD ITENARY WITH VISIT TO TEMPLES

# RESULT

## Agent preview

### Day 4:

- Free day for relaxation, shopping, or further exploration of Puri Beach and markets.
- Enjoy local Odissi dance performances in the evening.

### Day 5:

- Morning: Visit the Sun Temple (Konark) - approximately 30 km from Puri, can be covered in a half-day trip.
- Return to Puri and relax.

### Day 6-10:

- Enjoy beach activities, rejuvenating spa sessions, and local cuisine.
- Explore more temples and historical sites around Puri, such as the Raghurajpur village known for its artists.

### Vegetarian Restaurants:

- "Mayura," "Ananda Bazaar," and "Shanti" are popular vegetarian restaurants in Puri serving a variety of Odisha-style dishes.

### Weather Update:

Type something...

## Agent preview



You: 09:02 AM

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AI TRAVEL AGENT 09:05 AM

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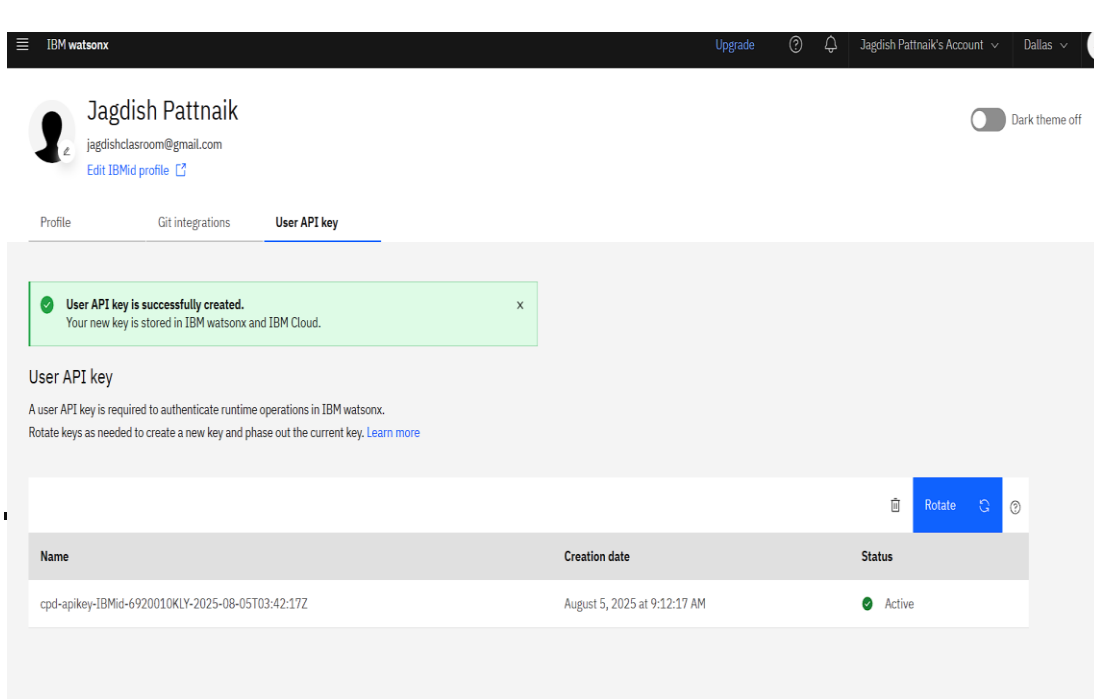
### Itinerary:

#### Day 1:

Type something...

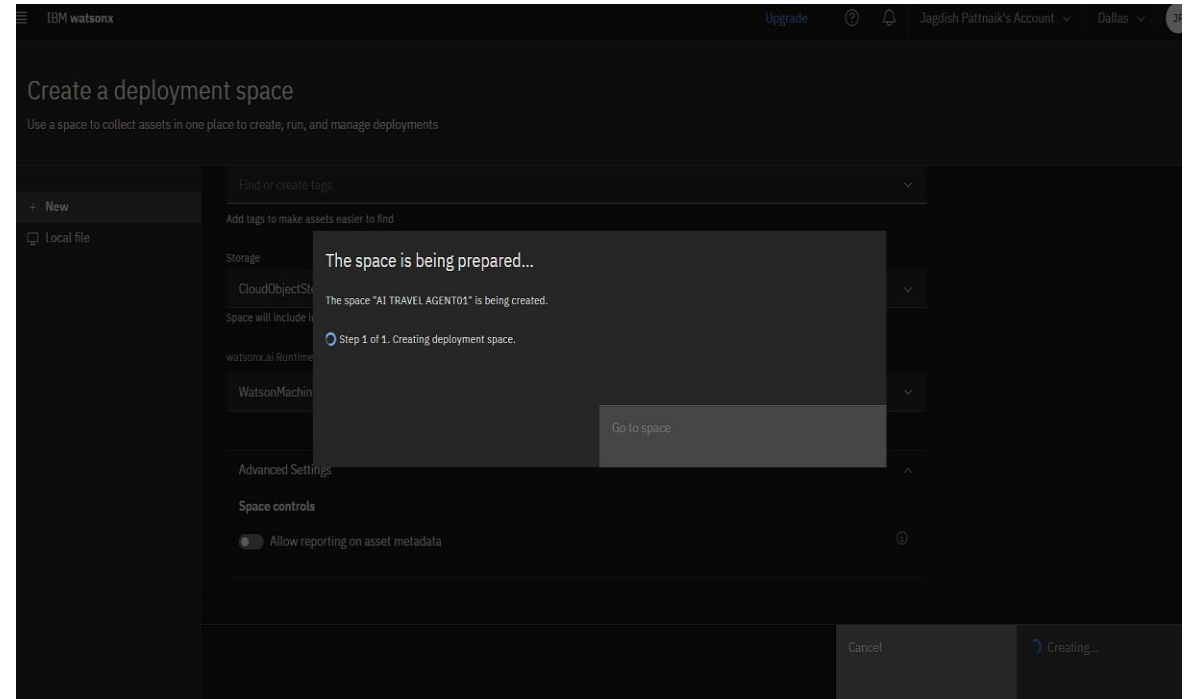
SAMPLE QUERY FOR USER ASKING TO GO PURI ODISA VEG FOOD ITENARY WITH VISIT TO TEMPLES

# RESULT -DEPLOYMENT



The screenshot shows the IBM watsonx user interface. At the top, there's a navigation bar with 'IBM watsonx', 'Upgrade', and user account information. Below this, the user's profile is displayed, including the name 'Jagdish Pattnaik' and email 'jagdishclasroom@gmail.com'. The 'User API key' tab is selected, showing a success message: 'User API key is successfully created. Your new key is stored in IBM watsonx and IBM Cloud.' Below the message, there's a section for the 'User API key' with a table listing the key details.

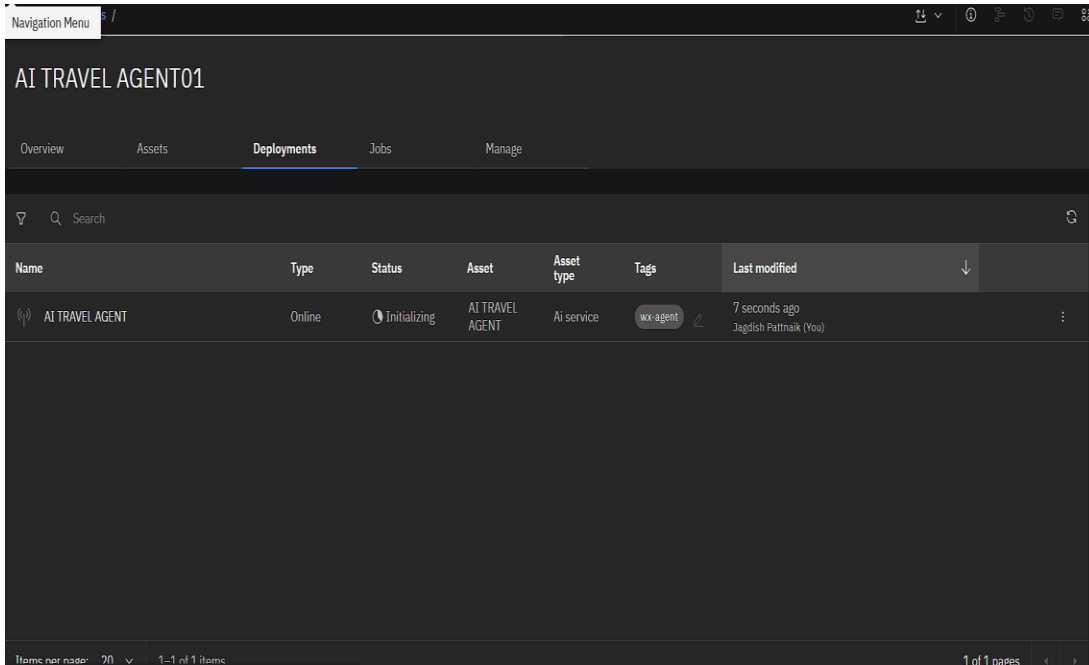
Name	Creation date	Status
cpd-apikey-IBMId-6920010KLY-2025-08-05T03:42:17Z	August 5, 2025 at 9:12:17 AM	Active



The screenshot shows the 'Create a deployment space' dialog in IBM watsonx. The dialog is titled 'Create a deployment space' and includes a subtitle 'Use a space to collect assets in one place to create, run, and manage deployments'. It features a sidebar with options like 'New', 'Local file', 'Storage', 'CloudObjectStorage', 'Space will include', 'watsonx.ai Runtime', and 'WatsonMachine'. The main area displays 'Step 1 of 1. Creating deployment space.' and a 'Go to space' button. A modal overlay at the bottom indicates 'The space is being prepared...' and 'The space "AI TRAVEL AGENT01" is being created.'.

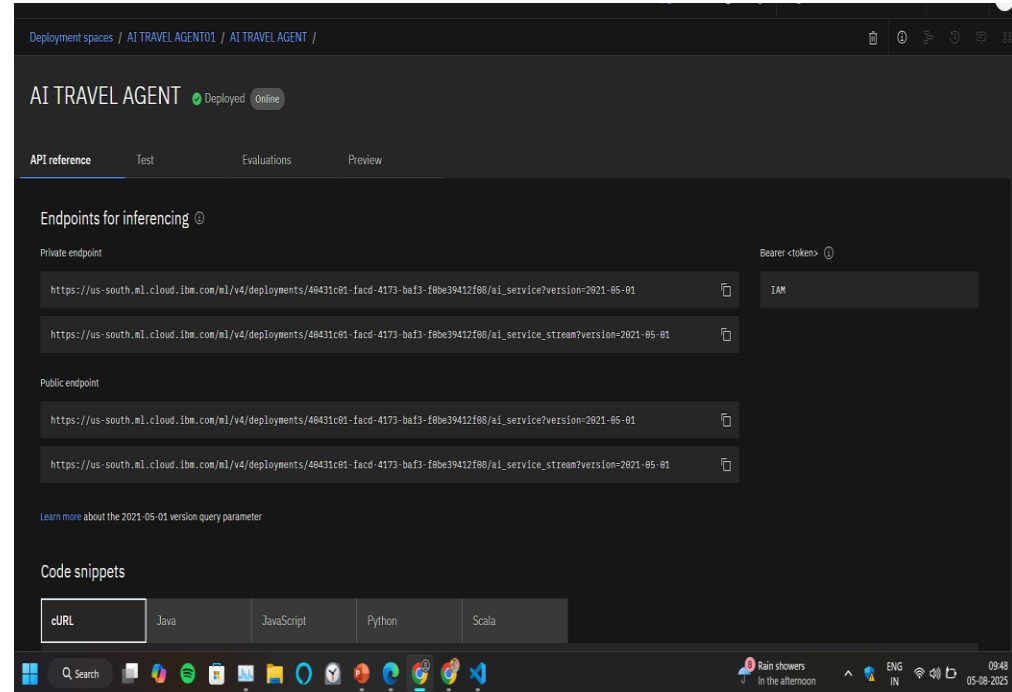
PROJECT IS SAVED AND DEPLOYMENT SPACE IS CREATED

# RESULT DEPLOYMENT



The screenshot shows the 'AI TRAVEL AGENT01' deployment page in the Azure portal. The 'Deployments' tab is selected, showing a table with one deployment: 'AI TRAVEL AGENT'. The deployment is 'Online' and 'Initializing'. The asset is 'AI TRAVEL AGENT' and the asset type is 'Ai service'. The tags include 'wx-agent'. The last modified time is '7 seconds ago' by 'Jagdish Pattnaik (You)'. The page also shows a 'Navigation Menu' and a 'Search' bar.

Name	Type	Status	Asset	Asset type	Tags	Last modified
AI TRAVEL AGENT	Online	Initializing	AI TRAVEL AGENT	Ai service	wx-agent	7 seconds ago Jagdish Pattnaik (You)



The screenshot shows the 'AI TRAVEL AGENT' deployment page in the Azure portal, specifically the 'Endpoints for inference' section. The deployment is 'Deployed' and 'Online'. The page shows two types of endpoints: 'Private endpoint' and 'Public endpoint'. Each type has two URLs listed, one for 'ai\_service?version=2021-05-01' and one for 'ai\_service\_stream?version=2021-05-01'. The 'Private endpoint' section also shows a 'Bearer <token>' field with 'IAM' selected. The 'Code snippets' section shows tabs for 'cURL', 'Java', 'JavaScript', 'Python', and 'Scala'. The 'cURL' tab is selected, showing a 'curl' command.

Endpoints for inference ①

Private endpoint

Bearer <token> ①

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/48431c01-facd-4173-baf3-f0be39412f88/ai\_service?version=2021-05-01

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/48431c01-facd-4173-baf3-f0be39412f88/ai\_service\_stream?version=2021-05-01

Public endpoint

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/48431c01-facd-4173-baf3-f0be39412f88/ai\_service?version=2021-05-01

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/48431c01-facd-4173-baf3-f0be39412f88/ai\_service\_stream?version=2021-05-01

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

Code snippets

cURL Java JavaScript Python Scala

PROJECT IS DEPLOYED SUCESSFULLY AND IS LIVE

# RESULT-SAMPLE OUTPUT

## Agent preview

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### Itinerary:

#### Day 1:

Type something...

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### Itinerary:

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Type something...

# CONCLUSION

- OUR AI AGENT IS SUCEFULLY CREATED WITH IBM GRANITE MODEL 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

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# FUTURE SCOPE

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 and can be scaled later on



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# REFERENCES

- [cloud.ibm.com](https://cloud.ibm.com)
- IBM Watson x services
- IBM ai lab beta services

# IBM CERTIFICATIONS

- Screenshot/ credly certificate( getting started with AI)



# IBM CERTIFICATIONS

- Screenshot/ credly certificate( Journey to Cloud)



# IBM CERTIFICATIONS

- Screenshot/ credly certificate( RAG Lab)





**THANK YOU**