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# IBM CAPSTONE PROJECT

## TRAVEL AI AGENT

**Presented By :-**

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## OUTLINE

- **Problem Statement**
- **Proposed System/Solution**
- **Algorithm & Deployment**
- **System Development Approach (Technology Used)**
- **Wow factor**
- **End users**
- **Result (output images)**
- **Conclusion**
- **Git-hub Link**
- **Future scope**
- **IBM Certifications**

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# 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.
- Technology - Use of IBM cloud lite services /IBM Granite is mandatory.

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## Proposed System/Solution

### ◆ Data Collection:

Collect historical travel data (e.g., bookings, trends) and real-time inputs like weather, events, and pricing.

### ◆ Data Preprocessing:

Clean data and extract key features (season, location, user preferences) for accurate modeling.

### ◆ Machine Learning Algorithm:

Use models like LSTM or recommendation systems to predict travel demand and personalize suggestions.

### ◆ Deployment:

Develop an easy-to-use app with real-time recommendations and scalable backend support.

### ◆ Evaluation:

Monitor performance using accuracy and user feedback, and continuously improve the system.

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## Algorithm & Deployment

### ◆ Algorithm Selection:

Provide a brief overview of the chosen algorithm (e.g., recommendation system, LSTM for travel trend prediction) and justify its selection based on user needs and travel data patterns.

### ◆ Data Input:

Specify the input features used by the algorithm, such as past travel history, seasonal trends, weather forecasts, local events, user preferences, and pricing data.

### ◆ Training Process:

Explain how the algorithm is trained using historical travel and user interaction data. Highlight any specific techniques like time-based cross-validation or hyperparameter tuning for personalization.

### ◆ Prediction Process:

Detail how the trained algorithm makes real-time predictions—such as suggesting destinations, optimizing itineraries, or forecasting travel costs and crowd levels.

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## TECHNOLOGY USED

- IBM cloud lite services
- Natural Language Processing (NLP)
- Retrieval Augmented Generation (RAG)
- IBM Granite model

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## IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model

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# WOW FACTORS

- **Semantic Search Across Travel Blogs, Reviews, and Itineraries**  
Find relevant travel information using context-aware searches instead of just keywords.
- **Auto-Summarization of Destinations and Travel Guides**  
Get concise summaries of places, activities, or articles to quickly assess what matters.
- **Travel History & Review Analysis**  
Analyze reviews and ratings to understand real traveler experiences and hidden insights.
- **Personalized Travel Recommendations**  
Suggest destinations, activities, or dining options based on user preferences and travel history.
- **Travel Trend Analysis**  
Track rising or seasonal travel trends across destinations, activities, and accommodations.
- **Travel Buddy & Collaboration Mapping**  
Suggest potential travel companions, local guides, or group tour options based on travel interests or upcoming plans.



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## END USERS

- **Frequent Travelers and Tourists**

Individuals exploring new destinations who need real-time guidance, booking help, and local insights.

- **Travel Agencies and Tour Operators**

Businesses that plan trips for clients and can use AI to enhance customer experience and streamline operations.

- **Corporate Travel Managers and Business Travelers**

Professionals managing business trips who benefit from automated itineraries, expense tracking, and travel compliance.

- **Digital Nomads and Remote Workers**

People working while traveling who need destination recommendations, co-working info, and connectivity tips.

# RESULTS

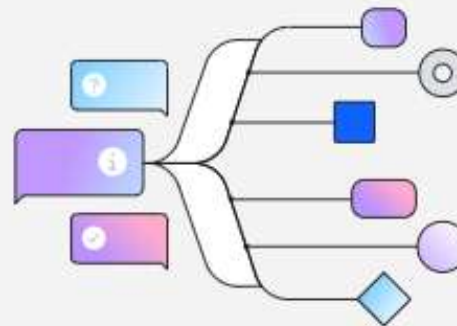
## Agent preview



watsonx Agent 02:14 PM

### Welcome to watsonx Agent

Change this description to reflect your particular agent



Type something...



# RESULTS

Agent preview

**MF** You: 02:24 PM

give me 3 days travel plan to goa

**P** watsonx Agent 02:24 PM

Here are some suggestions for a 3-day travel plan to Goa:

- 1. Day 1: Explore North Goa Beaches**
  - Visit Calangute, Baga, and Anjuna beaches.
  - Enjoy water sports, beach shacks, and local markets.
- 2. Day 2: Explore Old Goa and Panjim**
  - Visit historical churches and museums in Old Goa.
  - Explore the vibrant markets and cafes in Panjim.
- 3. Day 3: Visit Dudhsagar Falls**
  - Take a day trip to Dudhsagar Falls, one of the tallest waterfalls in India.
  - Enjoy trekking and scenic views.

For more details, you can check out the following links:

- [How should I plan a trip of 3 days to Goa? - Quora](#)
- [The Perfect Goa Itinerary for 3 Days - Kafeela by Moola](#)

Type something...

# RESULTS

## Agent preview



You: 02:27 PM

Help me to travel from dehli to mumbai



watsonx Agent 02:27 PM

Sure, I can help you with that. Here's a suggested travel plan from Delhi to Mumbai:

### 1. Flight:

- Take a flight from Indira Gandhi International Airport (DEL) to Chhatrapati Shivaji Maharaj International Airport (BOM).
- The flight duration is approximately 2 hours and 15 minutes.
- You can book your flight through various online travel agencies or directly from the airline's website.

### 2. Train:

- Alternatively, you can take a train from New Delhi Railway Station (NDLS) to Mumbai Central Railway Station (BCT).
- The train journey takes around 15 to 20 hours, depending on the train you choose.
- You can book your train tickets through the Indian Railway Catering and Tourism Corporation (IRCTC) website.

### 3. Bus:


- Another option is to take a bus from Delhi to Mumbai.
- The bus journey takes around 24 to 30 hours, depending on the bus service and route.


Type something...



# RESULTS


## Deployed AI Agent

 IBM watsonx

Upgrade ? 

Mr FAIZAN's Account ▾

London ▾

MF 

Deployment spaces / Travel Agent / Sous Chef /      Sous Chef  Deployed OnlineAPI reference Test **Preview**

New chat +

 You 03:44 PM

give travel plan to goa

 Sous Chef 03:44 PM

To plan a trip to Goa, you can follow these steps:

1. Book your flights and accommodation in North or South Goa.
2. Rent a scooter or car for travel.
3. Explore the beaches, forts, churches, and other tourist attractions in Goa.
4. Consider visiting during the monsoon season for activities like waterfall hiking, cliff jumping, and wild swimming.

Type something... 

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## CONCLUSION

- The agent can generate reports, suggest hypotheses, and even draft sections of research papers.
- It saves time by automating repetitive tasks like citation management and data extraction.
- Research Agents enhance efficiency, accuracy, and innovation in both academic and industrial R&D.

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## GITHUB LINK

- GITHUB LINK :- <https://github.com/faizankhan005/Travel-Agent>

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# FUTURE SCOPE

- **Multilingual Travel Support**  
Assist travelers in multiple languages for bookings, local guidance, and emergency help worldwide. Voice-Activated Research Assistant
- **Voice-Activated Travel Assistant**  
Enable hands-free trip planning, navigation, and instant info using voice commands while on the go. Research Gap and Novel Topic Identification
- **Real-Time Collaboration for Group Trips**  
Coordinate plans, share itineraries, and make decisions with travel companions in real time. AI-Assisted Paper Drafting
- **Destination Insights and Hidden Gem Discovery**  
Identify lesser-known attractions, cultural hotspots, and experiences tailored to the traveler's interests.
- **Seamless Integration with Booking Platforms**  
Book flights, hotels, and tours directly through connected services without switching apps.
- **AI-Assisted Itinerary Planning**  
Automatically draft optimized travel plans based on preferences, budget, and time constraints.
- **Expense Tracking and Smart Budgeting**  
Track spending across currencies and receive suggestions to stay within travel budgets.



# IBM CERTIFICATIONS

- getting started with AI



## RAG LAB certificate



In recognition of the commitment to achieve  
professional excellence



**FAIZAN KHAN**

Has successfully satisfied the requirements for:

**Code Generation and Optimization Using IBM Granite**



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## Journey to Cloud: Envisioning Your Solution

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IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Faizan

for the completion of

**Mastering the Art of Prompting**

(MDL-298)

According to the Moodle system of record

**Completion date:** 15 Jul 2025 (GMT)

**Learning hours:** 1 hr



**THANK YOU**