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# **CAPSTONE PROJECT**

## **TRAVEL PLANNER AGENT**

**(PROBLEM STATEMENT NO.5)**

**Presented By:**

**1. MOHIT KUMAR - CMR ENGINEERING COLLEGE - CSE**

# OUTLINE

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

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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.

# PROPOSED SOLUTION

- The proposed system is an AI-powered Travel Planner Agent that automates, simplifies, and personalizes the travel planning experience by:
  1. Collecting user preferences (destinations, budget, interests, constraints)
  2. Aggregating real-time data (flights, hotels, weather, local events)
  3. Utilizing IBM Cloud Lite/Granite AI for intelligent, scalable recommendations
  4. Building dynamic, customizable itineraries and managing bookings
  5. Providing real-time alerts, schedule optimization, and on-trip assistance

# SYSTEM APPROACH

## System Requirements:

- Web/mobile interface
- Secure IBM Cloud Lite deployment
- IBM Granite for AI-driven conversation and recommendation

## Libraries Required:

- Python
- Integration APIs: Flights, Hotels, Weather, Maps
- IBM AI/ML SDKs (Watsonx/Granite)

# ALGORITHM & DEPLOYMENT

- **Algorithm Selection:**

Multi-stage AI: Natural Language Understanding (for requests), Recommendation Systems (suggest destinations, hotels), Scheduling Algorithms (itinerary), Rescheduling (real-time).

- **Data Input:**

User preferences, real-time travel data, maps, weather, pricing.

- **Training Process:**

IBM Granite pre-trained models for conversation, recommendation engine fine-tuned on travel scenarios.


- **Prediction Process:**






Generate tailored itineraries, suggest bookings, monitor triggers for real-time optimization.








- **Deployment:**




Hosted as a web service on IBM Cloud Lite, accessible from mobile/web


# RESULT


 IBM watsonx



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Projects / Travel\_Agent\_Planner / watsonx Agent [Share feedback](#)   Autosaved 4:27 PM   [New agent +](#) [Deploy](#)   

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Setup 


Configuration 

FrameworkArchitectureLangGraph ReAct 

Instructions [Advanced configuration](#)

Welcome to your AI-powered Travel Planner Agent!  
This intelligent assistant is designed to guide you through seamless travel planning, offering personalized recommendations and real-time updates .  
How to Interact with the Agent


Knowledge 


Tools 


[Add a tool](#) [Create custom tool](#)


Added tools (4)

Agent preview



 You: 04:09 PM  
hii

 watsonx Agent 04:09 PM  
Hello! How can I assist you with your travel plans today?  
▶ [How did I get this answer?](#)

 You: 04:10 PM  
give a plan for travel to delhi from hyderabad for 4 days in rs. 15000 budget

 watsonx Agent 04:10 PM  
Sure, here's a rough plan for a 4-day trip to Delhi from Hyderabad within a budget of Rs. 15,000:  
**Day 1: Arrival in Delhi**

- Morning: Depart from Hyderabad to Delhi. You can take a flight which usually takes about 2 hours.
- Afternoon: Arrive at Indira Gandhi International Airport, Delhi. Take a prepaid taxi or use ride-hailing services like Ola/Uber to your hotel.
- Evening: Check-in at a budget hotel in the main tourist areas like Paharganj, Connaught Place, or Karol Bagh.

# RESULT

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### Configuration



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How to Interact with the Agent

### Knowledge



### Tools



Add a tool

Create custom tool

Added tools (4)

## Agent preview

Sure, here's a rough plan for a 4-day trip to Delhi from Hyderabad within a budget of Rs. 15,000:

### Day 1: Arrival in Delhi

- Morning: Depart from Hyderabad to Delhi. You can take a flight which usually takes about 2 hours.
- Afternoon: Arrive at Indira Gandhi International Airport, Delhi. Take a prepaid taxi or use ride-hailing services like Ola/Uber to your hotel.
- Evening: Check-in at a budget hotel in the main tourist areas like Paharganj, Connaught Place, or Karol Bagh.
- Night: Rest after a day of travel. Explore the local street food around your hotel.

### Day 2: Sightseeing

- Morning: Visit Red Fort, Jama Masjid, and Chandni Chowk.
- Afternoon: Head to India Gate, Rashtrapati Bhavan, and nearby Connaught Place for shopping.
- Evening: Enjoy local street food in Chandni Chowk or try out popular eateries in Hauz Khas Village.
- Night: Relax at your hotel or explore nearby markets.

### Day 3: More Sightseeing

- Morning: Visit Lotus Temple, Akshardham Temple, or Humayun's Tomb.

Type something...





# RESULT

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[How to Interact with the Agent](#)

Knowledge ▾

Tools ▴

Add a tool Create custom tool

Added tools (4)

Agent preview

Day 3: More Sightseeing

- Morning: Visit Lotus Temple, Akshardham Temple, or Humayun's Tomb.
- Afternoon: Explore Qutub Minar and nearby monuments in the Mehrauli archaeological park.
- Evening: Shop at Janpath Market or visit the Crafts Museum.
- Night: Enjoy a cultural show at the India Habitat Centre or Kingdom of Dreams.

Day 4: Departure

- Morning: Visit any remaining attractions or revisit your favorites.
- Afternoon: Depending on your flight, check-in for your return flight to Hyderabad.

Budget Breakdown (Approximate):

- Flights (round trip): Rs. 3,000 - Rs. 5,000 (depending on how early you book)
- Accommodation (4 nights in budget hotel): Rs. 3,000 - Rs. 4,000
- Food (local and street food): Rs. 3,000 - Rs. 4,000
- Local transport (metros, auto-rickshaws, local taxis): Rs. 2,000 - Rs. 3,000
- Sightseeing and entrance fees: Rs. 2,000 - Rs. 2,000
- Miscellaneous expenses: Rs. 1,000

Total: Rs. 14,000 - Rs. 17,000

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How to Interact with the Agent

### Knowledge



### Tools



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Added tools (4)

## Agent preview



You: 04:27 PM

give me plan for 5 day dubai trip from delhi in the budget of rs 45000



watsonx Agent 04:27 PM

Here's a suggested 5-day itinerary for a trip to Dubai from Delhi with a budget of Rs. 45,000:

### Day 1: Arrival in Dubai

- Morning: Depart from Delhi to Dubai. Choose a direct flight for convenience.
- Afternoon: Arrive at Dubai International Airport. Clear immigration and collect your luggage. Proceed to your hotel via a prepaid taxi or a ride-hailing service.
- Evening: Check-in at a mid-range hotel in areas like JBR Walk, Downtown Dubai, or Bur Dubai.
- Night: Relax at your hotel or explore the nearby local markets and restaurants.

### Day 2: Sightseeing

- Morning: Visit the Burj Khalifa (book tickets online in advance to avoid queues) and Dubai Mall.
- Afternoon: Explore the Dubai Fountain show and take a stroll around the Dubai Mall's many attractions, including the indoor ice rink and the aquarium.
- Evening: Enjoy dinner at one of the rooftop restaurants in the Burj Khalifa area for a stunning view of the city skyline.

Type something...



# RESULT

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Agent preview

Day 3: More Sightseeing and Shopping

- Morning: Visit the historic Al Fahidi district and the Dubai Museum.
- Afternoon: Head to the spice, gold, and textile souks for shopping. Don't miss the iconic Dubai Creek.
- Evening: Take a traditional abra ride across Dubai Creek to Deira for dinner at one of the old-world restaurants.
- Night: Explore the nightlife in the JBR Walk area or Downtown Dubai.

Day 4: Adventure and Leisure

- Morning: Visit the Global Village (if in season) or the Dubai Miracle Garden (if still open).
- Afternoon: Head to the desert for a safari experience, including dune bashing, camel riding, and a traditional Arabic dinner with entertainment.
- Evening: Return to your hotel and relax.

Day 5: Departure

- Morning: Visit any remaining attractions or revisit your favorites.
- Afternoon: Depending on your flight, check-in for your return flight to Delhi.
- Evening: Proceed to the airport for your departure.

Budget Breakdown (Approximate):

Type something...

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## Agent preview



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How to Interact with the Agent

### Knowledge



### Tools



Add a tool

Create custom tool

Added tools (4)

### Budget Breakdown (Approximate):

- Flights (round trip): Rs. 8,000 - Rs. 12,000 (depending on how early you book)
- Accommodation (5 nights in mid-range hotel): Rs. 10,000 - Rs. 15,000
- Food (varied dining experiences): Rs. 10,000 - Rs. 12,000
- Local transport (taxis, metro): Rs. 5,000 - Rs. 7,000
- Sightseeing and activities (entrance fees, desert safari): Rs. 5,000 - Rs. 7,000
- Shopping and miscellaneous: Rs. 5,000

### Total: Rs. 43,000 - Rs. 53,000

This budget allows for comfortable accommodation, diverse dining experiences, and engaging activities without extravagant spending. You can adjust the plan based on your preferences.

For real-time flight prices, hotel availability, and booking, I would need to integrate with travel booking platforms. Unfortunately, I currently don't have that capability. I recommend using travel booking websites or apps for the actual transactions.

Please let me know if you need more information or wish to modify this plan!

► How did I get this answer?



Type something...



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# CONCLUSION

- The proposed AI Travel Planner Agent transforms complex trip planning into a smooth, enjoyable, dynamic experience through automation, personalization, and IBM's reliable cloud and AI technologies. It reduces manual effort, adapts to real-world changes, and ensures travelers have an optimized, up-to-date plan.

# FUTURE SCOPE

- Integration with voice assistants and messaging platforms
- Multi-language and cultural customization
- Dynamic pricing and budget optimization features
- Expansion to group travel and corporate use-cases
- Leveraging advanced AI (e.g., edge AI, generative AI for content/pictures)

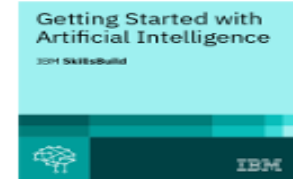
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# REFERENCES

- IBM Cloud, IBM Granite and Watsonx official documentation
- Research articles on travel recommendation systems
- Best practices in AI-powered itinerary planning

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In recognition of the commitment to achieve  
professional excellence



## MOHIT KUMAR

Has successfully satisfied the requirements for:

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### Getting Started with Artificial Intelligence

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