
CAPSTONE PROJECT

TRAVEL AGENT

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PROBLEM STATEMENT

Travelers often struggle with planning trips due to scattered information, budget limits, and time constraints. Manually searching for destinations, transport, accommodations, and weather updates can be confusing and inefficient.

Proposed Solution:

An AI-powered Travel Planner Agent using Natural Language Processing (NLP) and Retrieval-Augmented Generation (RAG) to understand user preferences, retrieve real-time travel data, and generate personalized, day-wise itineraries. It simplifies decision-making by suggesting routes, stays, and activities, ensuring a smooth and efficient travel experience.

TECHNOLOGY USED

IBM cloud lite services

Natural Language Processing (NLP)

Retrieval Augmented Generation (RAG)

IBM Granite model

IBM CLOUD SERVICES USED

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

END USERS

- **Solo Travelers** – Planning personalized, budget-friendly trips with minimal effort.
- **Families** – Organizing safe, kid-friendly itineraries with accommodation and activity suggestions.
- **Students** – Looking for affordable weekend or holiday travel plans.
- **Corporate Employees** – Planning quick, efficient business or leisure trips.
- **Travel Bloggers** – Exploring curated destinations and unique local experiences.

RESULTS :-- MAKING TRAVEL AGENT

The screenshot displays the IBM Watsonx web interface for creating and managing AI agents. The browser's address bar shows the URL: `dataplatfrom.cloud.ibm.com/wx/agents/48ad4761-ced1-46f3-a2cd-ffea45d3638d?project_id=022e1229-5559-4e99-8cee-8efc43dfbcf0&context=wx&open...`. The interface is divided into several sections:

- Saved agents:** A list of agents created by 'aviral's travel agent'. The selected agent is 'your travel agent' with the description 'want a travel plan ? ask me to prepare it for you !'.
- Build:** The configuration section for the selected agent. It includes:
 - Setup:** A dropdown menu for the AI model, currently set to 'granite-3-3-8b-instruct'.
 - Configuration:** Two dropdown menus for 'Framework' (set to 'LangGraph') and 'Architecture' (set to 'ReAct').
 - Instructions:** A text box containing the instruction: 'I can help you discover destinations based on your interests, seasons, budgets and much more.' A link for 'Advanced configuration' is also present.
 - Knowledge:** A section for adding knowledge to the agent.
 - Tools:** A section for adding tools. It includes buttons for 'Add a tool' and 'Create custom tool'. Below, a tool named 'Google search' is listed with the description 'Retrieve information from the internet with the Google search engine.'
- Agent preview:** A chat interface showing a conversation with the agent. The message says: 'Welcome to your travel agent' and 'want a travel plan ? ask me to prepare it for you !'. A magnifying glass icon is visible over the chat area.

RESULTS:- AGENT PREVIEW

The screenshot displays the IBM Watsonx web interface for an agent named "your travel agent". The browser address bar shows the URL: `dataplatfrom.cloud.ibm.com/wx/agents/48ad4761-ced1-46f3-a2cd-ffea45d3638d?project_id=022e1229-5559-4e99-8cee-8efc43dfbcf0&context=wx...`. The interface includes a top navigation bar with "IBM watsonx", an "Upgrade" button, and user account information for "aviral gupta's Account" in "Dallas". Below the navigation bar, the breadcrumb "Projects / aviral's travel agent / your travel agent" is visible, along with buttons for "Share feedback", "Autosaved 8:58 PM", "New agent +", and "Deploy".

The main content area is divided into three tabs: "Saved agents", "Build", and "Agent preview". The "Agent preview" tab is active, showing a conversation log. On the left, under "Saved agents", the agent "your travel agent" is listed with the description "want a travel plan ? ask me to prepare it for you !".

The conversation log in the "Agent preview" tab shows the following exchange:

- You:** 08:58 PM
give me travel plan for chennai
- your travel agent:** 08:58 PM
Based on the search results, here's a possible travel plan for Chennai:

Day 1: Arrival in Chennai and check-in to a hotel. Visit the nearby temples and explore the local market.

Day 2: Travel to Tiruvannamalai via Kanchipuram and visit important temples in Kanchipuram.

Day 3: Explore Chennai's historic sights, modern architecture, seafood, and street food. Visit the beaches and enjoy the city's excellent transport system.

Day 4: Plan a day trip to nearby destinations or explore Chennai's cultural attractions.

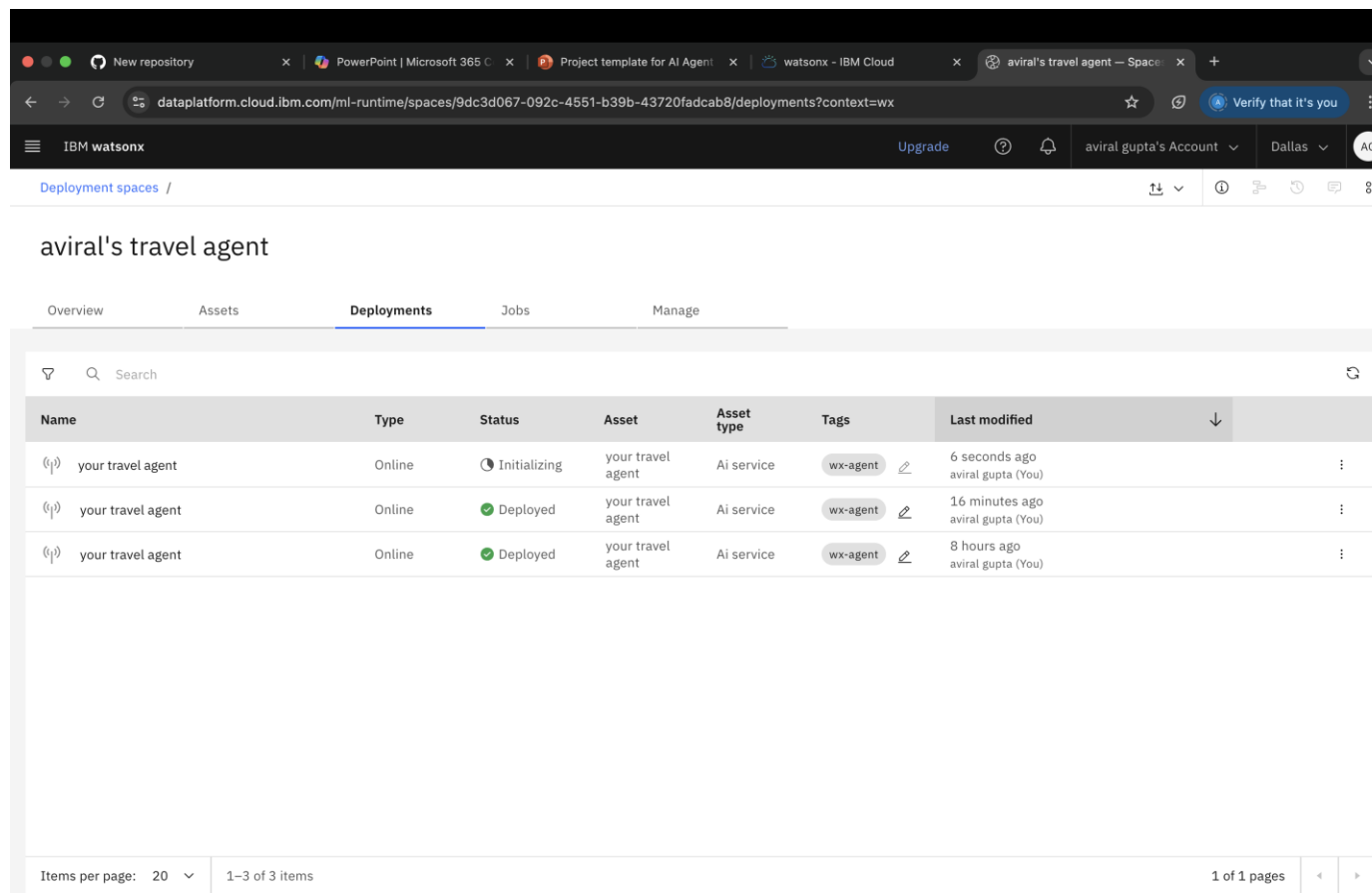
It's recommended to book a tour package or consult a travel agency like GT Holidays or Wanderlust Travel Planner for a customized itinerary. Additionally, consider checking the visa appointment wait times if you're an international traveler.

This travel plan provides a mix of culture, history, and entertainment, and can be adjusted based on individual preferences and interests.

► How did I get this answer?

At the bottom of the interface, there is a text input field with the placeholder "Type something..." and a "Send" button.

RESULTS:- AGENT DEPLOYED



The screenshot shows the IBM watsonx interface for a deployment space named 'aviral's travel agent'. The 'Deployments' tab is active, displaying a table with three rows of deployment information. The first row shows an 'Initializing' status, while the other two show 'Deployed' status. The table includes columns for Name, Type, Status, Asset, Asset type, Tags, and Last modified. The 'Last modified' column shows timestamps relative to the user's session (e.g., '6 seconds ago', '16 minutes ago', '8 hours ago').

aviral's travel agent						
Overview Assets Deployments Jobs Manage						
▼ 🔍 Search ↻						
Name	Type	Status	Asset	Asset type	Tags	Last modified
🔗 your travel agent	Online	🔄 Initializing	your travel agent	Ai service	wx-agent	6 seconds ago aviral gupta (You)
🔗 your travel agent	Online	✅ Deployed	your travel agent	Ai service	wx-agent	16 minutes ago aviral gupta (You)
🔗 your travel agent	Online	✅ Deployed	your travel agent	Ai service	wx-agent	8 hours ago aviral gupta (You)
Items per page: 20 1-3 of 3 items 1 of 1 pages						

CONCLUSION

- The AI Travel Planner Agent assists users by generating personalized itineraries, suggesting destinations, and managing real-time travel data.
- It automates time-consuming tasks like planning routes, finding accommodations, and checking weather updates, improving the overall travel experience. By enhancing convenience, personalization, and efficiency, the agent transforms traditional trip planning into a seamless and intelligent process—empowering travelers with smart, data-driven travel solutions.

FUTURE SCOPE

- **Voice-Enabled Assistance** – Integrate with voice assistants like Alexa or Siri for hands-free planning.
- **Multilingual Support** – Enable interaction in regional and international languages for global reach.
- **Real-Time Booking Integration** – Connect with airlines, hotels, and transport systems for instant bookings.
- **Augmented Reality (AR)** – Offer virtual previews of destinations and accommodations.
- **Group Travel Coordination** – Plan trips collaboratively for families, friends, or corporate teams.
- **Sustainability Insights** – Recommend eco-friendly travel options and carbon footprint tracking.
- **AI-Based Budget Optimization** – Dynamically adjust plans to fit changing budgets and preferences.

IBM CERTIFICATIONS

- Screenshot/ credly c

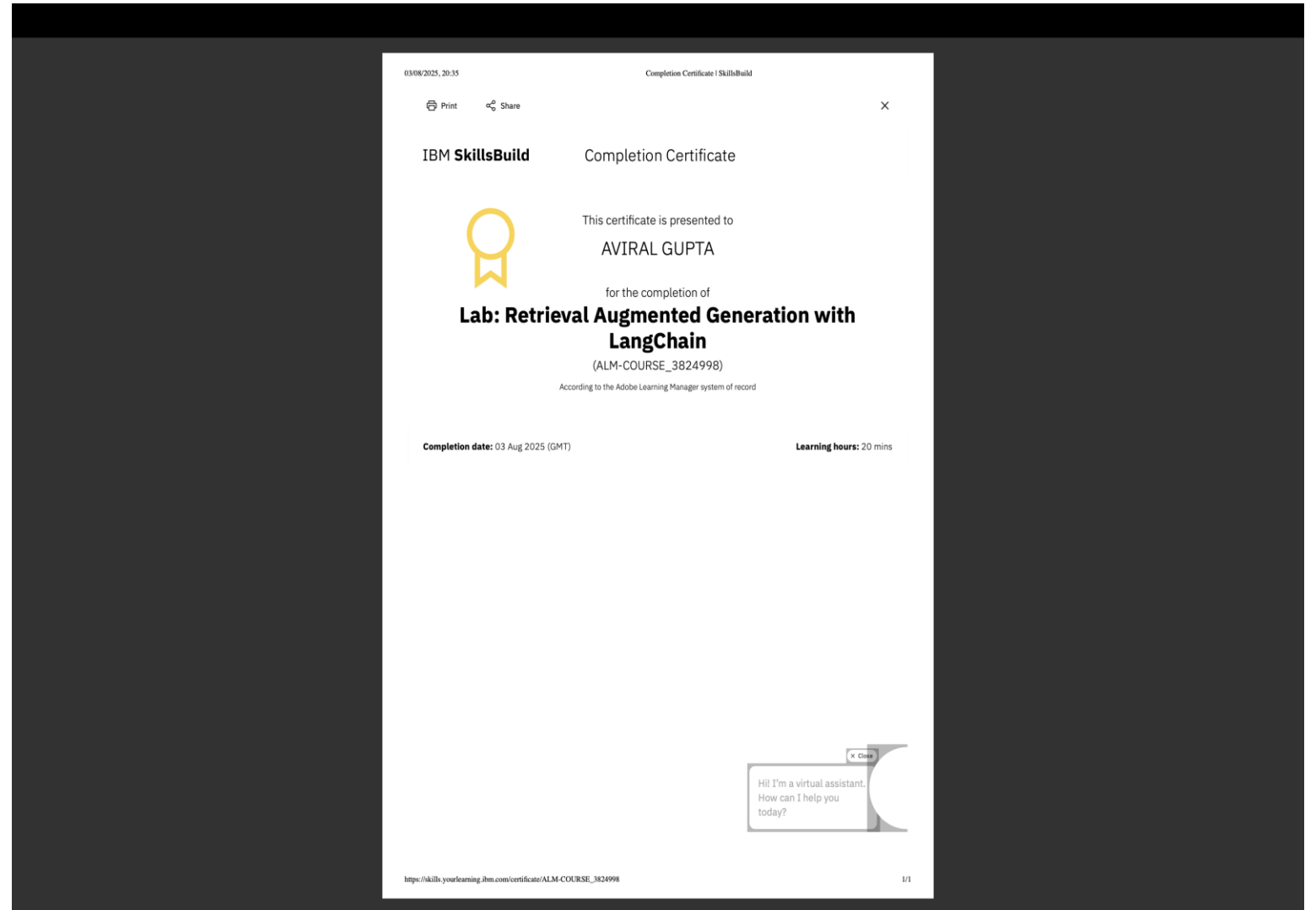


IBM CERTIFICATIONS

- Screenshot/ cre



Attach your RAG LAB certificate here



GITHUB LINK

- Make sure that there should be readme file



THANK YOU