
CAPSTONE PROJECT

AGENTIC AI HEALTH SYMPTOM CHECKER

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OUTLINE

- Problem Statement
- Proposed System/Solution
- System Development Approach
- Algorithm & Deployment
- Result (Output Image)
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PROBLEM STATEMENT

An Agentic AI Health Symptom Checker helps users understand their health conditions by analyzing symptoms and providing probable causes, preventive advice, and care recommendations. It retrieves verified medical data, symptom databases, and guidelines from trusted sources like WHO, government health portals, and medical journals.

PROPOSED SOLUTION

An Agentic AI Health Symptom Checker is developed to guide users in understanding their health symptoms by:

- Analyzing natural language symptom Providing:
- Probable health conditions
- Urgency level (low, medium, high)
- Preventive advice and home remedies
- Guidance on when to consult a doctor
- Powered by IBM Watsonx.ai, the agent is trained to:
- Use verified medical databases (WHO, CDC, government health portals)
- Support multilingual interaction (e.g., English, Hindi, Kannada)
- Avoid self-diagnosis by delivering educational and referral-based suggestions

This AI-driven assistant aims to promote early detection, reduce misinformation, and empower users to take informed, safe health actions.

SYSTEM APPROACH

- IBM Watsonx.ai – Foundation model deployment
- IBM Cloud Object Storage – For asset management
- Streamlit (Optional) – For user-friendly web UI
- Language Detection Library
- Translation APIs – For multilingual support (e.g., Google Translate API)
- Verified Medical Datasets – WHO, CDC, Government health portals

Libraries Used: `ibm-watsonx-ai` – Accessing IBM foundation models `streamlit` – Lightweight

UI for testing (optional)

`langdetect` – Detects language of user input

`Requests-json` API calls and data handling

`dotenv` – For secure environment variable storage (e.g., API keys)

ALGORITHM & DEPLOYMENT

Algorithm Selection: IBM Watsonx Foundation Model: Granite-13B-Chat-v2

- Large Language Model (LLM) used for symptom understanding
- Works through prompt engineering (no retraining needed)
- Supports multilingual, safe, and informative responses

Input & Response Process

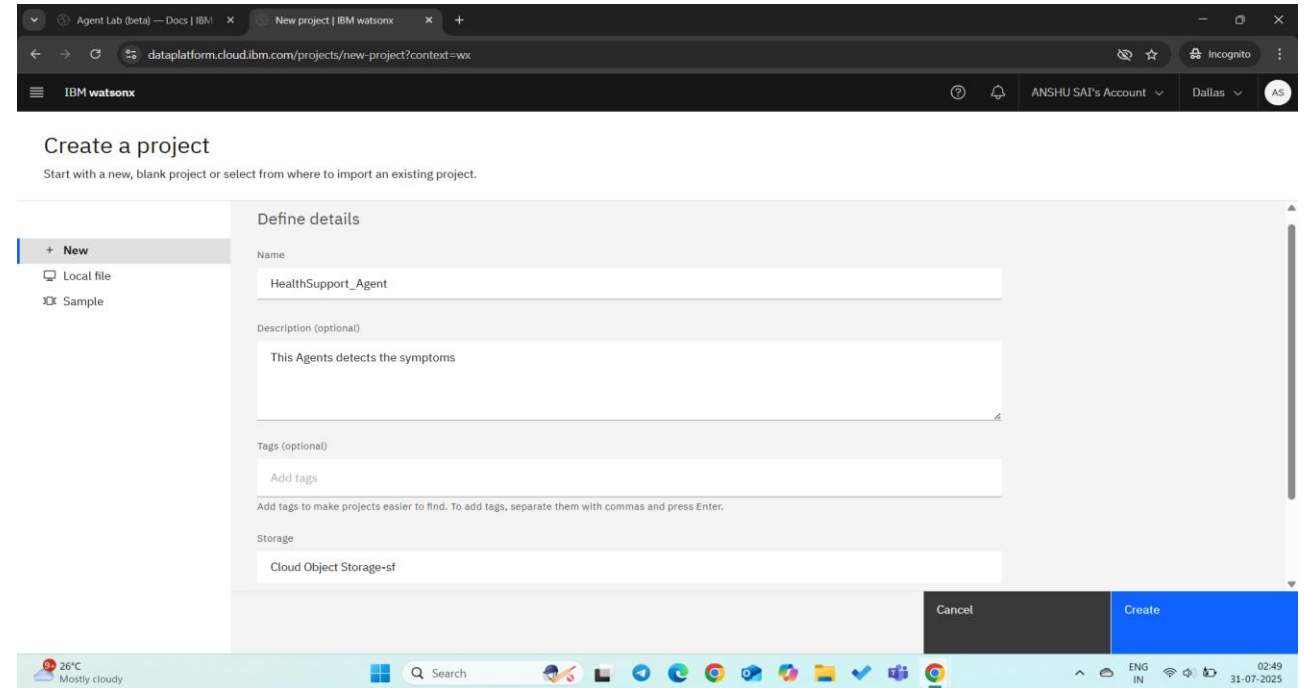
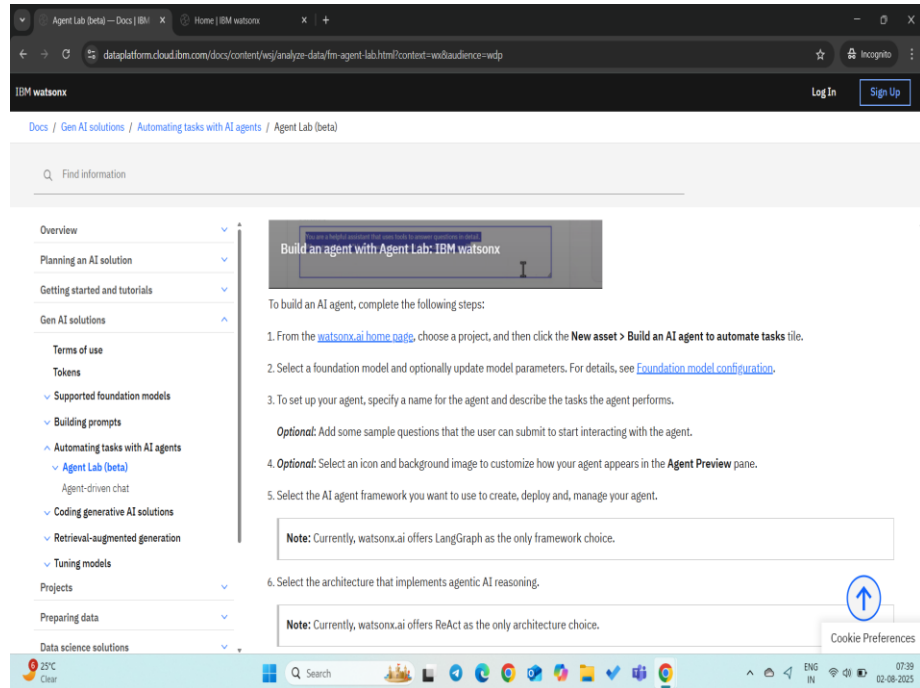
- Input: User's symptom in natural language (e.g., "I have a sore throat and fever")
- Language detection performed if not in English
- AI processes the prompt and responds with:– Probable health condition(s)– Urgency level (low/medium/high)– Preventive care & home tips– Referral advice (if needed)– Safety disclaimer

ALGORITHM & DEPLOYMENT

Deployment Workflow

1. User enters symptom (via UI or notebook)
2. System detects input language
3. Constructs prompt with safety instructions
4. Sends prompt to Watsonx.ai API
5. Receives structured response
6. Displays result in user's language
7. Can be extended to mobile or chatbot platforms

RESULT



- GO to watsonx ai home page create a new project

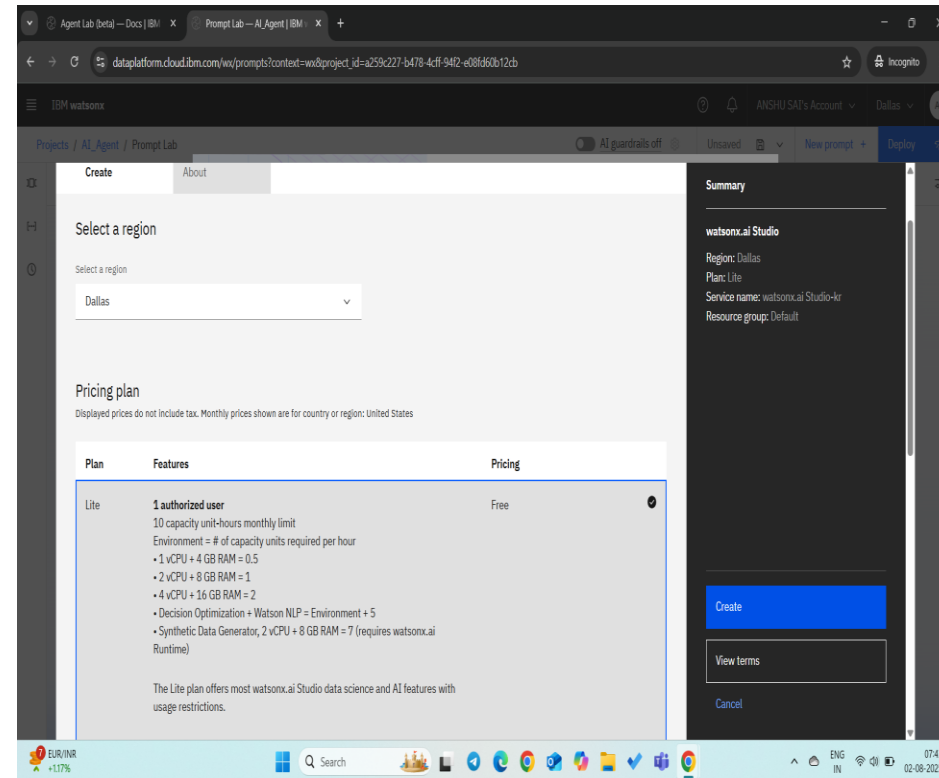
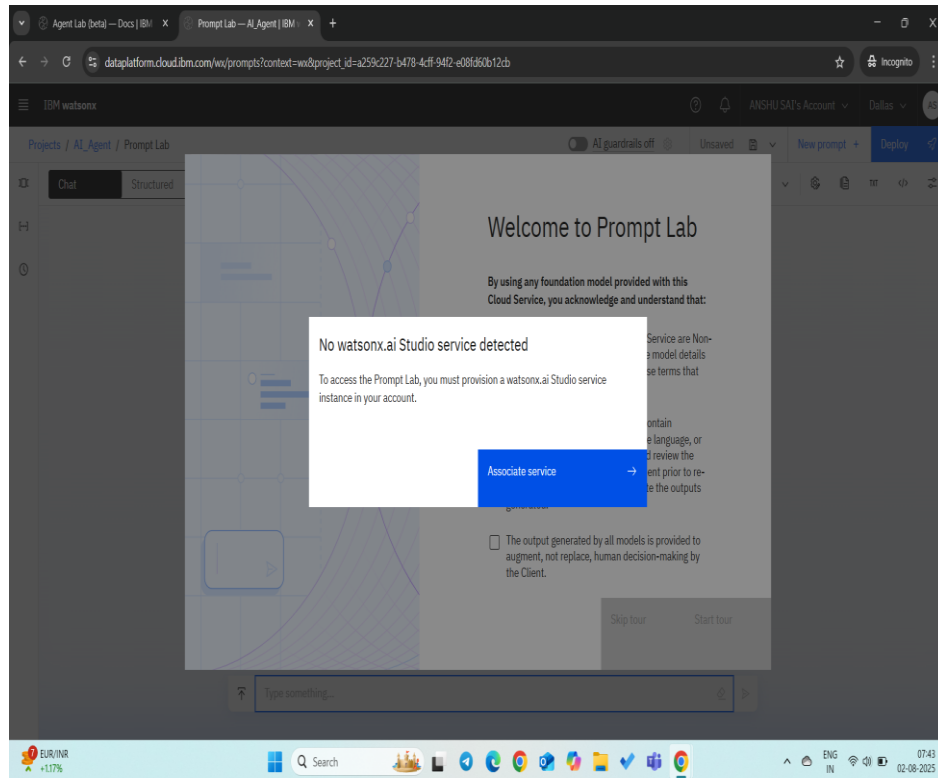
RESULT

The screenshot displays the IBM Watsonx Cloud Object Storage pricing page. The page is titled 'Cloud Object Storage' and includes a 'Create' button in the top right corner. The 'Pricing plan' section shows a table with three plans: 'One-Rate', 'Lite(deprecated)', and 'Standard'. The 'Lite(deprecated)' plan is highlighted with a blue border and is marked as 'Free'. The plan description states: 'Lite plan instance is free to use for Storage capacity up to 25 GB per month. Lite plan instance is used for trial, and can be easily upgraded to Standard plan for unlimited scalability and full functionality. Lite plan services are deleted after 30 days of inactivity.' The 'Create' button is visible in the right sidebar.

Plan	Features	Pricing
One-Rate	One-Rate Plan is a Pay-as-You-Go option with a single, flat monthly rate (\$/GB) that includes storage, API operations, retrieval, and outbound bandwidth—making it ideal for high-activity workloads with frequent access and data transfer, such as analytics, media, and web apps. The plan includes built-in allowances that scale with stored capacity and offers automatic volume discounts as usage grows	
Lite(deprecated)	Lite plan instance is free to use for Storage capacity up to 25 GB per month. Lite plan instance is used for trial, and can be easily upgraded to Standard plan for unlimited scalability and full functionality. None Lite plan services are deleted after 30 days of inactivity.	Free
Standard	Standard Plan is a flexible Pay-as-You-Go option with no minimum fee—ideal for workloads with large	

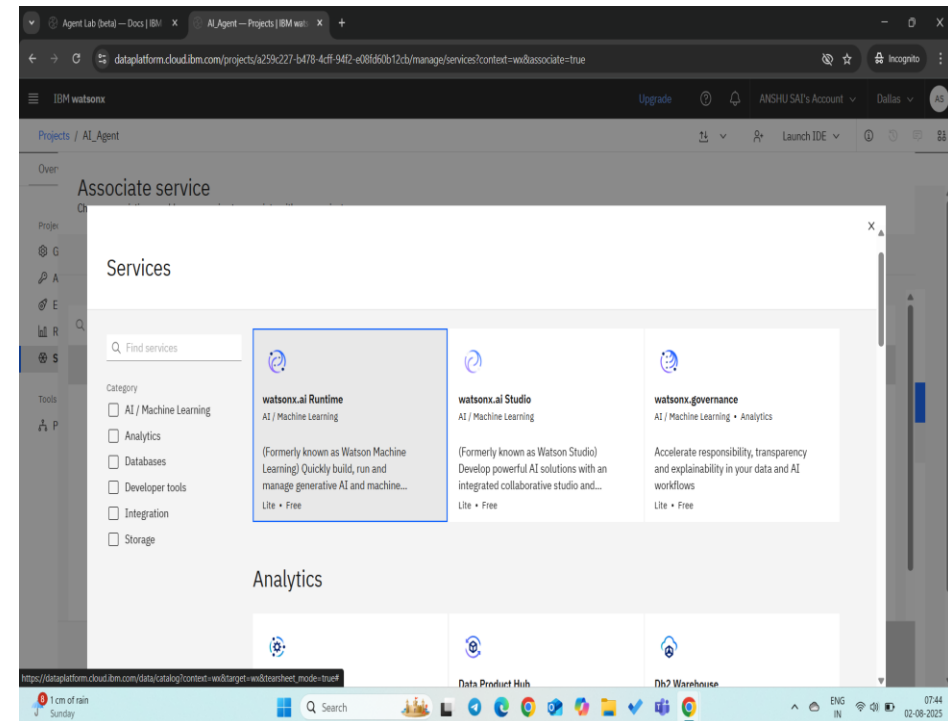
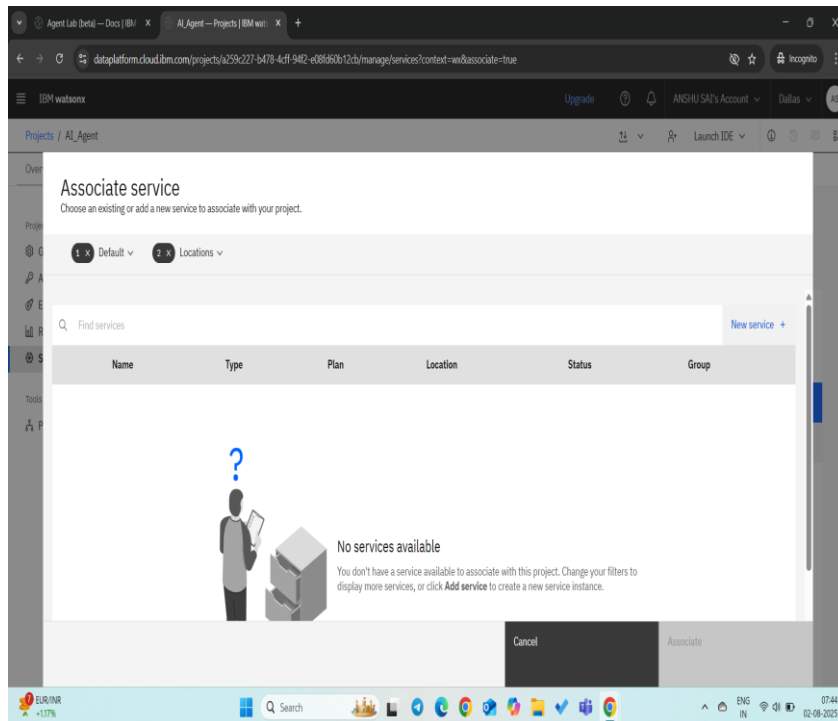
- Click on Add Cloud storage and select free plan and create it

RESULT



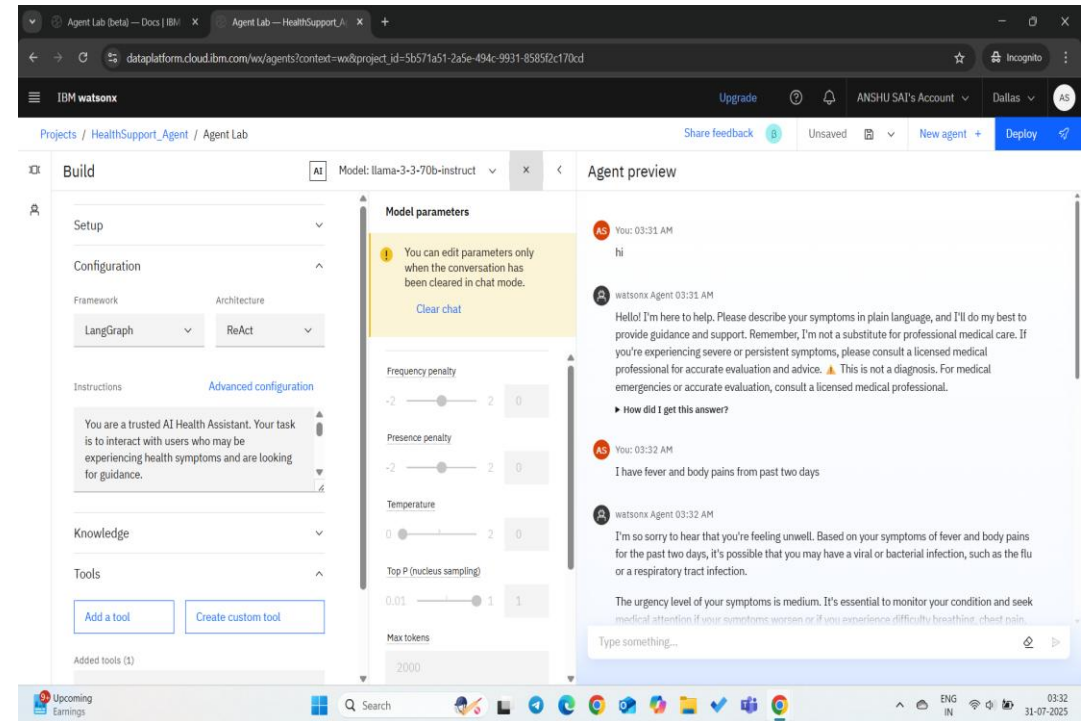
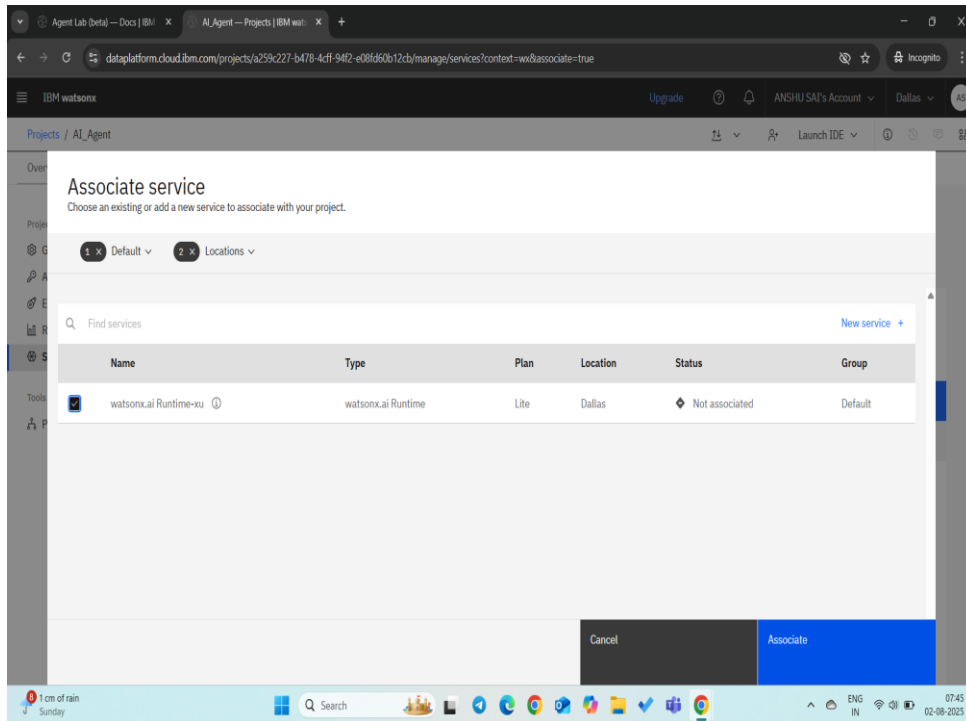
- Now you can click on Build an AI agent to automate tasks click on associate service click on create

RESULT



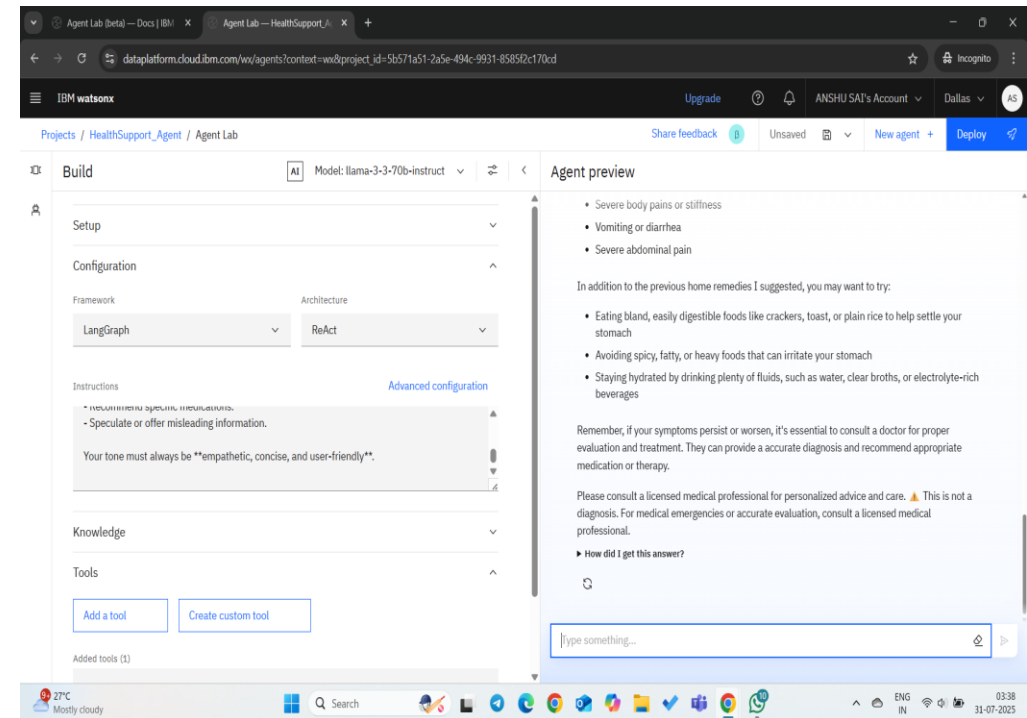
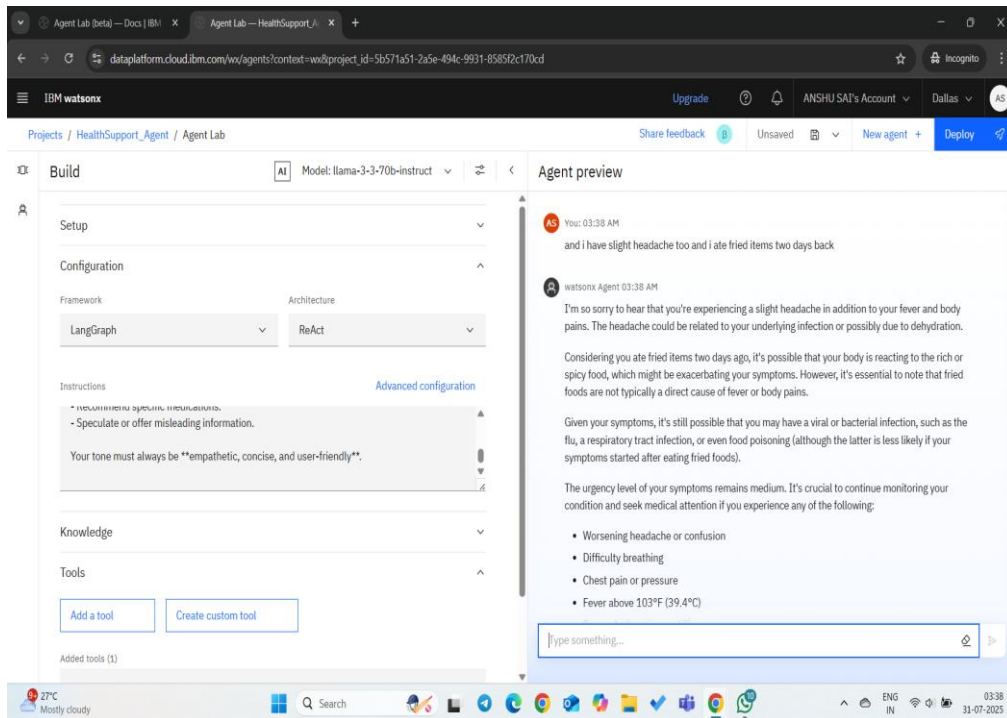
- In associate service click on new service select watsonx runtime and associate it.

RESULT



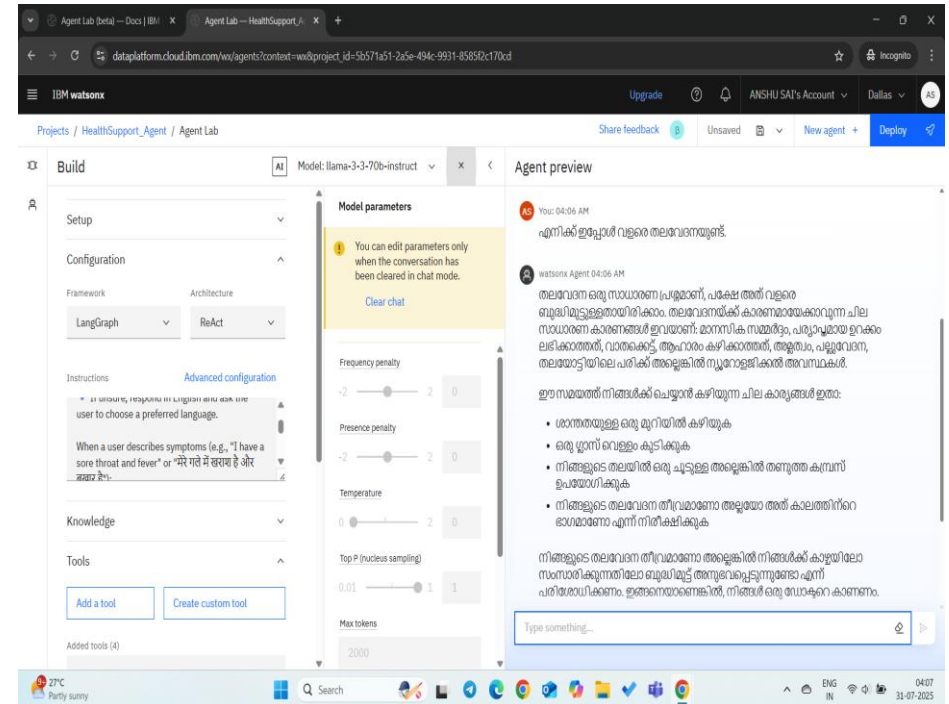
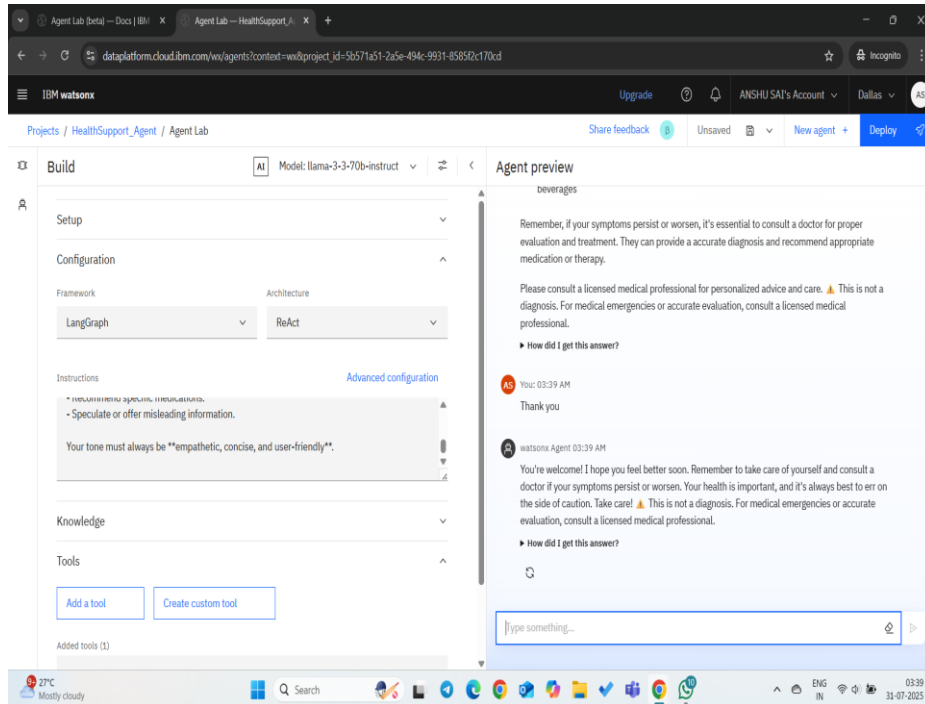
- Click on associate and click on ibm watsonx you will enter into agent lab now

RESULT



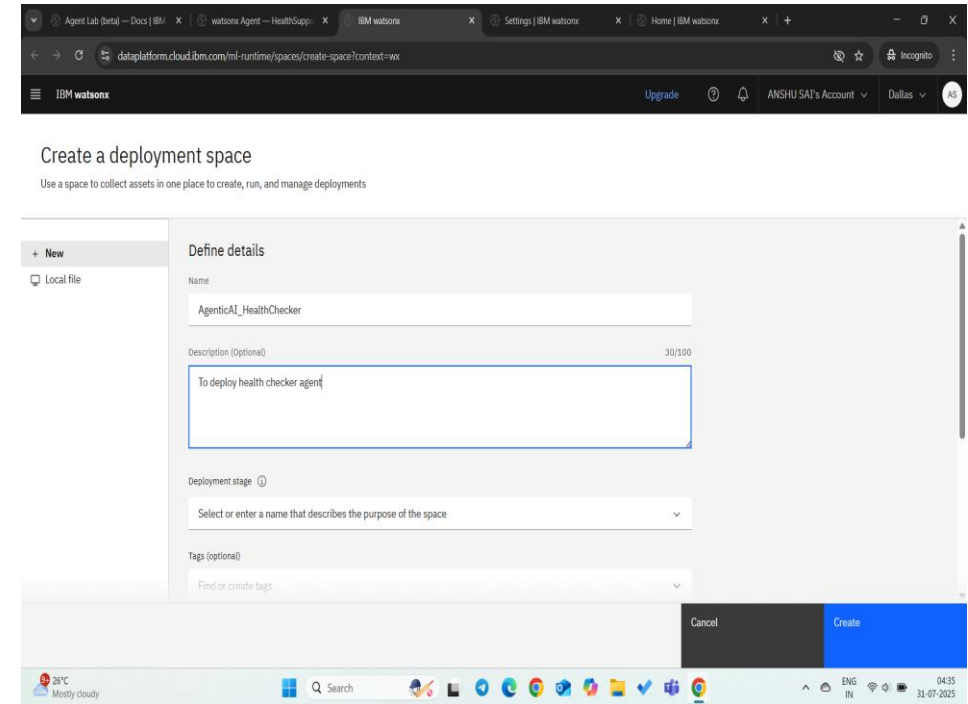
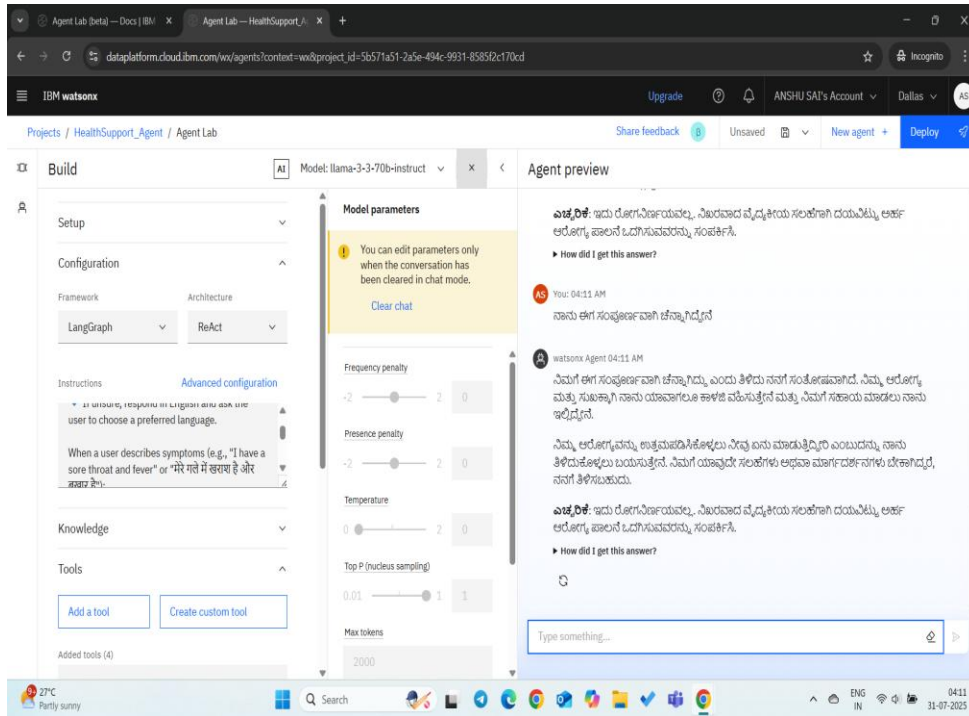
- Now you can give instructions to agent and can add KB and custom tools according requirement.

RESULT



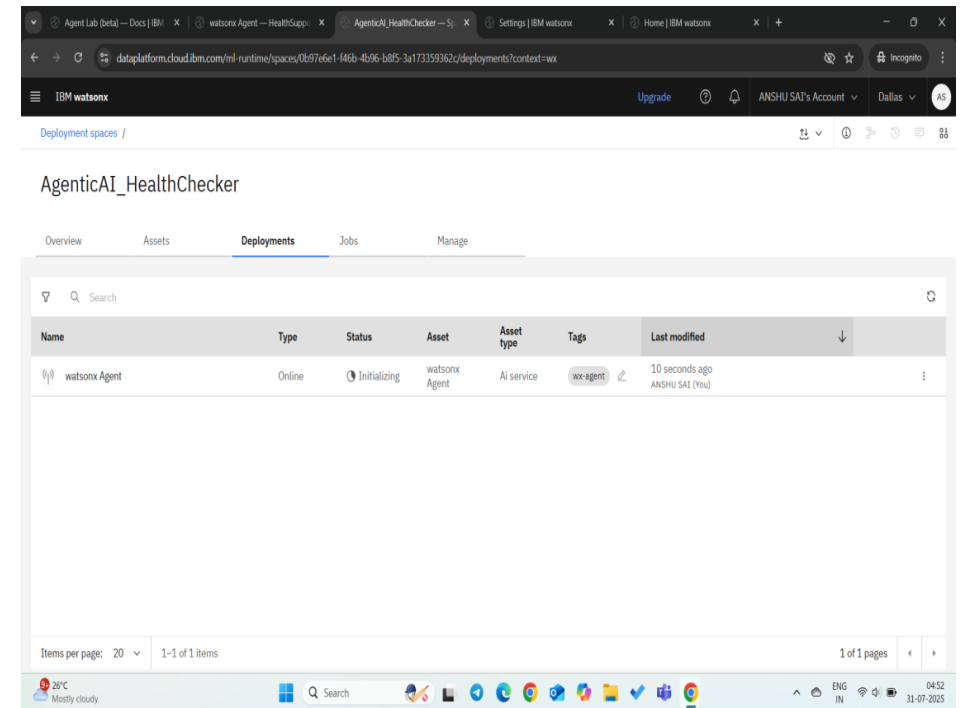
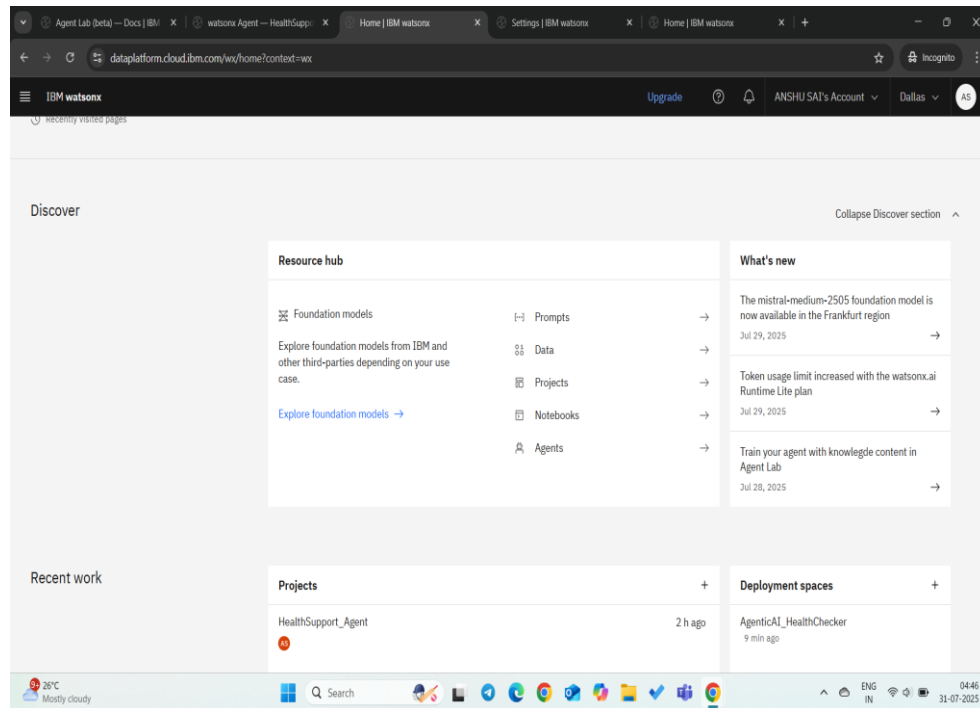
- After giving instructions you can preview it how agent is working

RESULT



- After previewing click on save and then Click on AI agents and save and deploy it by creating space for it

RESULT



- In projects we have created deployment space and click on watsonx agent to enter to lab

RESULT

The screenshot shows the IBM watsonx Agent Lab interface. The browser address bar displays the URL: `dataplatfom.cloud.ibm.com/ml-runtime/spaces/0b97e6e1-f46b-4b96-b8f5-3a173359362c/deployments?context=wx`. The page title is "AgenticAI_HealthChecker". The navigation tabs include Overview, Assets, Deployments (selected), Jobs, and Manage. A search bar is present above a table of deployments.

Name	Type	Status	Asset	Asset type	Tags	Last modified
watsonx Agent	Online	Initializing	watsonx Agent	AI service	wx-agent	10 seconds ago ANSHU SAI (You)

At the bottom, it indicates "Items per page: 20" and "1-1 of 1 items". The system tray shows a temperature of 26°C and the date 31-07-2025.

This screenshot is similar to the previous one, showing the same deployment table. However, a "Snipping Tool" window is overlaid on the right side of the screen. The tool indicates that the screenshot was copied to the clipboard and saved to the screenshots folder. The system tray shows a temperature of 28°C and the date 31-07-2025.

- You can create api key also Its in development stage and it has deployed successfully now

RESULT

The screenshot displays the IBM watsonx Agent Lab interface in a web browser. The browser's address bar shows the URL: `datapatform.cloud.ibm.com/ml-runtime/spaces/0b97e6e1-f46b-4b96-b8f5-3a173359362c/overview?context=wx`. The page title is "AgenticAI_HealthChecker".

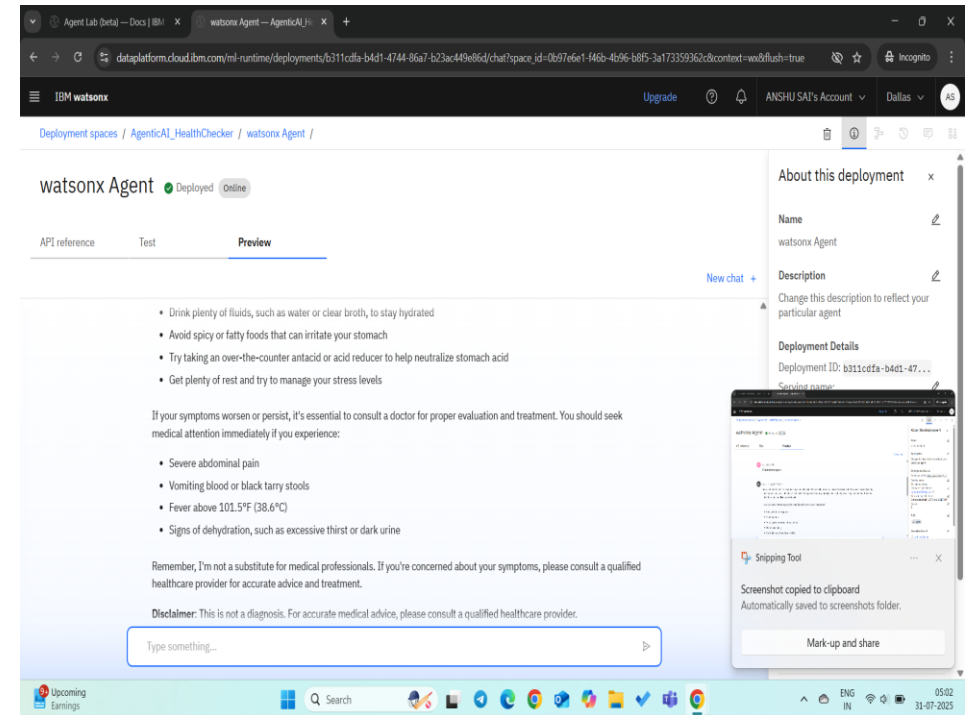
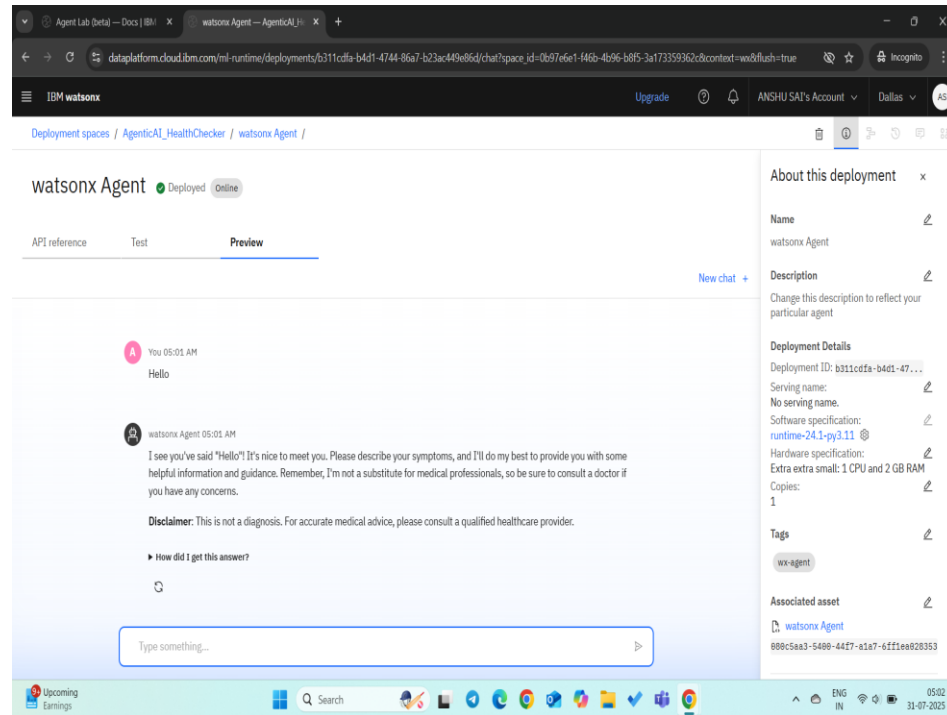
The interface features a navigation bar with tabs: "Overview" (selected), "Assets", "Deployments", "Jobs", and "Manage".

The main content area is divided into three sections:

- Jump back in:** Shows a recent deployment of "watsonx Agent" from "1 minute ago" with a link to "View all (1)".
- Deployments:** A summary table showing the status of deployments. It includes a "Deployed" count of 1 and a "Failed" count of 0. Below the table is a link to "View deployments".
- Job runs:** A summary table showing the status of job runs. It includes an "Active" count of 0 and a "Failed last 24 hours" count of 0. Below the table is a link to "View jobs".
- Space history:** A section with the heading "No notifications" and a subtext "You will see your most recent notifications here."

The bottom of the screenshot shows a Windows taskbar with the date and time "04:53 31-07-2025" and the system status "26°C Mostly cloudy".

RESULT



- Click on watsonx agent and preview it

CONCLUSION

- The AI-powered symptom checker successfully guides users using verified health data, avoids misdiagnosis, and works in multiple languages. The multilingual prompt design makes it adaptable and inclusive. Key challenges included balancing language-specific nuances and ensuring clarity without overwhelming users.

FUTURE SCOPE

- Future Enhancements:
- - Voice-based interaction and accessibility features
- - Regional language expansion
- - Integration with local health clinics and telemedicine APIs
- - Real-time health alerts and location-based risk detection
- - Use of RAG (Retrieval-Augmented Generation) for evidence-based outputs

REFERENCES

- • WHO Symptom Guidelines – www.who.int
- • CDC Symptom Checker – www.cdc.gov
- • IBM Watsonx.ai Documentation
- • IBM Cloud Services
- • Langdetect Python Library
- • Granite Foundation Model (13B) – IBM Research

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In recognition of the commitment to achieve
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ANSHU SAI

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



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IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

ANSHU SAI

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