CAPSTONE PROJECT

NUTRITION AGENT

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OUTLINE

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- System Development Approach
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PROBLEM STATEMENT

Example:In an era where health awareness is growing,individuals increasingly seek personalized nutrition guidance.However,most existing tools provide generic diet plans,lack real-time adaptability,and fail to consider a person's holistic lifestyle,cultural preferences,allergies,and evolving health conditions.Furthermore ,dieticians and nutritionists face limitations in scaling personalized consultations due to time and resource constraints.

PROPOSED SOLUTION

- The proposed system aims to address the challenges and limitations in scaling a personalized dietician consultation.This provide an interactive,intelligent, and adaptive virtual Nutrition assistant.The solution will consist of the following components:
- Data Collection:
  - Gather data about age, food preferences,medical conditions,fitness routines etc.
  - Utilize real-time data sources, such as weather conditions, Google search, DuckDuckGo search, Wikipedia search to enhance accuracy.
- Data Preprocessing:
  - Clean and preprocess the collected data to provide accurate nutrition plans.
  - Extract user preferences from the data to provide nutrition palns according to it. .
- Machine Learning Algorithm:
  - The model used here is llama-3-3-70b-instruct, to predict bike counts based on historical patterns.
  - Consider tools like weather , Google search,DuckDuckGo search,Wikipedia search to improve accuracy.
- Deployment:
  - Develop a user-friendly AI-powered nutrition assistant that generate dynamic meal palns,recommend smart food swaps and explain nutritional choices.
  - Deploy the solution on a scalable and reliable platform, considering factors like server infrastructure, response time, and user accessibility.
- Evaluation:
  - Assess the model's performance using appropriate metrics such as age,food preference, health condition and fitness routines etc.
  - Fine-tune the model based on feedback and continuous monitoring of accuracy.
  - Result:

SYSTEM APPROACH

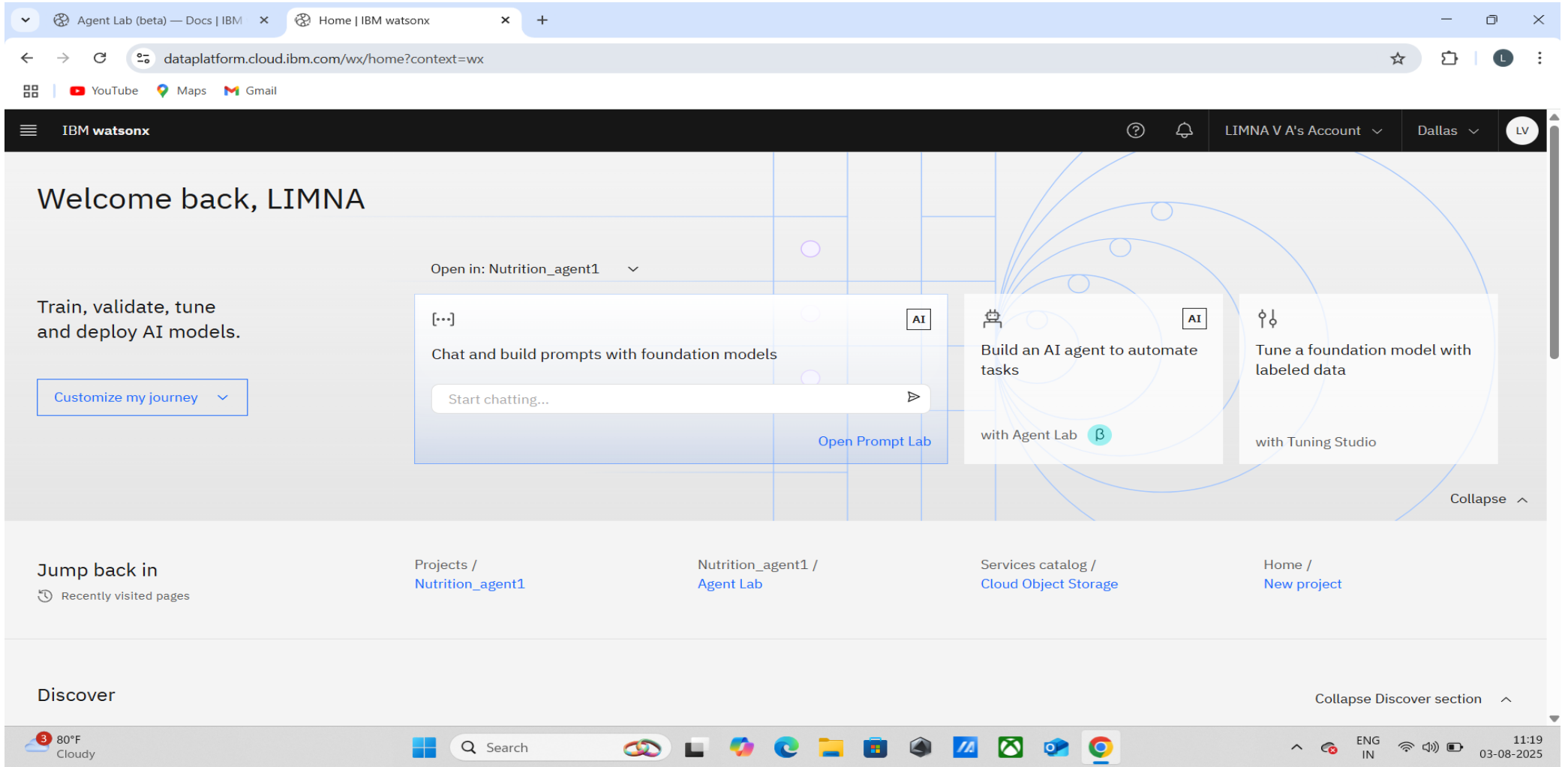
The "System Approach" section of “Nutrition assistant” involves designing and implementing a comprehensive and integrated system that leverages generative AI models,NLP,multimodal understanding,and largescale dietary databases to provide personalized nutrition guidance. Here's a suggested structure for this section:

- User input processing
- Personalized meal planning
- Contextual Explanation
- Integration with health data and food databases
- IBM cloud lite services/IBM Granite

ALGORITHM & DEPLOYMENT

- In the Algorithm section, describe the machine learning algorithm chosen for predicting Nutrition plans. Here's an example structure for this section:
- Algorithm Selection:
  - Provide a brief overview of the chosen algorithm and justify its selection based on the problem statement and data characteristics.
- Data Input:
  - Specify the input features used by the algorithm, such as age, health conditions, food preferences,fitness routines etc.
- Training Process:
  - Explain how the algorithm is trained using this user preferences data. Highlight any specific considerations or techniques.
- Prediction Process:
  - Detail how the trained algorithm makes predictions for nutrition plans. Discuss any real-time data inputs considered during the prediction phase.

RESULT



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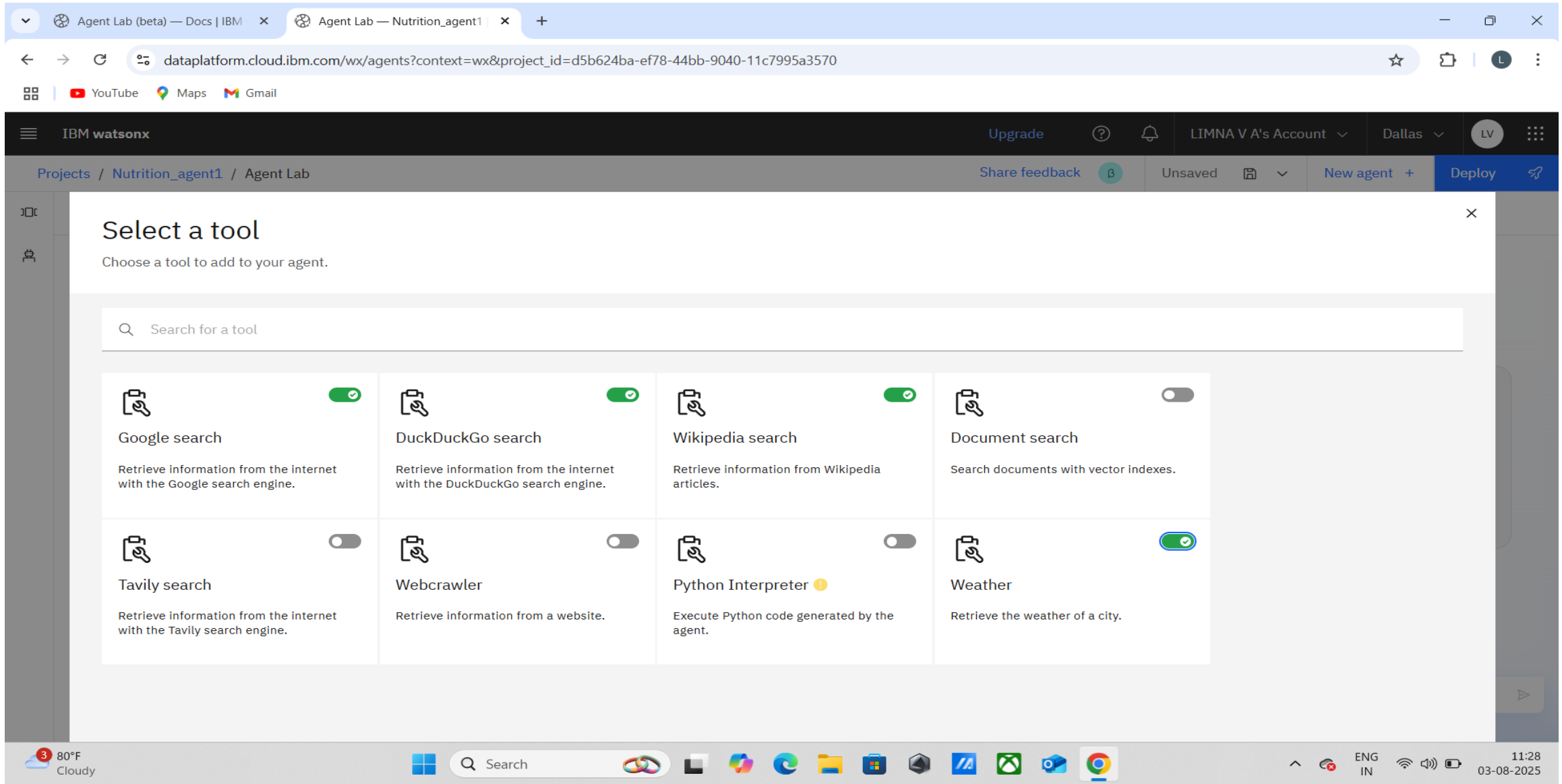

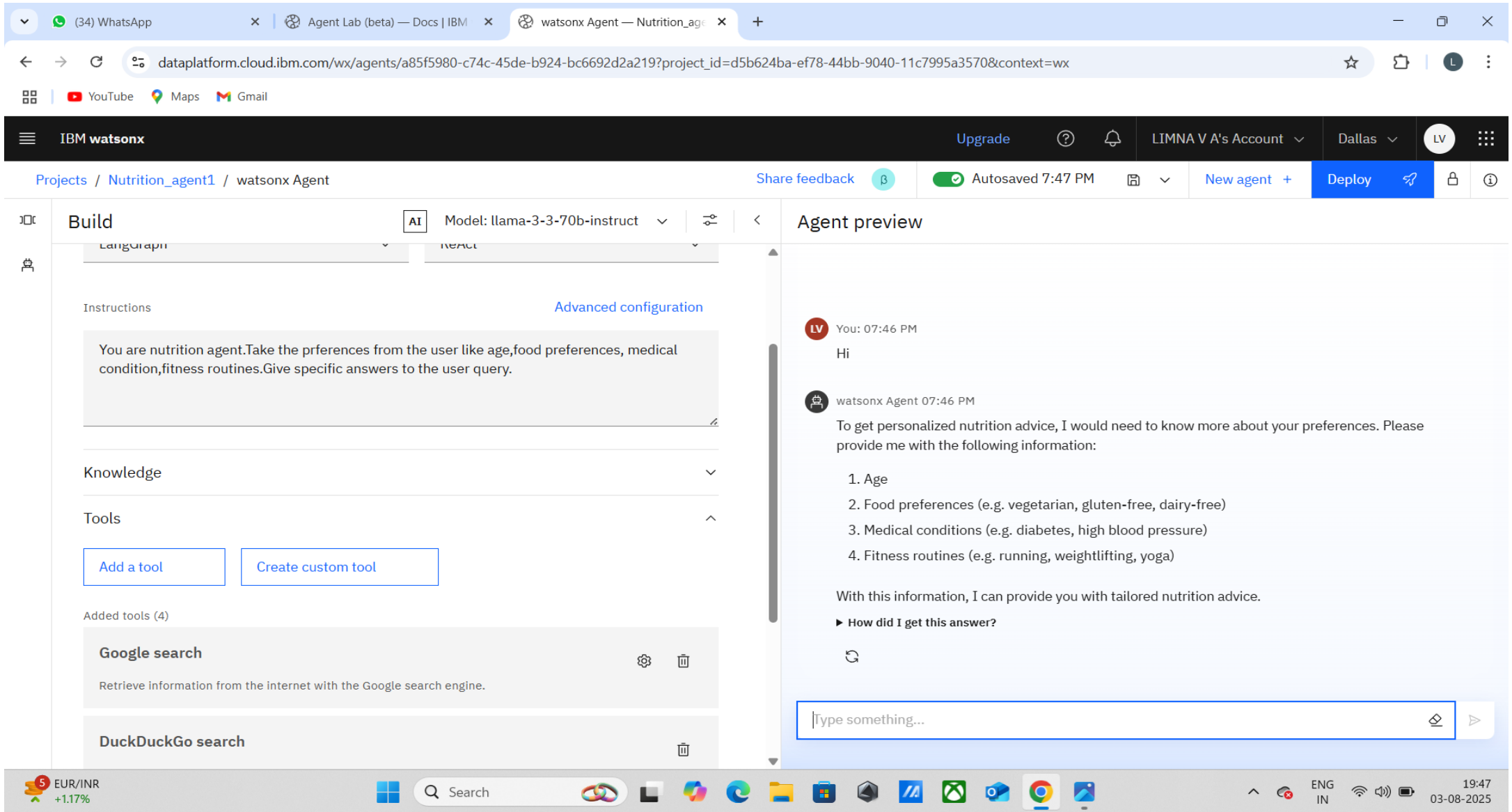

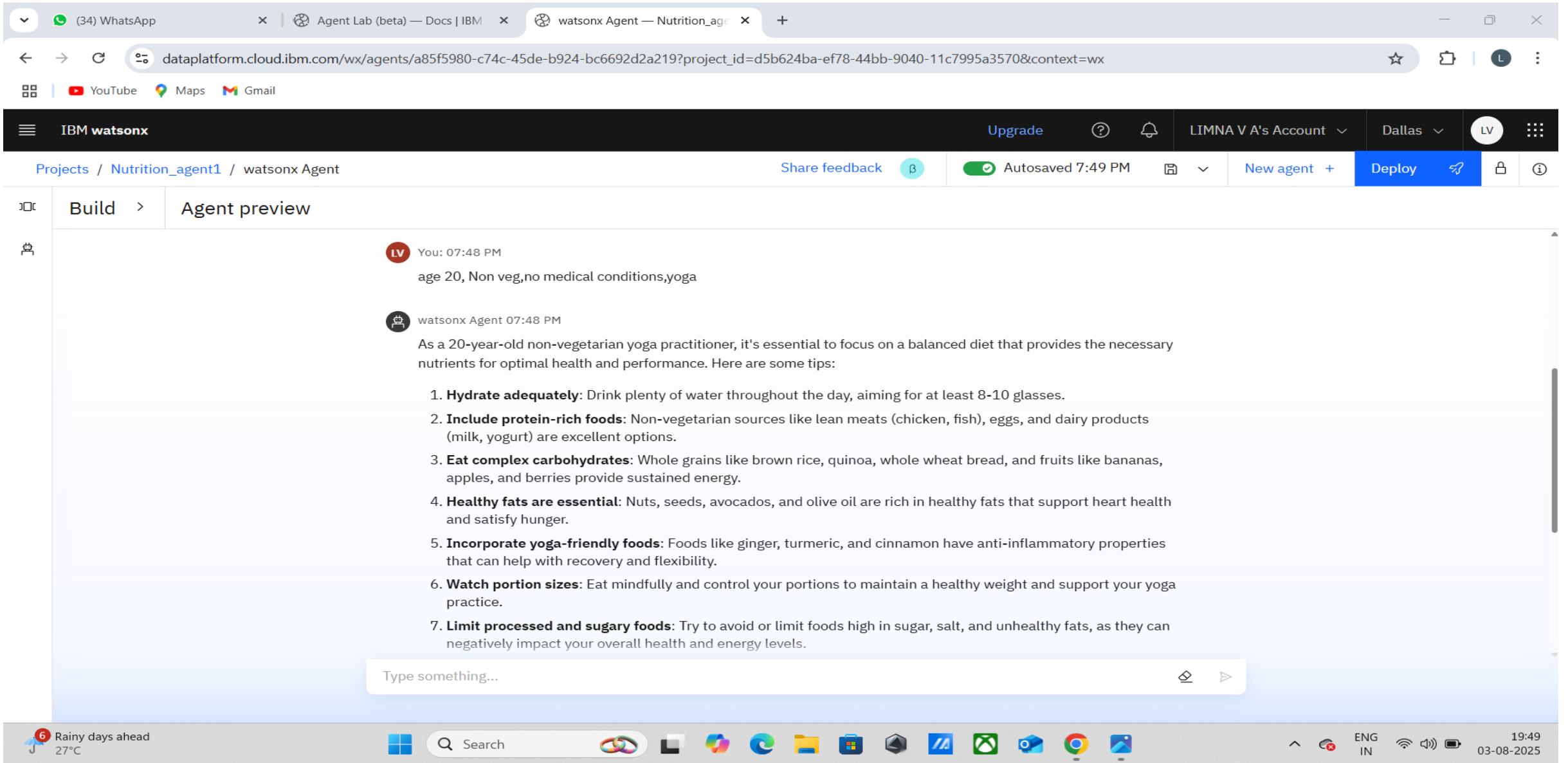

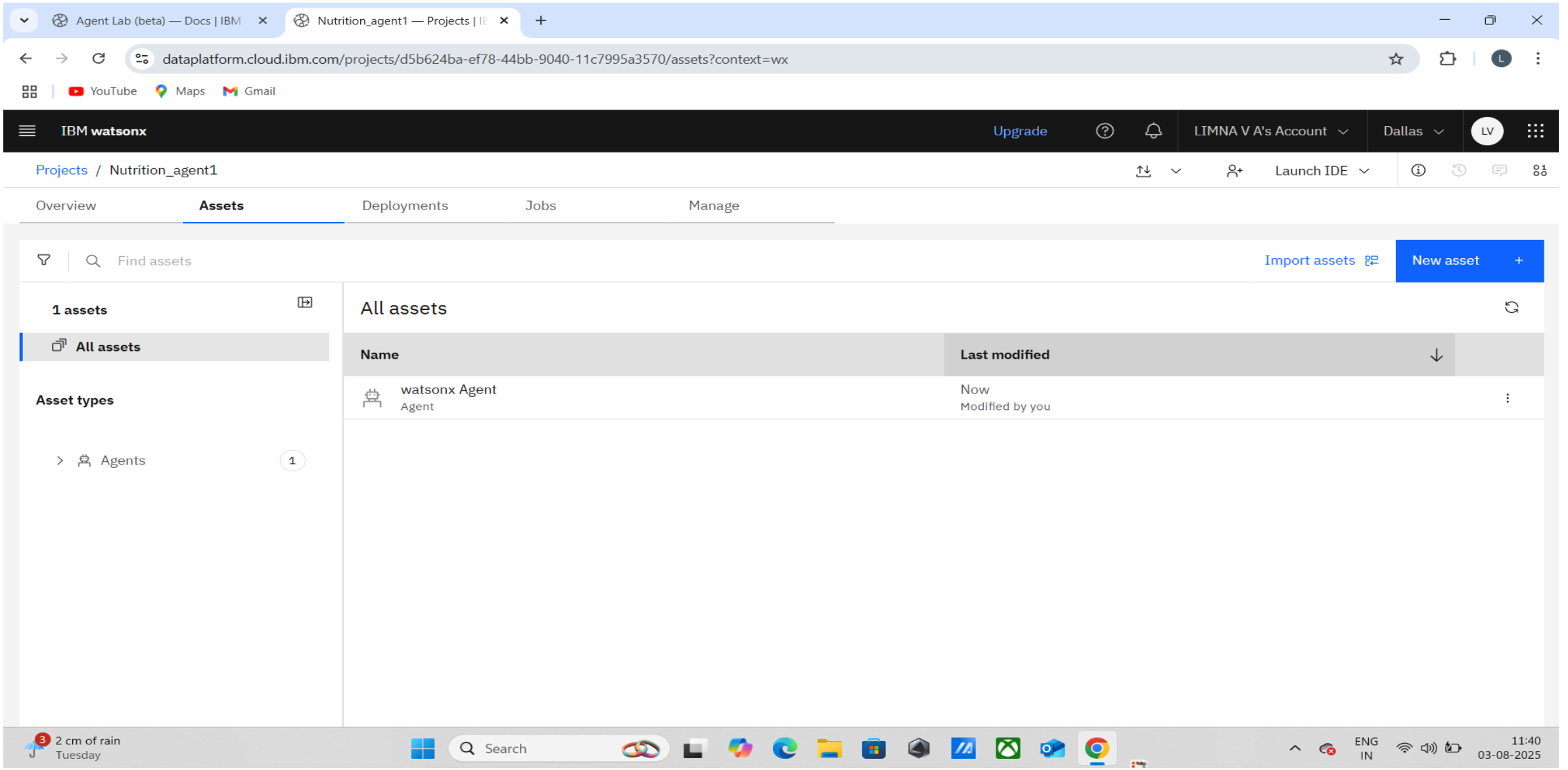

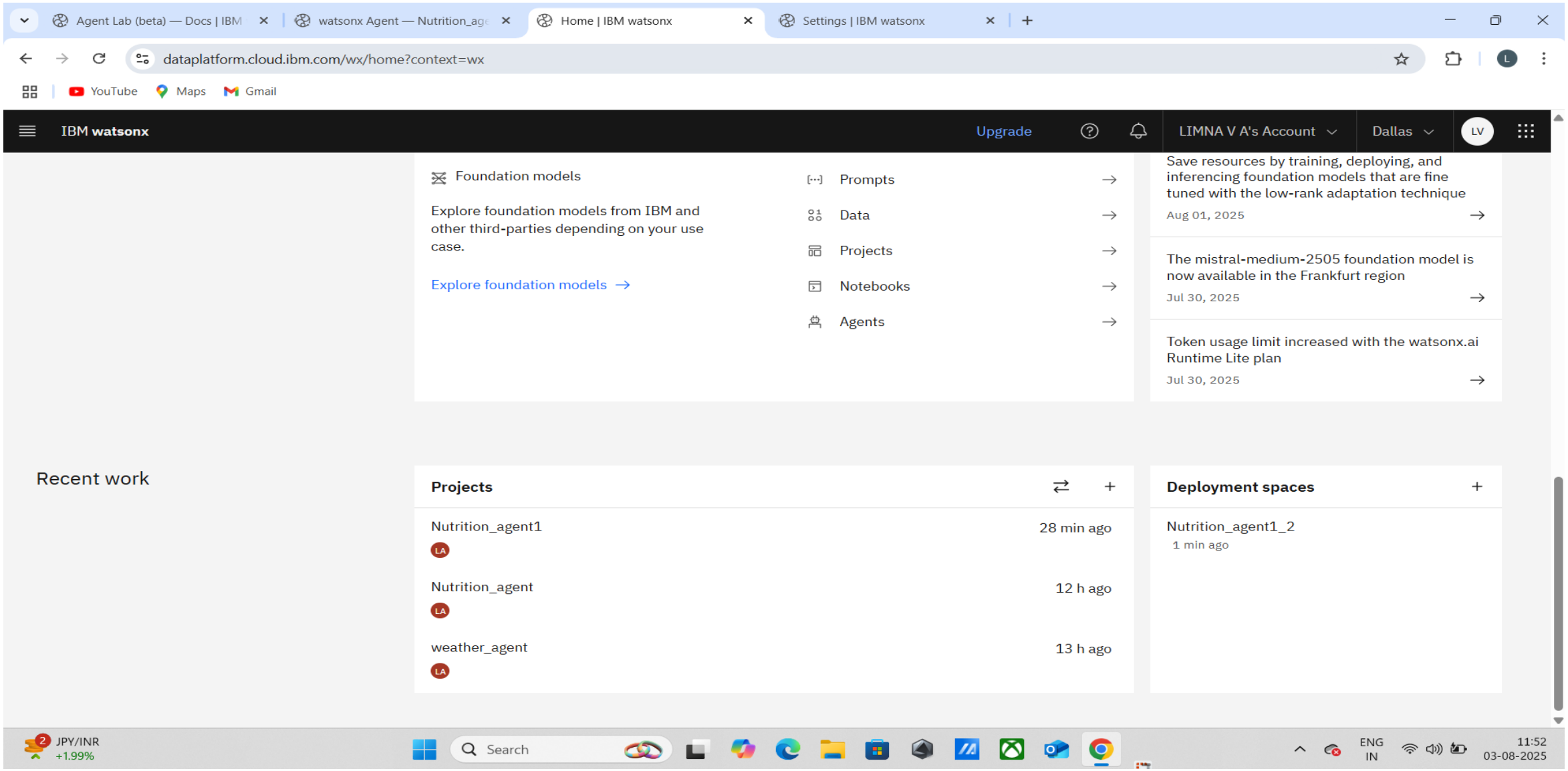

CONCLUSION

- The AI Nutrition Assistant project aims to revolutionize personalized nutrition guidance by leveraging state-of-the-art generative AI models,NLP,and multimodal understanding.By integrating health data,food databases,and LLM-powered reasoning,the solution will provide dynamic meal plans according to individual needs.This AI Nutrition agent provide nutrition plans according to the users input data such as age, health conditions, fitness routines, food preferences etc.By leveraging IBM cloud lite services and IBM Granite, the solution will be scalable and reliable,making personalized nutrition guidance accessible to a wider audience.

FUTURE SCOPE

- The future scope of "The Smartest AI Nutrition Assistant" project is vast and promising, with potential advancements in:- Integration with Wearable Devices, Advanced Personalization, Mental Health Support, Social Support Networks, Enhanced Data Privacy and Security,Expanded Food Databases,Seamless Integration with Healthcare Systems.

REFERENCES

- This project was done in IBM cloud with the help of knowledge I got from IBM SkillsBuild Internship on AI & Cloud Technologies.

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IBM **SkillsBuild** Completion Certificate

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According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT) **Learning hours:** 20 mins

THANK YOU

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