
IBM HACKATHON PROJECT

ECO FRIENDLY AI AGENT

Presented By:

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OUTLINE

- ? **Problem Statement**
- ? **Technology used**
- ? **Wow factor**
- ? **End users**
- ? **Result**
- ? **Conclusion**
- ? **Git-hub Link**
- ? **Future scope**
- ? **IBM Certifications**

PROBLEM STATEMENT

Individuals and communities striving to adopt a sustainable lifestyle often struggle to access reliable, personalized, and localized information on eco-friendly practices.

With the overwhelming volume of green living tips, product recommendations, and recycling rules scattered across sources, finding useful guidance becomes time-consuming and inefficient.

PROPOSED SOLUTION

❓ An AI-powered Eco Lifestyle Agent using:

❓ - Retrieval-Augmented Generation (RAG)

❓ - IBM Granite Foundation Model

❓ - IBM Cloud Lite Services

❓ It provides:

❓ - Personalized sustainability tips

❓ - Local recycling guidelines

❓ - Eco product recommendations

❓ - Info on relevant government schemes

❓ Users ask in natural language and receive instant, actionable answers.

TECHNOLOGY USED

- IBM Cloud Lite Services
- Watsonx.ai (Studio & Runtime)
- IBM Granite Foundation Models
- RAG Architecture

IBM CLOUD SERVICES USED

- ? **Watsonx.ai Studio – Build and fine-tune RAG models**
- ? **Watsonx.ai Runtime – Host and deploy the AI Agent**
- ? **Agent Lab – Manage chatbot and integration**
- ? **Granite Foundation Models – For natural language understanding**

WOW FACTORS

- **Personalized Sustainability Tips**
- **Local Recycling & Govt Schemes**
- **Semantic Search with RAG**
- **Real-time Green Recommendations**
- **Actionable Guidance, Not Just Information**
- **Habit tracking (future)**
- **Voice and multilingual support (future)**

END USERS

- ❑ - Eco-conscious citizens
- ❑ - Urban households
- ❑ - Schools & universities
- ❑ - NGOs promoting sustainability
- ❑ - Local governments
- ❑ - Event organizers (green events)

Resource list - IBM Cloud

cloud.ibm.com/resources

Incognito

IBM Cloud

Search resources and products...

Q

Catalog

Manage

Raaga Lahari Sakethap...

Resource list

Create resource +

Name	Group	Location	Product	Status	Tags
Filter by name or IP address...	Filter by group...	Filter...	Q Filter...	Q Filter...	Filter...
Compute (0)					
Containers (0)					
Networking (0)					
Storage (1)					
Cloud Object Storage-qt	Default	Global	Cloud Object Storage	Active	cpdaas
Converged infrastructure (0)					
Enterprise applications (0)					
AI / Machine Learning (2)					
watsonx.ai Runtime-cd	Default	Dallas (us-south)	watsonx.ai Runtime	Active	cpdaas
watsonx.ai Studio-ey	Default	Dallas (us-south)	watsonx.ai Studio	Active	cpdaas
Analytics (0)					
Blockchain (0)					
Databases (0)					
Developer tools (0)					

IBM watsonx

Upgrade ? Bell Raaga Lahari Sakethapura... Dallas RS

Projects / ECO_FRIENDLY / Prompt Lab

AI guardrails off Unsaved New prompt + Deploy


Chat Structured Freeform

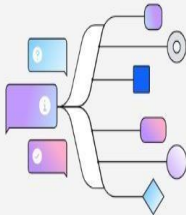
AI Model: granite-3-8b-instruct

[-]

0

Customize your chat

Before you start chatting, you can update the current settings and ground the chat with documents or media files. To upload documents or other files, click  next to the input field.






Sample questions

What are more efficient alternatives to a 'for loop' in Python? →

What is the Transformers architecture? →

Create a chart of the top NLP use-cases for foundation models. →

Describe generative AI using emojis. →

 type something...  

RESULTS

Agent preview

 Eco Friendly Agent 11:57 PM

Welcome to Eco Friendly Agent

It's an AI agent that offers personalized, eco-tips to help users lead a simple, sustainable lives.



Sample questions

How can I reduce plastic usage at home without spending extra money? →

What's the carbon footprint of ordering food online every day? →

What are some low-cost eco-friendly practices a company can adopt in its office? →

What's the average decomposition time for a plastic water bottle? →

Type something...

Agent preview

 You: 11:57 PM

How can I reduce plastic usage at home without spending extra money?

 Eco Friendly Agent 11:57 PM

To reduce plastic usage at home without spending extra money, consider the following tips:

1. Refuse single-use plastics: Say no to plastic bags, straws, and water bottles.
2. Use reusable alternatives: Carry a reusable water bottle, shopping bag, and coffee cup.
3. Choose products with minimal packaging: Buy items in bulk or with minimal packaging to reduce waste.
4. Avoid microplastics: Choose cosmetics and personal care products that are free from microplastics.
5. Compost: Compost food waste to reduce the amount of trash sent to landfills and create a natural fertilizer for your garden.
6. Use natural fabrics: Choose clothing and textiles made from natural fibers like cotton, wool, and silk.
7. Buy second-hand: Consider buying second-hand items instead of new ones to reduce waste and support sustainable consumption.

Remember, every small change counts, and making these changes can help reduce plastic waste and promote sustainability.

► How did I get this answer?

Type something...

RESULTS

DEPLOYED AI AGENT

IBM watsonx

Upgrade

Raaga Lahari Sakethapura...

Dallas

RS

Deployment spaces /

↑ ↓

ⓘ

Eco friendly Agent

Overview





Assets

Deployments

Jobs

Manage

🔍 Search

Name	Type	Status	Asset	Asset type	Tags	Last modified
 Eco Friendly Agent	Online	 Deployed	Eco Friendly Agent	AI service	wx-agent 	31 seconds ago Raaga Lahari Sakethapuram (You) 

Items per page: 20

1–1 of 1 items

1 of 1 pages

RESULTS

IBM watsonx

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RS

Deployment spaces / Eco friendly Agent / Eco Friendly Agent /

Eco Friendly Agent Deployed Online


API referenceTestPreview

New chat +

R

You 12:28 AM

How can I reduce plastic usage at home without spending extra money?



Eco Friendly Agent 12:28 AM

Hi, I am eco-friendly ai agent. How can I help you reduce plastic usage at home without spending extra money?

Here are some suggestions:

1. **Use Reusable Containers:** Instead of buying plastic bags or containers for storage, use glass or stainless steel containers. They are reusable and safer for storing food.

2. **Say No to Plastic Bottles:** Invest in a good quality reusable water bottle and a coffee cup. This will help you avoid single-use plastic bottles and cups.


3. **Opt for Bar Soap and Shampoo:** Many personal care products come in plastic bottles. Switch to bar soap and shampoo which are often packaged in paper or no packaging at all.

4. **Use Cloth Towels:** Replace paper towels with cloth towels. They are reusable and reduce plastic waste.


type something...

➤

About this deployment x

Name 


Eco Friendly Agent

Description 


It's an AI agent that offers personalized, eco-tips to help users lead a simple, sustainable lives.


Deployment Details


Deployment ID: b78503d0-8058-42...

Serving name: 


No serving name.

Software specification: 


runtime-24.1-py3.11 

Hardware specification: 


Extra extra small: 1 CPU and 2 GB RAM


Copies: 

1

Tags 

wx-agent

Associated asset 

 Eco Friendly Agent

0e6ce878-a026-470b-8700-3a1f6409aa4e

Last modified

...

IBM watsonx

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Dallas ▾


RS

Deployment spaces / Eco friendly Agent / Eco Friendly Agent /

Eco Friendly Agent Deployed Online

API referenceTestPreview

About this deployment x

Name 

Eco Friendly Agent

CONCLUSION

- ❑ The Eco Lifestyle Agent bridges the gap between sustainability awareness and action.
- ❑ By delivering personalized and localized eco-guidance using IBM Cloud and RAG, it empowers individuals to make small, impactful daily changes for a greener future.

GITHUB LINK

 https://github.com/raagalahari/Eco_friendly_AI_Agent

FUTURE SCOPE

- ❓ - Multilingual & voice-based assistant
- ❓ - Mobile app integration
- ❓ - Smart bin sensor data integration
- ❓ - Eco habit streaks & gamification
- ❓ - Partnership with GHMC, Swachh Bharat, etc.

IBM CERTIFICATIONS


Screenshot (getting started with AI)



RAG LAB certificate

IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Raaga Lahari Sakethapuram

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 19 Jul 2025 (GMT)

Learning hours: 20 mins



THANK YOU

