

---

# **CAPSTONE PROJECT**

## **ECO LIFESTYLE AGENT**

**Presented By:**

**Student name : SYED KHIYAS AHEMMED**

**College Name & Department : PRESIDENCY UNIVERSITY & DATA SCIENCE**

# OUTLINE

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

# PROBLEM STATEMENT

- **Problem Statement:**

Individuals are increasingly aware of the need for sustainable living, yet many struggle to find reliable, personalized, and actionable guidance on eco-friendly practices. The overwhelming volume of scattered information on sustainable habits, eco-products, government initiatives, and recycling guidelines makes it difficult for users to make informed decisions in their daily lives.

- **Proposed Solution:**

An Eco Lifestyle Agent powered by Natural Language Processing (NLP) and Retrieval-Augmented Generation (RAG) to provide users with practical, personalized suggestions for adopting a greener lifestyle. The agent retrieves tips from trusted environmental sources and responds to natural language queries with localized recycling information, eco-product recommendations, and government schemes empowering users to take small, impactful actions toward a sustainable future.

---

# 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

# WOW FACTORS

- This agent makes sustainable living easy and personalized by providing trusted, actionable eco-friendly tips.
- **Key Features:**
- Smart search for green living tips and eco-products
- Local recycling rules based on user location
- Personalized daily eco-suggestions
- Government scheme and subsidy discovery
- Carbon footprint reduction tips
- Verified sustainable product recommendations
- Quick eco-challenges to build habits
- Bite-sized environmental awareness content

---

## END USERS

- Environmentally conscious individuals
- Urban residents seeking sustainable habits
- Students and educators promoting eco-awareness
- NGOs and green activists
- Local government sustainability departments
- Eco-product startups and vendors

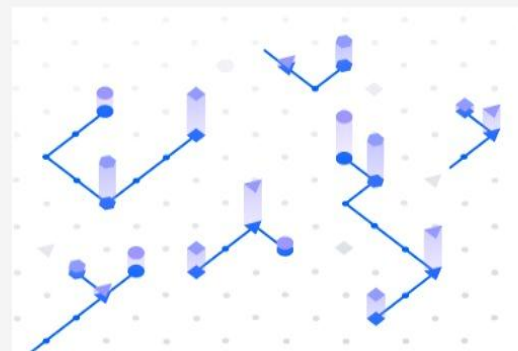
# RESULTS



Eco Lifestyle Agent 11:29 PM

## Welcome to Eco Lifestyle Agent

AI agent offering personalized eco-friendly tips using IBM Granite and RAG on IBM Cloud Lite.



Type something...





# RESULTS



You: 11:29 PM

give me eco friendly tips



Eco Lifestyle Agent 11:29 PM

Absolutely, here are some general eco-friendly tips to help you live more sustainably:

1. **Reduce, Reuse, Recycle:** This mantra is a great starting point. Reduce waste by choosing reusable items over disposables. Reuse items as much as possible before throwing them away. Recycle whenever you can.
2. **Conserve Water:** Fix leaks promptly, take shorter showers, and consider installing water-saving shower heads and dual-flush toilets.
3. **Save Energy:** Turn off lights and appliances when not in use. Switch to energy-efficient light bulbs and appliances. Consider using renewable energy sources if possible.

Type something...



# RESULTS



You: 02:33 PM

create a schedule for me to make my home eco friendly



Eco Lifestyle Agent 02:33 PM

Here's a simple, actionable weekly schedule to help you make your home more eco-friendly:

## Monday: Energy Efficiency

- Switch off all non-essential electronics when you leave the room.
- Unplug devices when not in use to avoid "vampire power" drain.

## Tuesday: Waste Reduction

- Start a compost bin for kitchen scraps.
- Swap single-use items with reusables (e.g., cloth napkins instead of paper towels).

Type something...



# RESULTS

## Deployed AI Agent

IBM watsonx

Upgrade ? 🔔 KHIYA

[Deployment spaces](#) / [Eco lifestyle Agent](#) / Eco Lifestyle Agent

Deployments


Code

Schema

🔍 Search

🔄

New deployment ↗

Name	Type	Status	Tags	Last modified	↓
 Eco Lifestyle Agent	Online	✔ Deployed	<div>wx-agent ↗</div>	2 days ago KHIYAS AHEMMED SYED (You)	⋮

Items per page: 20 ▾

1–1 of 1 items

1 of 1 pages ◀ ▶

---

## CONCLUSION

The Eco Lifestyle Agent effectively delivered targeted and category-specific guidance, helping users adopt sustainable habits in their daily routines. Its focused responses, aligned with eco-conscious living, demonstrated the potential of AI to influence environmentally responsible behavior through personalized, actionable suggestions.

---

# FUTURE SCOPE

- ❖ Integration with smart home devices for real-time eco suggestions
- ❖ Mobile app version for on-the-go lifestyle tracking
- ❖ Personalized AI based on user habits and preferences
- ❖ Expansion to support multiple languages and regions
- ❖ Advanced analytics to track individual carbon footprint
- ❖ Collaboration with eco brands for product recommendations

# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



khiyas ahemmed Syed

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 20, 2025  
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/071179bc-290d-4df0-8f87-7929263c74e6>



IBM **SkillsBuild**

Completion Certificate



This certificate is presented to  
khiyas Ahemmed syed

for the completion of

# **Lab: Retrieval Augmented Generation with LangChain**

(ALM-COURSE\_3824998)

According to the Adobe Learning Manager system of record

**Completion date:** 26 Jul 2025 (GMT)

**Learning hours:** 20 mins

Git hub link : <https://github.com/khiyas67/Eco-Lifestyle-Agent>





**THANK YOU**