

Eco Lifestyle Agent - RAG Approach

Project Description

The Eco Lifestyle Agent is an AI-powered assistant that helps users embrace a sustainable lifestyle by providing personalized eco-friendly guidance. Using Retrieval-Augmented Generation (RAG), it fetches insights from trusted environmental sources to offer tips on reducing waste, eco-friendly products, local recycling protocols, and government sustainability programs.

Built on IBM Cloud Lite services and powered by IBM Granite, this solution promotes small but impactful lifestyle changes, empowering users to make informed environmental decisions and reduce their carbon footprint.

What is Retrieval-Augmented Generation (RAG)?

RAG is an advanced AI architecture that combines retrieval-based methods with generative models. It first searches for relevant information from external knowledge sources and then uses a language model to generate informed responses.

This allows AI systems to produce up-to-date, context-aware answers, even on topics not included in the model's initial training.

Application of RAG in Eco Lifestyle Agent

In the Eco Lifestyle Agent, RAG is used to retrieve real-time environmental data such as:

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- Local recycling rules and pickup schedules.
- Government policies and incentive programs.
- Tips for sustainable consumption and waste reduction.
- Recommendations for eco-friendly alternatives.

The retrieved content is then processed by IBM Granite to generate personalized, actionable responses based on the user's query.

Benefits of RAG in the Project

- Accurate, real-time guidance from credible sources.
- Personalized advice tailored to individual user needs.
- Better user engagement through natural language understanding.
- Scalable and adaptable solution architecture using IBM Cloud.