**Sustainable Smart City Assistant Using IBM Granite**

**Introduction To The Project**

**🌍 Project Overview**

The Sustainable Smart City Assistant is an AI-powered platform designed to empower citizens, urban planners, and local authorities with tools that promote environmental sustainability, informed decision-making, and smart urban living. Built as a modular web-based assistant, it integrates generative AI, data analytics to address key urban challenges.

The system includes five main functional modules:

1. **♻️ Recycle Management Advisor** – Guides eco-friendly waste disposal and recycling practices.
2. **🔹 AI Image Generator** – Generates visual representations of sustainable city environments.
3. 📙 **Problem & Solution Finder (RAG)** – Provides AI-generated insights and document-based responses to urban issues.
4. 📊 **City Health Dashboard** – Allows comparison of environmental health metrics across cities.
5. 🏙️ **City Comparison Tool** – Compares two cities side-by-side based on key sustainability indicators like air quality, traffic levels, waste management, and public health metrics.

**🎯 Purpose**

The purpose of the project is to:

* Promote sustainable behaviour and waste management practices.
* Provide data-driven insights to empower better urban decisions.
* Encourage civic participation and public awareness.
* Offer scalable tools aligned with UN Sustainable Development Goals (SDGs).

**👥 Target Audience**

* **Citizens and Households**: Receive tips, feedback, and eco-advice for sustainable living.
* **Urban Planners and Civic Bodies**: Use dashboards and RAG-based tools to analyse and solve local problems.
* **Environmental NGOs and Researchers**: Access data-driven insights and visualizations.
* **Students and Educators**: Learn about sustainable practices and AI applications in urban planning.

**🌐 Social and Economic Impact**

* **Social Impact**:
  + Empowers individuals to take part in solving environmental issues.
  + Improves digital civic participation and community awareness.
  + Encourages responsible behaviour through AI-generated content.
* **Economic Impact**:
  + Reduces costs associated with inefficient waste management.
  + Helps local governments make data-driven policy decisions.
  + Supports green innovation and startup potential in the civic tech space.