Ideation Phase

Sustainable Smart City Assistant Using IBM Granite LLM

Date: 26 June 2025

Team ID: LTVIP2025TMID20299

Project Name: SmartSDLC: Sustainable Smart City Assistant Using IBM Granite LLM

Maximum Marks: 4 Marks

Brainstorm & Idea Prioritization Template

The Sustainable Smart City Assistant leverages IBM Watsonx Granite LLM to assist in automating smart governance tasks such as policy summarization, KPI forecasting, anomaly detection, feedback management, and sustainable guidance through a conversational AI interface. It aims to empower municipalities and citizens by providing intelligent urban insights using LLMs and modern full-stack architecture..

Step-1: Team Gathering, Collaboration and Select the Problem Statement

Team Members:

* Jakku Kumarswami

* Garikipati Tripura

* Gandham Sravya Kalavathi

* Gonam Kailash

Selected Problem Statement:

How might we use IBM Watsonx Granite LLM to automate smart city governance tasks like policy summarization, KPI forecasting, anomaly detection, eco-awareness, and citizen engagement to improve efficiency, transparency, and urban sustainability?

Step-2: Brainstorm, Idea Listing and Grouping

Brainstormed Ideas:

· Extract city policy text from uploaded PDFs using PyMuPDF

· Summarize extracted policies in citizen-friendly format via IBM Granite LLM

· Collect and categorize feedback using Streamlit forms

· Upload KPI datasets and predict upcoming trends using LLMs + ML

· Detect unusual data points using LLM prompts (anomaly detection)

· Generate eco-friendly living tips based on user keywords

· Enable a chat assistant for sustainability and governance-related questions

· Build a unified Streamlit dashboard to house all modules

· Use spinners, icons, and success loaders for smooth UX

Step-3: Idea Prioritization

Top Priority Ideas for Implementation:

1. Policy Summarization via PDF or Text

2. KPI Forecasting using LLM + tabular inputs

3 . Anomaly Detection in resource consumption

4. Citizen Feedback Collection

5. Chat Assistant for real-time urban support

6. Eco Tips Generator using keywords

Secondary Priority Ideas:

- Semantic Search for policies (Pinecone based)

- Custom sustainability report generator

- Role-based access for citizen vs. admin