**Project Design Phase**

**Proposed Solution Template**

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| Date | 28 June 2025 |
| Team ID | LTVIP2025TMID30062 |
| Project Name | Sustainable Smart City Assistant Using IBM Granite LLM |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

Project team shall fill the following information in the proposed solution template.

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| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | This project is an Al-powered system that helps make cities more sustainable and citizen-friendly. It uses Grante large language model (LM) and modern data tools. The platform includes many helpful tools like   * A dashboard showing the city's health and environment. * A way for citizens to give feedback. * Tools that can summarize long documents. * Eco-friendly advice for people and the city. * Systems to detect unusual activity (like pollution spikes). * Forecasts for important metrics (like traffic, pollution, energy use). * A chatbot that can answer questions and help users.   The system is built with a FastAPI or Streamlit making it easy to use and expand. |
|  | Idea / Solution description | We propose an AI-powered Smart City Assistant that uses **IBM Granite LLM** to:   * Summarize complex policy documents. * Forecast sustainability KPIs using machine learning. * Detect anomalies (e.g., spikes in pollution or water usage). * Provide real-time weather insights. * Enable natural language chatbot-based interaction.   The assistant is deployed via a **Streamlit frontend**, with **FastAPI backend**, integrated with **Pinecone vector database** and other APIs to deliver data-driven and user-friendly insights. |
|  | Novelty / Uniqueness | * Integration of **IBM Granite LLM** for contextual understanding and summarization. * Combines chat interface, document analytics, anomaly detection, and weather insights in one assistant. * Leverages vector search and ML models to deliver hyper-local insights. * Customizable for different cities with local datasets. |
|  | Social Impact / Customer Satisfaction | * Empowers citizens with awareness of sustainability and climate impact. * Reduces the gap between government data and public understanding. * Enables smarter decision-making at personal, community, and municipal levels. * Promotes transparency in urban planning. |
|  | Business Model (Revenue Model) | Freemium model |
|  | Scalability of the Solution | * Can be scaled across different cities by plugging in respective datasets and KPIs. * Modular architecture allows extension to other domains like energy, transport, or disaster management. * Supports multilingual expansion using LLM capabilities. |