Ideation Phase

Brainstorm & Idea Prioritization

Date	**26 MAY 2025**
Team ID	LTVIP2025TMID30991
Project Name	Sustainable Smart City Assistant Using IBM Granite LLM
Maximum Marks	4 Marks

Step 1: Team Gathering, Collaboration and Problem Statement Selection

Although this project was completed individually by Madduru Mani Teja, a structured ideation methodology was adopted. The goal was to identify a relevant urban challenge that could benefit from the application of AI technologies. Various sources including smart city reports, sustainability whitepapers, and urban governance case studies were explored.

Problem Statement Chosen:

"How can AI be leveraged to enhance sustainability, governance, and public engagement in smart cities through intelligent services like waste management, feedback mechanisms, energy analysis, and policy simplification?"

Step 2: Brainstorming, Idea Listing, and Grouping

Brainstormed Ideas:

S.No	Idea	Category
1	AI-powered waste sorting assistant	Waste Management
2	Personalized energy-saving recommendations	Energy Optimization
3	Citizen feedback submission and categorization	Urban Governance
4	Daily eco-challenges to promote sustainable habits	Public Awareness
5	Summarization of lengthy policy documents using LLMs	Policy Simplification
6	Resource forecasting from past data	Predictive Analytics
7	Anomaly detection in utility consumption patterns	Monitoring & Compliance
8	Q&A chatbot for city sustainability-related questions	Education & Engagement

Grouped Functional Modules:

- **Waste Management:** Disposal instruction generator.
- **Energy Optimization:** Energy behavior analysis and recommendations.
- **Citizen Governance:** Feedback submission and data storage.
- **Policy Simplification:** Summarization of complex policies using LLM.
- **Sustainability Awareness:** Daily green challenges.
- **Forecasting Engine:** Resource usage prediction.
- **Anomaly Detection:** Pattern analysis and reporting.
- **Knowledge Assistant:** Sustainability-focused chatbot.

Step 3: Idea Prioritization

Ideas were prioritized based on the following criteria:

- Relevance to real-world smart city issues
- Feasibility of development within internship duration
- Integration potential with IBM Granite LLM
- Impact on citizens and administrators

S.No	Idea	Impact	Feasibility	Selected for Implementation
1	Waste sorting AI	High	High	Yes
2	Energy usage analysis	High	High	Yes
3	Feedback collection system	High	High	Yes
4	Daily green challenges	Medium	High	Yes
5	Policy document summarization	High	Medium	Yes
6	Forecasting utility resource usage	Medium	Medium	Yes
7	Anomaly detection in utility consumption	High	Medium	Yes
8	Sustainability Q&A chatbot	Medium	High	Yes

All shortlisted ideas were determined to be implementable within the available timeline and resources and were included in the final system design.