

Project Design Phase-II
Solution Requirements (Functional & Non-functional)

| | |
|---------------|--|
| Date | 26-6 2025 |
| Team ID | LTVIP2025TMID37089 |
| Project Name | Sustainable Smart City Assistant using IBM Granite LLM |
| Maximum Marks | 4 Marks |

Functional Requirements:

| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
|--------|-------------------------------|---|
| FR-1 | User Registration | Registration through Form Registration through Gmail Registration through LinkedIn |
| FR-2 | User Confirmation | Confirmation via Email Confirmation via OTP |
| FR-3 | Smart Assistant Query System | Ask sustainability-related questions (Eco-Query) Get AI-generated responses from IBM Granite LLM Query processing via Gradio UI |
| FR-4 | Civic Complaint Handling | Accept text-based civic complaints Classify complaint category (e.g., waste, water, traffic) Route to relevant department |
| FR-5 | Assistant Mode Selection | User selects between Eco-Query and Complaint Resolver modes Display appropriate input prompts and response formatting based on selection |
| FR-6 | Deployment & Accessibility | Web access via Gradio interface Mobile compatibility for Gradio UI Public deployment using demo.launch(share=True) |

Non-functional Requirements:

| FR No. | Non-Functional Requirement | Description |
|--------|----------------------------|--|
| NFR-1 | Usability | The assistant should have a simple, intuitive Gradio interface for smooth interaction, allowing users to easily submit queries or complaints without prior training. |
| NFR-2 | Security | Basic login authentication is implemented to prevent unauthorized access. Future versions may include Gmail/Facebook login and encryption of complaint data. |
| NFR-3 | Reliability | The assistant must function consistently for all users, ensuring that both eco-queries and complaint routing return accurate and predictable results. |
| NFR-4 | Performance | AI responses should be generated quickly (within 2–4 seconds) using optimized model inference, ensuring minimal user wait time during interaction. |

| | | |
|-------|---------------------|---|
| NFR-5 | Availability | The solution should be accessible 24/7 via public Gradio link or deployment on platforms like Hugging Face Spaces, ensuring uninterrupted service. |
| NFR-6 | Scalability | The system should be designed to support growing numbers of users, complaints, and additional smart city features (e.g., energy, traffic) without performance loss. |