

User Acceptance Testing (UAT) Template

Date	JUNE 25
Team ID	LTVIP2025TMID30260
Project Name	"Sustainable Smart City Assistant using Granite IBM LLM
Maximum Marks	

Project Overview:

Project Name: ["Sustainable Smart City Assistant using Granite IBM LLM"]

Project Description: [1.1

The "Sustainable Smart City Assistant" is an AI-powered application built to enhance urban living by leveraging cutting-edge natural language processing through IBM's Granite LLM (Large Language Model). The project harnesses the capabilities of the granite-3.3-2b-instruct model hosted on Hugging Face to interactively assist users in civic matters, sustainability concerns, and intelligent decision-making processes in urban environments. This assistant is designed with a focus on scalability, user-friendliness, and real-time responses, making it suitable for smart governance applications.

Developed using Visual Studio Code, the core application is written in Python and deployed using Gradio—a lightweight, interactive web UI framework that allows seamless communication with the backend. The backend utilizes PyTorch for model inference, providing a high-performance and flexible infrastructure. This assistant serves as a bridge between citizens and smart city systems, offering real-time solutions through intuitive, conversational interfaces.

The architecture supports features like civic complaint classification, department-wise routing, eco-guidance, and sustainability queries. A key aspect of the project is its modularity—designed to scale up with future needs such as image input integration, API expansion, and cloud deployment. The system is compatible with both CPUs and GPUs, ensuring performance optimization across various deployment environments.

A single script, main.py, contains the entire application logic: model loading, prompt structuring, inference execution, error handling, and frontend rendering. The UI allows users to choose assistant modes, enter queries, and receive actionable responses—ranging from waste management optimization to traffic route suggestions. The assistant can operate in public via demo links or be embedded into more complex ecosystems such as FastAPI or Hugging Face Spaces.

Through its intelligent interaction system and sustainable focus, this project presents a significant leap forward in digital urban management tools. It introduces not only a responsive assistant but also

a concept for scalable eco-digital governance. With its open-ended scope and extensibility, the Sustainable Smart City Assistant stands as a potential future standard in smart city AI deployments.

Project Version: [IBM Granite 3.3-2b]

Testing Period: [19-05-2025] to [27-06-2025]

Testing Scope:

- ☑ Voice-based complaint registration
- ☑ Chatbot query handling
- ☑ Map-based location services (Leaflet.js)
- ☑ Weather and pollution info integration
- ☑ Admin dashboard for complaint review
- ☑ Sustainable service suggestions

Testing Environment:

- URL/Location: <https://github.com/Mohanachandrika55/mohana.git>

Test Cases:

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-001	Voice complaint submission	1. Open Assistant 2. Click voice mic 3. Speak complaint	Complaint is recorded and acknowledged	As expected	Pass
... TC-002	... Chatbot service interaction	... 1. Type "garbage not collected" in chat 2. Submit 3. Receive a response	... Bot responds with proper complaint submission advice	... Bot replied correctly	... Pass

Bug Tracking:

Bug ID	Bug Description	Steps to reproduce	Severity	Status	Additional feedback
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BG-001	Voice not captured in Firefox	1. Open in Firefox 2. Click mic 3. Try to speak	Medium	Open	Might be browser perm
... BG-002	... Map tiles not loading on slow network	... 1. Turn off Wi-Fi 2. Use mobile data 3. Open map	... Low	... In Progress	... Add loader or error message

Sign-off:

Tester Name: [Madapati mohana Chandrika]

Date: [27-June-2025]

Signature: [mohana chandrika]

Notes:

- Both **positive and negative** scenarios were tested.
- Suggested improvements include browser compatibility and chatbot intent training.
- Final deployment will require sign-off from both the **Project Manager** and **Product Owner**.