Sustainable Smart City Assistant Using IBM Granite LLM

---

## 📘 FDC

# 1. Introduction

\*\*Project Title:\*\* Sustainable Smart City Assistant

\*\*Team id: LTVIP2025TMID32506

Team member p gowthami

---

2. Project Overview

\*\*Purpose:\*\* Provide eco-suggestions via an AI assistant.

\*\*Features:\*\* Smart query handling, cloud-ready, user-friendly interface.

---

3. Architecture

\*Frontend:\*\* HTML/CSS or React

\*Backend:\*\* FastAPI in Python

\*Database:\*\* MongoDB (optional)

---

4. Setup Instructions

\*Prerequisites:Python, FastAPI, IBM Granite LLM access

\*Installation:

```bash

pip install fastapi uvicorn

uvicorn main:app --reload

```

5. Folder Structure

```

/project-root

/frontend

/backend

└── main.py

└── test\_assist.py

```

---

6. Running the Application

\*Frontend:`npm start`

\*Backend: `uvicorn main:app --reload`

---

7. API Documentation

\*POST /assist

\* Payload: `{ "query": "How to reduce energy use?" }`

\* Response: `{ "response": "You can use LED lights and reduce AC usage..." }`

---

8. Authentication

(Currently Open API — Add token-based auth for production)

---

9. User Interface

Simple input box + submit button to interact with AI. Displays clean response in a chat-style box.

---

10. Testing

Includes functional and load testing. See `test\_assist()` function in backend.

---

11. Screenshots or Demo

(Add screenshots of working web UI and assistant answers)

---

12. Known Issues

\* No offline support

\* May occasionally give generic answers

---

13. Future Enhancements

\* Multilingual support

\* Integration with real-time pollution data

\* App version for Android/iOS

-