**Project Design Phase-II**

**Data Flow Diagram & User Stories**

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| Date | 20 jun 2025 |
| Team ID | LTVIP2025TMID32673 |
| Project Name | Sustainable Smart City Assistant AI by using IBM granite LLM |
| Maximum Marks | 4 Marks |

**Data Flow Diagram (DFD)**

Citizens / Planners   
   
 |  
   
 Conversational UI <--- (straemlit)  
   
 |  
   
 AI & Personalization   
 (Granite Models, Analytics)   
   
 |  
   
 Data Integration   
 (FastAPI, Utilities)   
   
 |  
   
 Cloud Infrastructure   
 (Sql Storage, Compute, API)

**Entities:**

- Citizens  
- City Administrator  
- Smart City Database  
- AI Assistant Interface

**System Processes:**

1. Data Collection from feedbacks  
2. AI-based Data Processing & Analysis  
3. User Request Handling (via streamlit)  
4. Feedback Loop to Government Authority  
5. Response Generation and Visualization

**Data Stores:**

- Environmental Data Repository  
- User Profile & Preferences  
- Feedback Logs  
- Usage Statistics

**Data Flow Sequence (Narrative)**

1. Citizens input requests via webapp  
2. The system fetches real-time data from databases.  
3. The AI engine processes and returns recommendations .  
4. Users receive dashboards or text responses.  
5. Feedback is captured and logged for analysis.  
6. City authorities access insights and reports for planning.

**User Stories**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| User Type | Functional Requirement (Epic) | User Story Number | User Story / Task | Acceptance Criteria | Priority | Release |
| Citizen (Mobile/Web) | Registration | USN-1 | As a user, I can register using email and password. | I can log in and access personalized dashboard. | High | Sprint-1 |
| Citizen (Mobile/Web) |  | USN-2 | As a user, I receive a confirmation email after registration. | I can verify and activate my account. | High | Sprint-1 |
| Citizen (Mobile/Web) | Social Login | USN-3 | As a user, I can register using Google or Facebook. | I can log in via my social account. | Medium | Sprint-2 |
| Citizen (Mobile/Web) | Dashboard | USN-4 | As a user, I can view energy/water/waste usage trends. | Usage data and charts are visible on my dashboard. | High | Sprint-2 |
| Citizen (Mobile/Web) | Alerts | USN-5 | As a user, I get real-time alerts on pollution, outages, traffic. | Notifications appear based on my location. | High | Sprint-3 |
| Citizen (Mobile/Web) | Feedback | USN-6 | As a user, I can submit feedback to authorities through the app. | Feedback is acknowledged and logged in system. | Medium | Sprint-3 |
| City Admin | Monitoring | USN-7 | As an admin, I can monitor overall city sustainability metrics. | Admin dashboard shows live analytics. | High | Sprint-2 |
| City Admin | Citizen Feedback | USN-8 | As an admin, I can review user-submitted feedback. | Feedback list is sorted by category and date. | Medium | Sprint-3 |