# Data Flow Diagram & User Stories

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Project Name: Sustainable Smart City Assistant Using IBM Granite LLM

## Level 0 DFD

The user interacts with the Sustainable Smart City Assistant through a Streamlit interface. Inputs such as policy documents, feedback, or sustainability queries are processed through the FastAPI backend. The IBM Watsonx Granite LLM handles summarization, eco-tip generation, chat responses, and sustainability report generation. Processed output is returned to the user interface, while temporary interaction data is managed through session state.

## Level 1 DFD

Each module—Policy Summarizer, Eco Tips Generator, Citizen Feedback Form, KPI Forecasting, Anomaly Detection, and Chat Assistant—receives user inputs, forwards relevant data to the Watsonx API or internal machine learning models, processes the response, and updates the UI dynamically. Interactions are session-based and occur in real time.

## User Stories

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| **User Type** | **Feature** | **User Story ID** | **User Story** | **Priority / Sprint** |
| City Administrator | Policy Summarization | USN-1 | As a city administrator, I can upload a policy document to receive a simplified AI-generated summary. | High / Sprint-1 |
| Citizen | Eco Tips Generator | USN-2 | As a citizen, I can input a sustainability topic and receive actionable eco-friendly tips. | High / Sprint-1 |
| City Administrator | KPI Forecasting | USN-3 | As an administrator, I can upload KPI datasets to forecast resource consumption trends. | High / Sprint-2 |
| Administrator | Anomaly Detection | USN-4 | As an administrator, I can upload resource usage data and receive alerts for anomalies. | Medium / Sprint-2 |
| Citizen | Chat Assistant | USN-5 | As a citizen, I can ask questions related to sustainability or city governance and receive AI-powered responses. | Medium / Sprint-3 |