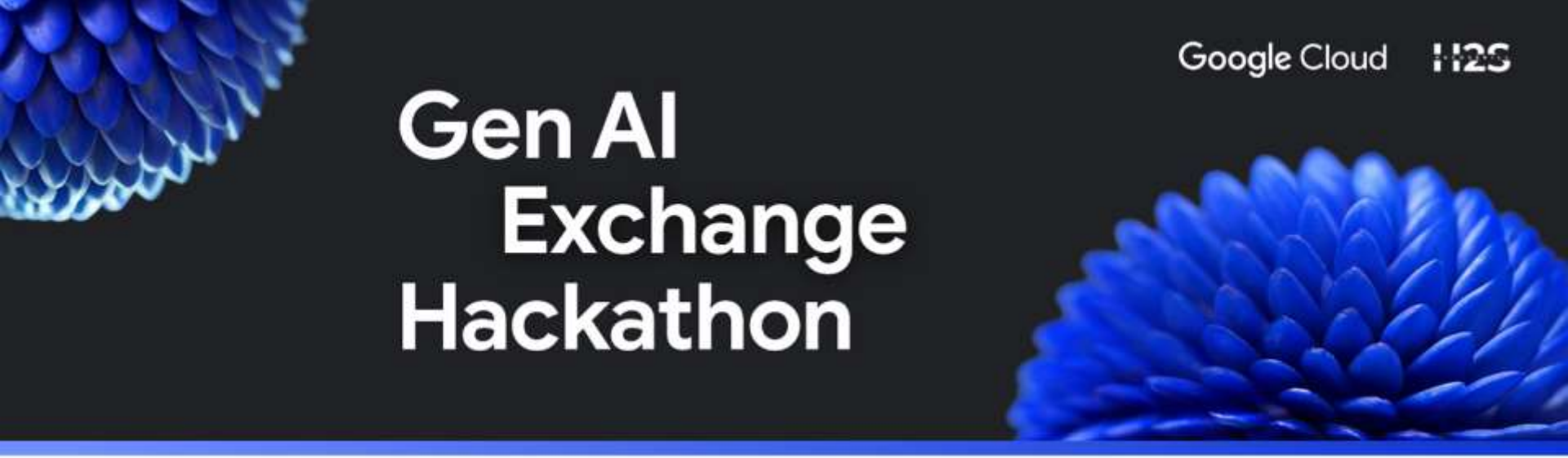


Team Name : **Team Aegis Innovators**

Team Leader Name : **Yessasvini Sudarshanam**

Problem Statement: Public spaces in cities—markets, parks, parking zones—frequently witness low-level but high-impact civic conflicts such as hawker–shopkeeper disputes, parking quarrels, water shortages, and RWA–citizen tensions.Current governance systems react only *after* complaints arise. There is no predictive mechanism to foresee and prevent these recurring frictions.

Brief about the prototype:

Project Aegis is an **AI-powered Predictive Public Space Conflict Mitigation System** that shifts governance from reactive firefighting to proactive prevention.
It fuses multiple data sources—citizen grievances, social sentiment, urban event data, and mobility patterns—to forecast civic friction zones before issues escalate.

How it's different:
Unlike conventional complaint redressal or policing dashboards, Aegis doesn't wait for an incident to occur. It uses predictive analytics to generate early alerts for authorities.

How it solves the problem:
By combining pattern detection with real-time alerts, Aegis empowers civic bodies and police to take preemptive actions such as preventive patrols, citizen advisories, and administrative coordination.

USP (Unique Selling Proposition):

Predictive Governance: First-of-its-kind AI that forecasts public space disputes.
Data Fusion: Integrates social, civic, and event data into a single "Friction Index."
Actionable Insights: Translates predictions into clear, operational recommendations.
Privacy-First: Works on aggregated, anonymized, and publicly available data only.

Opportunity should be able to explain the following:

◆ **How different is it from existing solutions?**
Unlike traditional grievance or complaint portals that act *after* an issue arises, **Project Aegis** uses AI-driven predictive analytics to forecast potential public space conflicts *before they occur*. It fuses data from civic records, social sentiment, and event schedules — a novel data combination no existing civic system uses today.

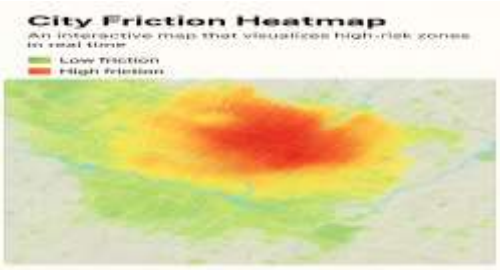
◆ **How will it solve the problem?**
Aegis identifies early warning signs by analyzing trends and correlations among grievance archives, public mood, and urban activity. It then alerts local authorities with a *Friction Index score* and *recommended preventive actions*, allowing intervention before escalation.

◆ **USP of the proposed solution:**

Predictive Governance: Shifts from reactive complaint management to proactive prevention.
Data Fusion Intelligence: Merges multiple non-obvious urban data streams for holistic insights.
Actionable Dashboards: Converts AI predictions into simple, visual alerts for decision-makers.
Privacy-First Design: Uses anonymized and aggregated data, ensuring ethical and transparent AI.

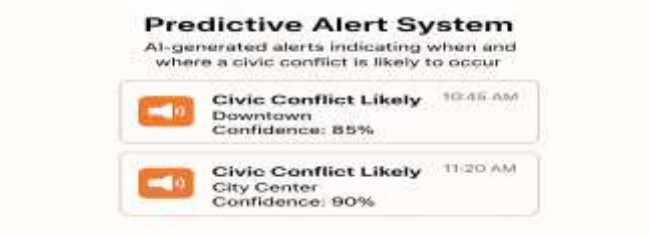
List of features offered by the solution:

1. City Friction HeatmapAn interactive map that visualizes high-risk zones in real time — color-coded from green (low friction) to red (high friction).

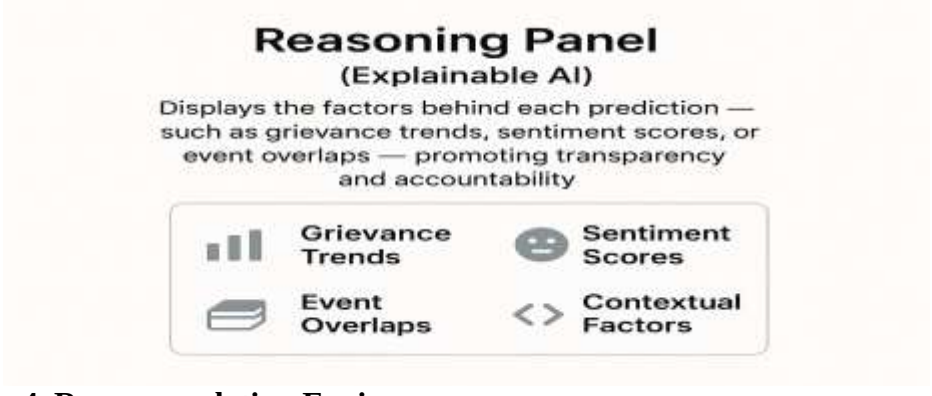


🔔 **2. Predictive Alert System**

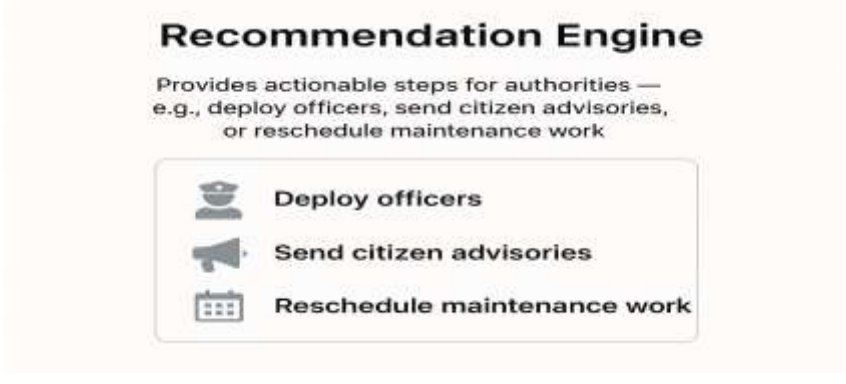
AI-generated alerts indicating when and where a civic conflict is likely to occur, with confidence scores and timestamps.



3. Reasoning Panel (Explainable AI):
Displays the factors behind each prediction — such as grievance trends, sentiment scores, or event overlaps — promoting transparency and accountability.



4. Recommendation Engine:
Provides actionable steps for authorities — e.g., deploy officers, send citizen advisories, or reschedule maintenance work.



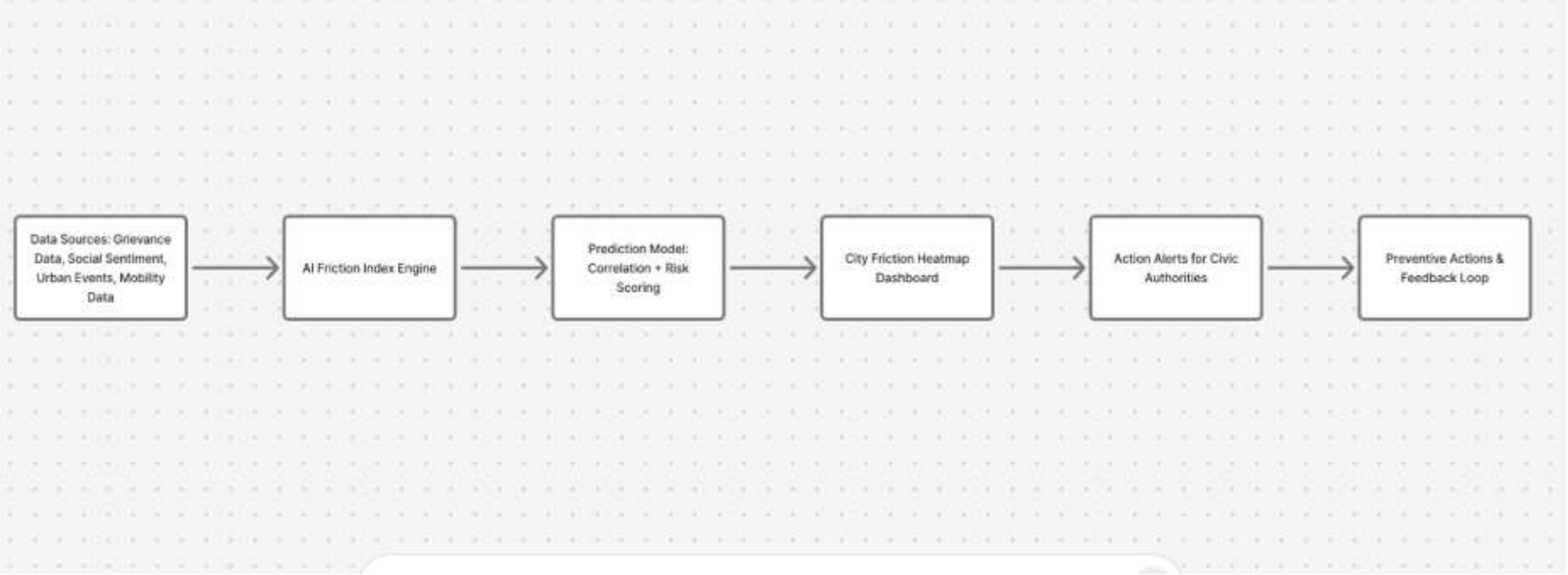
5. Analytics Dashboard

Tracks recurring conflict patterns, helping urban planners identify root causes and long-term prevention strategies.

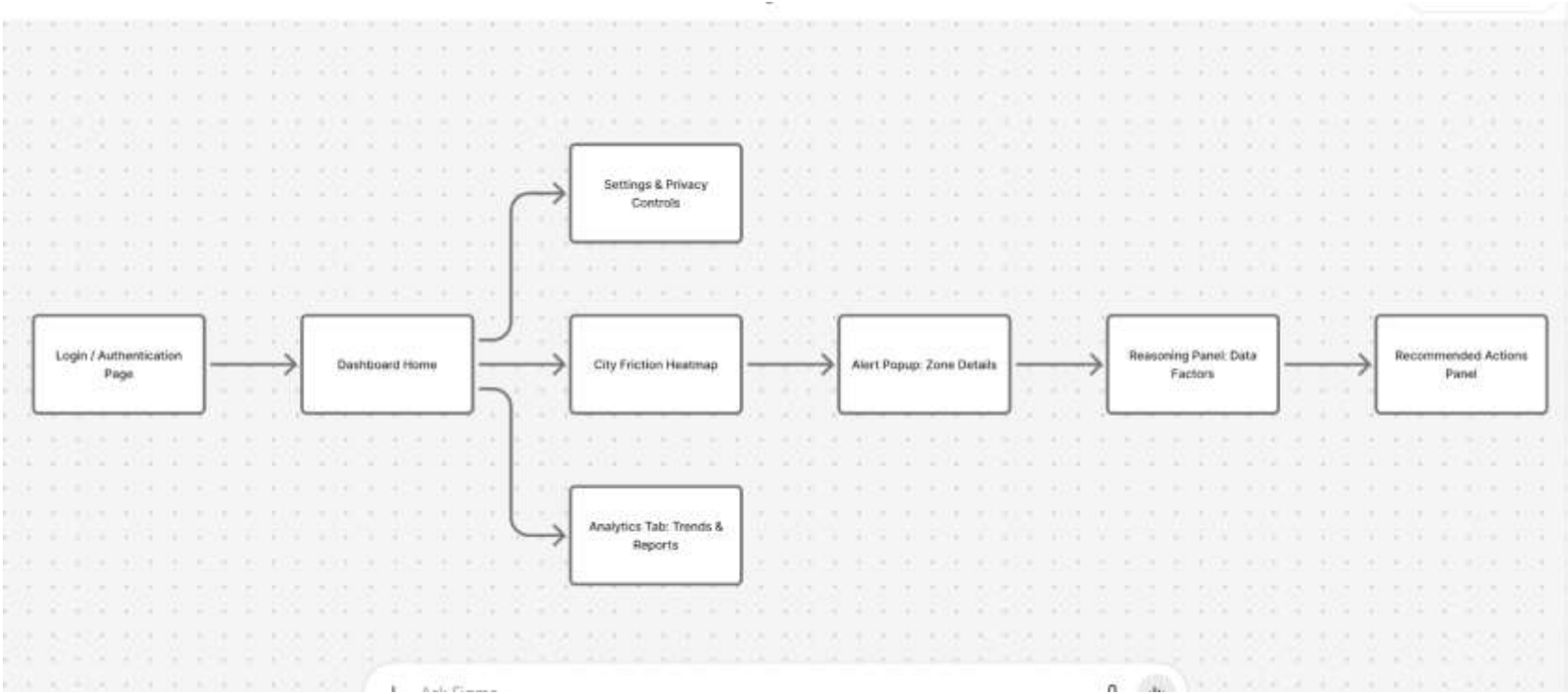
6. Ethical & Privacy-First Design

Uses only aggregated and anonymized data, ensuring no personal tracking or misuse of information.

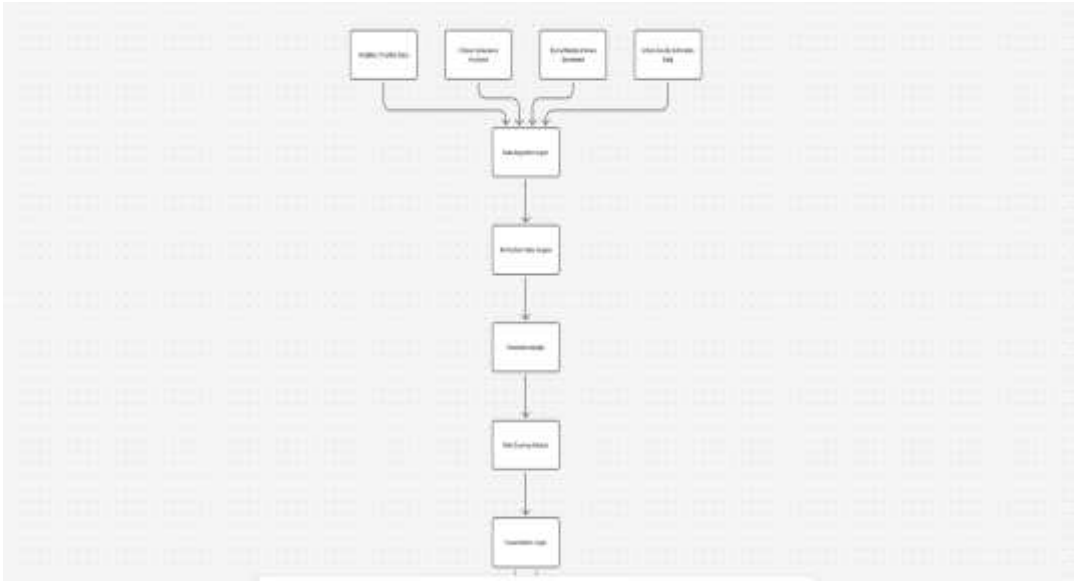
Process flow diagram or Use-case diagram

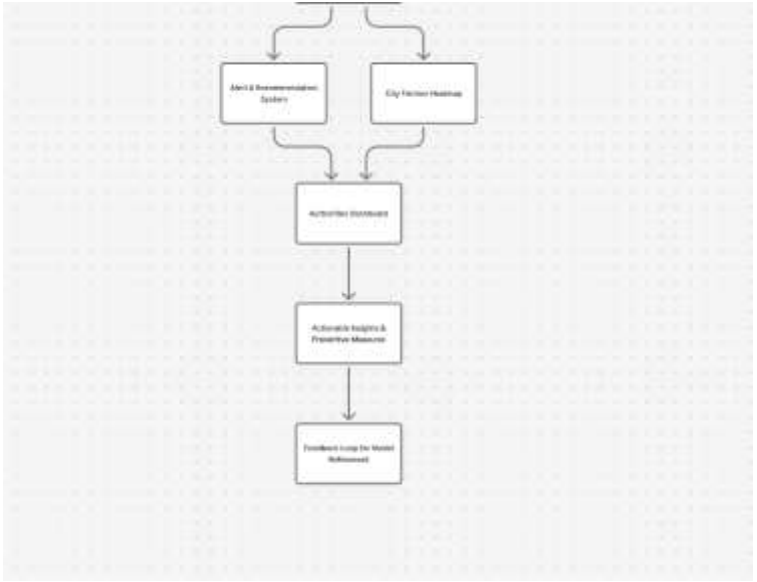


Wireframes/Mock diagrams of the proposed solution (optional)



Architecture diagram of the proposed solution





Technologies to be used in the solution:

AI & Machine Learning:
Python (Scikit-learn, TensorFlow): For predictive modeling and correlation analysis.
Natural Language Processing (NLP): Sentiment analysis on news and social data.
Explainable AI (XAI): Transparency in predictions and reasoning.
Backend Development:
Flask / FastAPI: Lightweight Python frameworks for API integration and model serving.
Pandas, NumPy: Data preprocessing and analytics.
Frontend & Visualization:
React.js: Interactive user interface for dashboards.
Leaflet.js / Mapbox API: Dynamic city heatmap visualization.
Plotly / Chart.js: Analytics and trend visualization.
Infrastructure & Deployment:
Docker: Containerized deployment.
Render / Heroku / AWS: Cloud hosting for the prototype.
GitHub: Version control and collaboration.
Data & Ethics:
Anonymization Filters: Privacy-preserving data handling.
Secure APIs: HTTPS and role-based access.
Audit Logging: Transparency and compliance tracking

Estimated implementation cost (optional):

Prototype Phase: ₹25,000 – ₹50,000 (for cloud compute, hosting, and data storage)
Scaled Deployment (City-Wide): ₹5–10 Lakhs depending on API integrations and real data availability

Add as per the requirements for the hackathon:

Hackathon Readiness & Future Potential

Innovation Impact

Project Aegis redefines governance a by shifting from reactive complaint management to predictive conflict prevention.

Social & Civic Relevance

Enhances citizen satisfaction through proactive service delivery.
Reduces the burden on law enforcement and civic bodies.
Prevents small disputes from snowballing into major civic unrest.

Scalability & Future Vision

Scalable across multiple cities and departments (water, transport, policing).
Future integration with IoT sensors and smart city APIs for real-time updates.
Potential collaboration with municipal corporations and smart city programs.

Collaboration Opportunities

Can be integrated with existing grievance portals (CPGRAMS, SmartCity dashboards).
Offers APIs for state or central government dashboards.

Google Cloud H2S

Gen AI Exchange Hackathon

Thank you