Smart City AI Projects - 10 Point Presentation

1. Traffic Light Optimizer

1. Objective: Reduce traffic congestion using intelligent traffic light agents.

2. Uses rule■based logic or reinforcement learning for signal timing.

3. Takes real■time traffic flow as input.

4. Computes optimal green■time distribution.

5. Agents coordinate to balance traffic load across junctions.

6. Simulation compares before vs after optimization.

7. Produces average vehicle waiting time.

8. Generates delay reduction graphs.

9. Visualized using Streamlit + Plotly.

10. Demonstrates measurable improvement in traffic flow.

2. Garbage Collection Routing

1. Objective: Optimize garbage truck routes to reduce fuel and time.

2. Uses BFS or Dijkstra for shortest path planning.

3. City map is converted into a node■edge graph.

4. Agent identifies optimal route for each truck.

5. Avoids redundant paths to increase efficiency.

6. Calculates total route distance & travel time.

7. Compares baseline (manual routing) vs optimized routing.

8. Displays improvements using charts.

9. Integrates Streamlit for interactive demo.

10. Highlights savings in fuel, time, and manpower.