COLLEGE CODE   : 3105

COLLEGE NAME   : DHANALAKSHMI SRINIVASAN COLLEGE

OF ENGINEERING & TECHNOLOGY

DEPARTMENT   : COMPUTER SCIENCE & ENGINEERING

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DATE   : 10-05-2025

Completed the project named as,

URBAN PLANNING AND DESIGN

SUBMITTED BY,

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Phase 5: Project Demonstration & Documentation

Title: Urban Planning and Design

Abstract:

The Urban Planning and Design project aims to create sustainable, efficient, and well-structured urban environments through the application of planning principles, geographic data analysis, and modern design tools. This final phase consolidates the project into a comprehensive demonstration and documentation report. It showcases the planning methodology, design models, simulation results, and environmental impact assessments, with a focus on user-centric and eco-friendly urban layouts. The project emphasizes smart zoning, green infrastructure, transportation optimization, and the integration of digital planning tools like GIS and 3D modeling software. Visual plans, analysis outputs, and source files are included to illustrate the project's scope and impact.

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1. Project Demonstration

Overview:

This phase includes a demonstration of how urban planning models and tools were used to address modern city development challenges.

Demonstration Details:

- **Model Walkthrough:** Visual walkthrough of planning layouts and 3D models.

- **Zoning & Land Use Design:** Presentation of zoning maps, green areas, and infrastructure planning.

- **Transportation Design:** Traffic flow simulations, public transport routing, and accessibility modeling.

- **Sustainability Elements:** Demonstration of energy-efficient designs, green spaces, and eco-analysis.

- **Tool Integration:** Use of GIS, AutoCAD, SketchUp, and planning software for urban simulation.

Outcome:

Stakeholders will understand how design decisions align with sustainable and livable urban development goals.

2. Project Documentation

Overview:

This section compiles the entire planning and design process, supported by visuals, technical tools used, and design rationale.

Documentation Sections:

● **Planning Framework:** Theoretical background, zoning policies, and regulatory considerations.

● **Design Models:** Technical layouts and models of proposed developments.

● **GIS Maps & Analysis:** Spatial data interpretations and demographic overlays.

● **User & Stakeholder Guide:** Interpretation of plans, usage instructions for digital models.

● **Environmental Impact:** Assessment reports covering green space, emissions, and water management.

Outcome:

Clear records of methodology and design justifications suitable for city council review or public presentations.

3. Feedback and Final Adjustments

Overview:

Feedback from planning professionals, stakeholders, and simulated users is collected for refinement.
Steps:

- **Feedback Collection:** Surveying urban planners and city officials.

- **Design Revisions:** Adjustments made to address usability, sustainability, or traffic efficiency

- **Simulation Testing:** Final tests of traffic, sunlight, and drainage models.

Outcome:

A more resilient and citizen-friendly urban plan ready for implementation or further expansion.

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4. Final Project Report Submission

Overview:

This is the concluding report highlighting the phases, outputs, and design rationale of the urban project.

Report Sections:

- **Executive Summary:** Overview of project goals and key designs.

- **Planning Stages:** Step-by-step phases from concept to digital design.

- **Challenges & Solutions:** Issues in zoning, modeling, or stakeholder alignment and how they were resolved.

- **Outcomes:** Summary of urban design outputs and simulation results.

Outcome:

A professional report ready for academic evaluation or submission to a planning authority.

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5. Project Handover and Future Works

Overview:

This section outlines how the project can evolve and be maintained or expanded.

Handover Details:

- **Next Steps:** Suggestions like integrating smart city features, increasing model detail, or public engagement tools.

Outcome:

Project handed over with a roadmap for implementation, maintenance, or academic research.

PROGRAM :

```html
<!DOCTYPE
html>    <html>
<head>

  <title>Urban Planning Tool</title>
  <meta charset="utf-8" />
  <link rel="stylesheet"
href="https://unpkg.com/leaflet@1.9.3/dist/leaflet.css" />
  <style>
    #map { height: 90vh; width: 100%; }
    .info { padding: 10px; }
  </style>
</head>
<body>
  <h2>Urban Planning and Design - Zoning Map</h2>
  <div id="map"></div>
  <div class="info" id="info"></div>

  <script
src="https://unpkg.com/leaflet@1.9.3/dist/leaflet.js"></script>
  <script>
    const map = L.map('map').setView([12.9716, 77.5946], 13); //
Example: Bangalore

    L.tileLayer('https://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png', {
      attribution: 'Map data © OpenStreetMap contributors',
    }).addTo(map);

    const zones = {
      residential: [],
```

```
      commercial:    [],
      greenspace: [],
    };

    function addZone(latlng, type) {
      const color = {
        residential: 'blue',
        commercial: 'red',
        greenspace: 'green'
      }[type];

      L.circle(latlng, { radius: 100, color }).addTo(map);
      zones[type].push(latlng);
      updateInfo();
    }

    map.on('click', function(e) {
      const type = prompt("Zone type?
(residential/commercial/greenspace)");
      if (['residential', 'commercial', 'greenspace'].includes(type)) {
        addZone(e.latlng, type);
      } else {
        alert("Invalid zone type.");
       }
      });

    function updateInfo() {
      document.getElementById('info').innerHTML =
        `<strong>Zoning Summary:</strong><br>
         Residential: ${zones.residential.length}<br>
         Commercial: ${zones.commercial.length}<br>
         Green Space: ${zones.greenspace.length}`;
    }
  </script>
</body>
</html>
```