A DYNAMIC WEB-MAPPING SOLUTIONS FOR HEALTHCARE PLANNING

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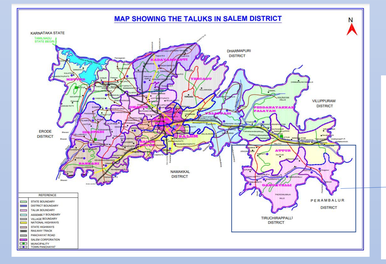
UNDER THE GUIDANCE : Dr. P. SHOBA, PROFESSOR, IRS

INTRODUCTION

- Gangavalli Taluk faces healthcare accessibility challenges due to geographic and socio-economic factors.
- GIS maps healthcare facilities, analyzes service gaps, and visualizes accessibility patterns for better planning.
- An interactive portal is created to display healthcare locations, identify underserved areas, and assist in route optimization and resource allocation.

STUDY AREA

Location:	Gangavalli Taluk, Salem district, Tamil Nadu, India.
Coordinates:	11.48° North, 78.65° East.



OBJECTIVES

1.To develop an interactive web-based GIS portal for real-time visualization of hospital locations and patient information for Gangavalli Taluk.

2. To implement shortest-route mapping techniques to help patients efficiently locate the nearest hospital and access appropriate medical specialists.

3. To create optimized bus stop locations along shortest routes near hospitals to improve public transportation accessibility for patients, especially during emergencies.

4. To generate Buffer around existing hospitals to identify served areas.

5. To provide policymakers with data-driven insights to support strategic hospital planning and promote healthcare distribution.

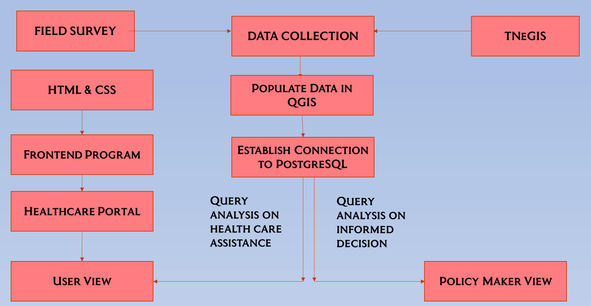
DATA PRODUCTS

- **Geotagged Data:** Collected through field surveys to record the exact locations of healthcare facilities.
- **Taluk Shapefile:** Obtained from Survey of India, providing administrative boundaries for mapping.
- **Network Data:** Sourced from OpenStreetMap (OSM) to map roads and enable route analysis.

NEED FOR STUDY

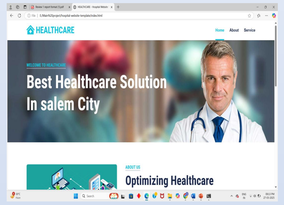
- **Access Issues:**
  Patients in Gangavalli Taluk face delayed treatment due to limited nearby medical facilities.
- **Need for Spatial Data:**
  Policymakers require spatial data to identify gaps and plan hospital locations.
- **GIS for Decision Support:**
  GIS maps hospitals, patient density, and service gaps to aid healthcare planning.
- **Route Optimization:**
  Shortest-route navigation improves emergency response and reduces patient travel time.

METHODOLOGY

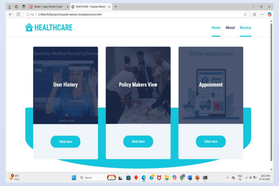


RESULTS

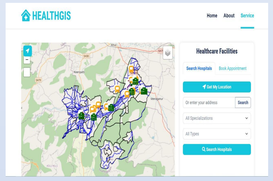
USER VIEW IN WEB PORTAL



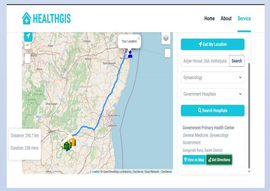
Healthcare portal



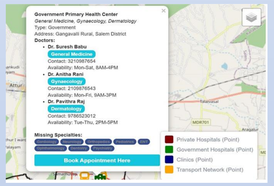
webpage view



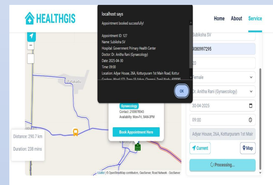
service zones



Shortest route

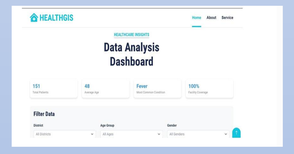


Hospital details



Appointment page

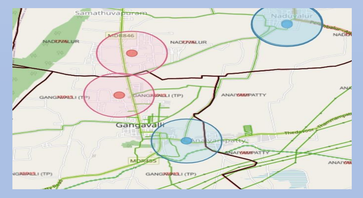
POLICY MAKER VIEW IN WEB PORTAL



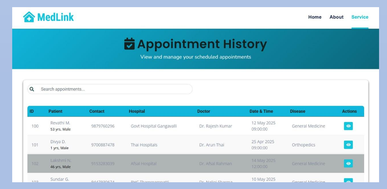
policy maker page_1

policy maker page_2

policy maker page_3



policy maker page_Buffer zone



Appointment history

CONCLUSION

- **GIS for Healthcare Planning:**
  The project used GIS to map healthcare facilities, identify underserved areas, and suggest new hospital locations using buffer zones.
- **Web Portal & Route Optimization:**
  An interactive web GIS portal provided real-time data visualization and shortest-route mapping, enhancing patient navigation and emergency response.