Student Name: Monika. R   **Reg. No: 192324281**

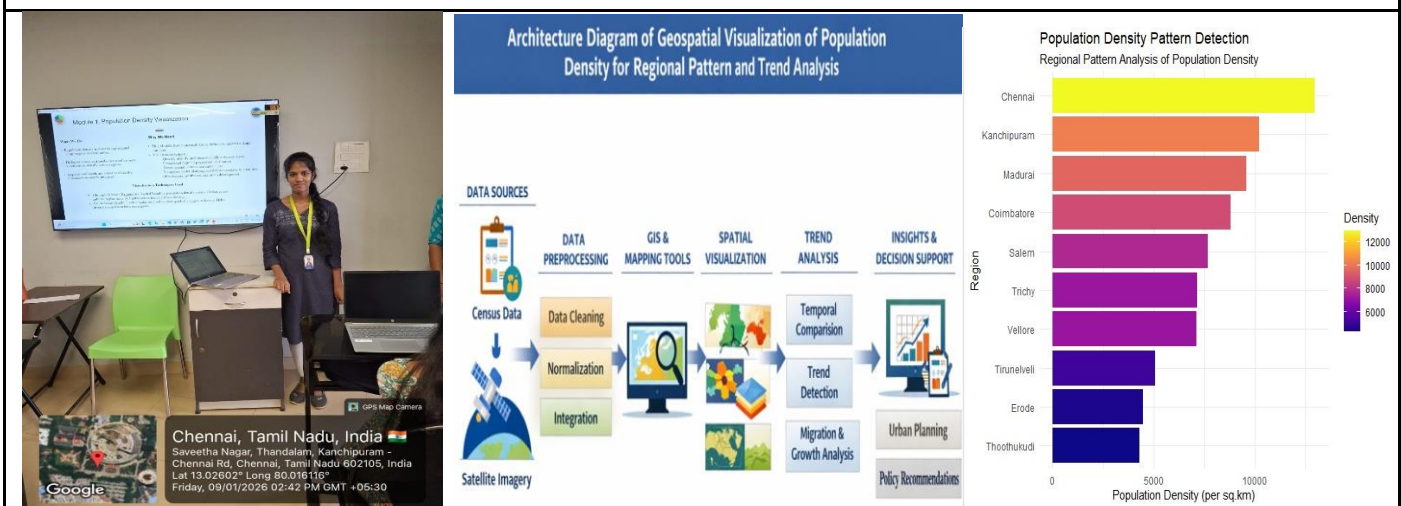**Course Code**: DSA0613   **Slot: A**

Course Name: Data Handling and Visualization for Data Analytics Course

Faculty: Dr. Kumaragurubaran T & Dr. Senthilvadivu S

Project Title: Geospatial Visualization of Population Density for Regional Pattern and Trend Analysis

Module Photographs:

Project Description:

      The Population Density Pattern Detection module is a key component of the capstone project "Geospatial Visualization of Population Density for Regional Pattern and Trend Analysis", focusing on identifying and interpreting spatial variations in population distribution across different geographic regions. This module analyzes population density data integrated with geospatial boundary layers to detect patterns such as high-density urban clusters, moderate suburban zones, and sparsely populated rural areas. Population density is calculated as population per unit area and mapped using geospatial visualization techniques, particularly choropleth mapping with appropriate classification methods to enhance pattern recognition. The generated visual outputs support comparative regional analysis and improve understanding of how population is distributed geographically. This module plays an important role in transforming raw demographic data into meaningful spatial insights, which can assist urban planners, policymakers, and researchers in decision-making related to infrastructure development, resource allocation, and regional planning.

Student Signature   **Guide Signature**