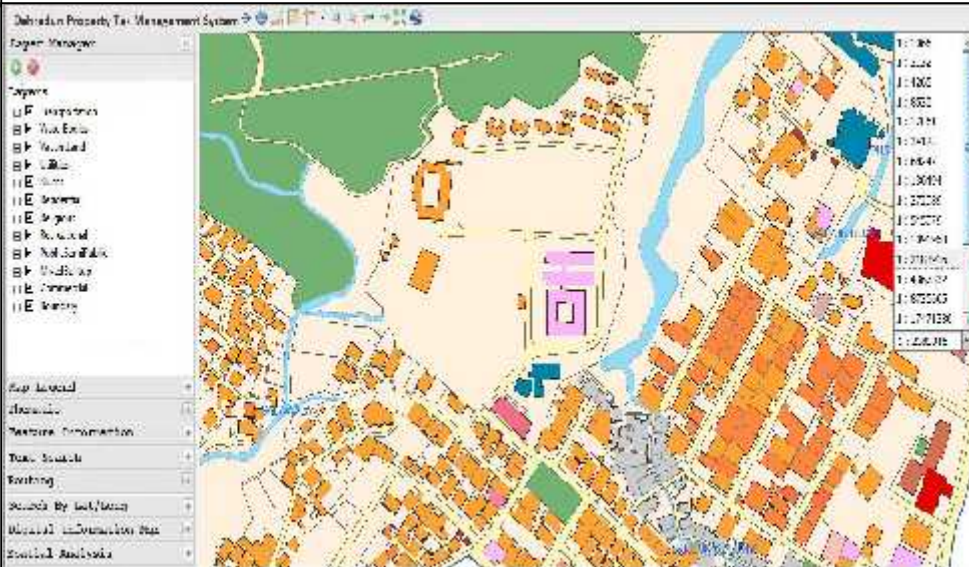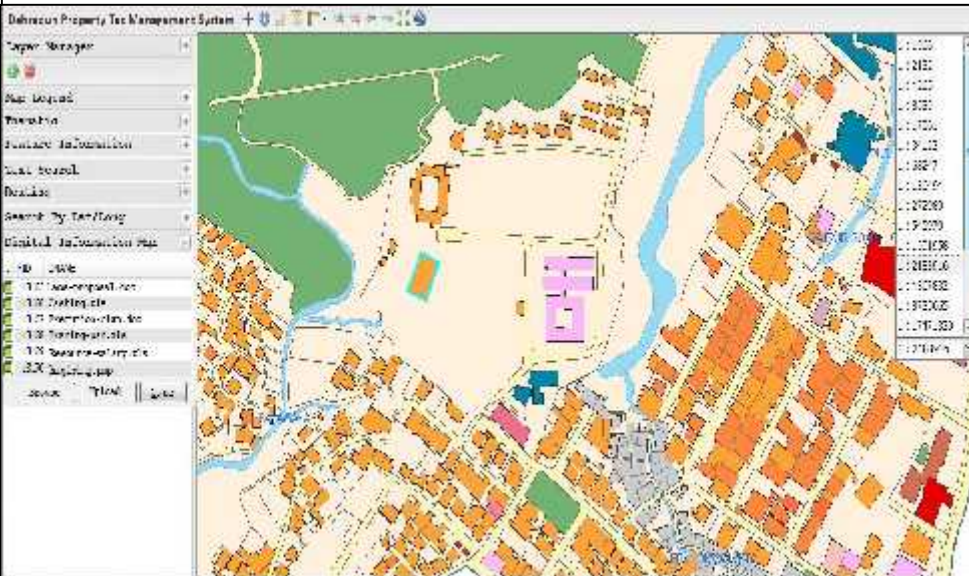# Geo Spatial Web Application

Detailed Land Use Land Cover Map

Digital Information Manager

Spatial Analysis

Geo Spatial Web Applications will be designed to modify/update, edit, analyze and manage the spatial and non-spatial data generated on various scales.

Mapping User Interface

The Mapping User Interface will enable browsing, editing and analyzing spatial and non-spatial data. The user interface will consist of the following modules:

- Map Navigation Interface
- Map Editing Tool bar
- Document Manager
- Raster Data Support
- Query Builder
- Spatial Analysis
- Search by feature Class
- Text Search
- Custom Features

Map Navigation Interface

This will be a set of default GIS application functionalities and shall be available to any one who logs in to the Spatial Decision Support System. These functionalities enable viewing, navigation, accessing and querying of spatial and non-spatial data. The various tools that will be available to the user are listed below:

- Navigation
- Legend
- Layer Manager
- Information Viewer (Attribute)
- Feedback
- Search

Map Spatial Editor Tools

This application "Map Spatial Editor Tools" will contain all necessary tools for editing spatial and non-spatial data. Access rights to this application will be provided to CBIR users. Data Editing Tools will be used to add delete and modify spatial and non-spatial data by different user department. A user can store information about topological elements and geometry layers in PostGis extension of PostgreSQL database Spatial tables and metadata views. Topological relationships include such relationships as contains, inside, covers, covered by, touches and overlap with boundaries

Map Legend

Transportation
- Transportation

Water Bodies
- WaterBodies

VacantLand
- Vacant Land

Utilities
- Electric/Sub-station
- Others
- Pump House
- Slums

Residential
- 1 Floor Building
- 2 Floor Building
- 3 Floor Building
- 4 Floor Building

Recreational
- Recreational

Religious
- Religious

PublicSemIPublic
- Auditorium
- Educational Facilities
- Govt. and Semi Govt. Offices
- Medical Facilities
- Police Chowki
- Post Office
- Mixed Builtup

Commercial
- Commercial Others
- Community Center
- Parking area
- Shopping Centers
- Hotel
- Retail and General Business
- Boundary

Architecture of Geo Spatial Application

Text Search   Query Builder

Document Manager

Document manager is a catalog of various digital document that were associated by users over a period of time to various features. This tool provides an interface to view, and retrieve an associated document with spatial feature. It gives users a choice by listing down all the documents associated to a particular feature class. The user can see the document and also locate the feature on map to which it is associated or the other way round. The highlighting features of the document feature are as listed below:

- It provides a feature class wise list-view of all associated documents
- The use can view the associated document
- It facilitates the user to highlight the feature to which this document has been attached/ linked.

Spatial Analysis Tool

PostgreSQL- platform natively provides functions and procedure for spatial analysis such as classification, binning, association and spatial correlation to enable:

- Discovering hidden associations between different data attributes,
- Classification of data based on some samples,
- Clustering to identify intrinsic patterns

The spatial analysis and mining features in PostGis extension of PostgreSQL database let you exploit spatial correlation by using the location attributes of data items in several ways:

- 1. For binning (discretizing) data into regions (such as categorizing data into northern, southern, eastern, and western regions),
- 3. For identifying collocated data items (such as water distribution points and residential houses)
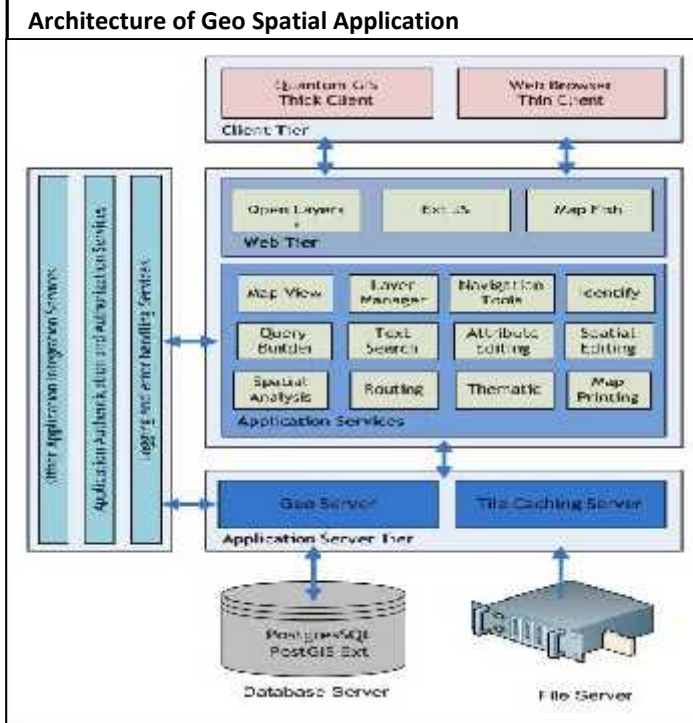
Text Search

Basically this feature allows the user to search based on search criteria entered by user & predefined classification. System will also facilitate the user to zoom to selected feature from search list on map canvas.

Query Builder

This facilitates the user to execute the query on non spatial attributes of any selected data set. User can build the complex query in nature using database operator like (and ,or, less than, greater than, equal etc) and execute on the selected database. System will provide the list of feature from selected database those are matching with query conditions in tabular form. This tool also provides the coupe of other features like:-

Select single or multiple feature & press the Zoom to button from query Builder screen, system will zoom to map & highlight the selected features. User can export the selected features of result of query in predefined format like .xls & pdf.