

# Fundamental Concepts & Data Structure

SuperMap Software Co., Ltd.

The SuperMap logo features the word "SuperMap" in a white, italicized serif font. A thin white arc curves over the top of the letters "u" and "p". A small white dot is positioned at the end of this arc, above the letter "p".

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# Point

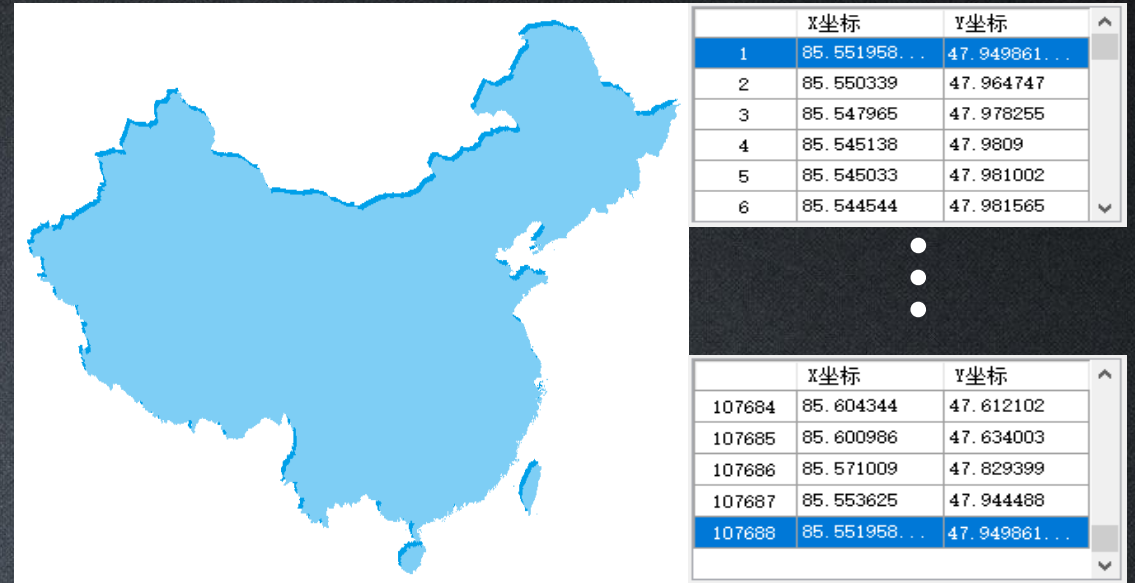
- Pinpointing a location on a map is possible using a latitudinal and longitudinal coordinate stored in the database.



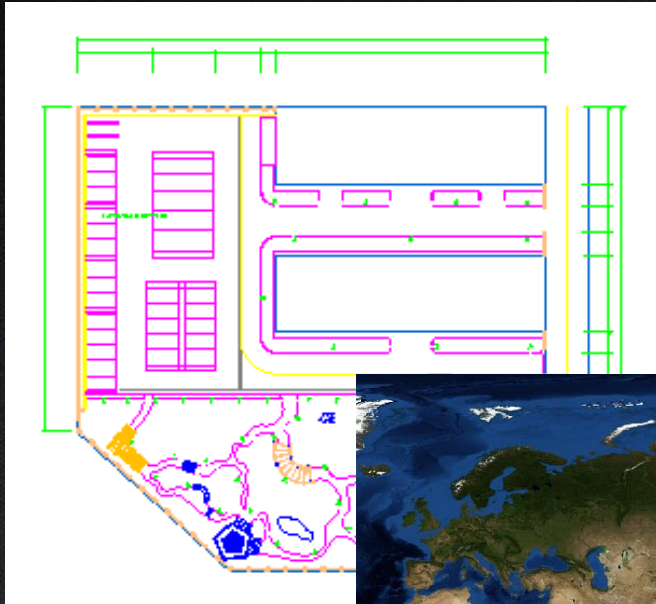
SmID	SmX	SmY	CAPITAL_EN	COUNTRY_EN
170	116.388036	39.906189	Beijing	China

# Line & polygon

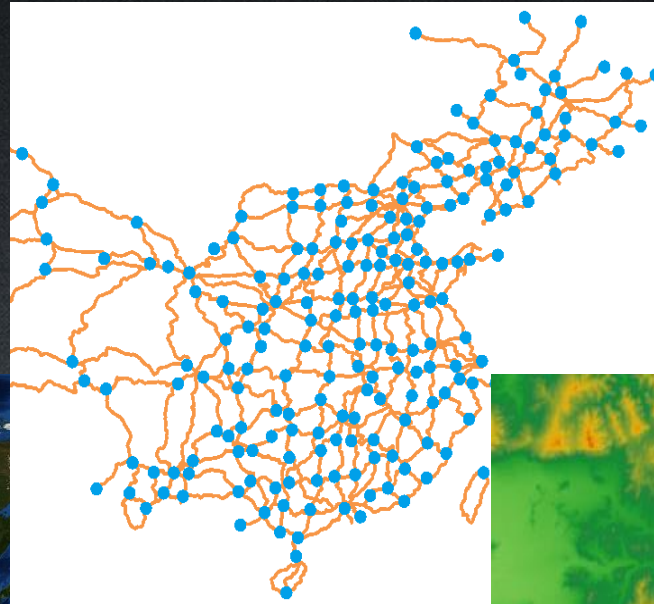
- A series of latitudinal and longitudinal data can be used to either draw separate lines on the map, or draw an entire country's boundaries



# More types of data



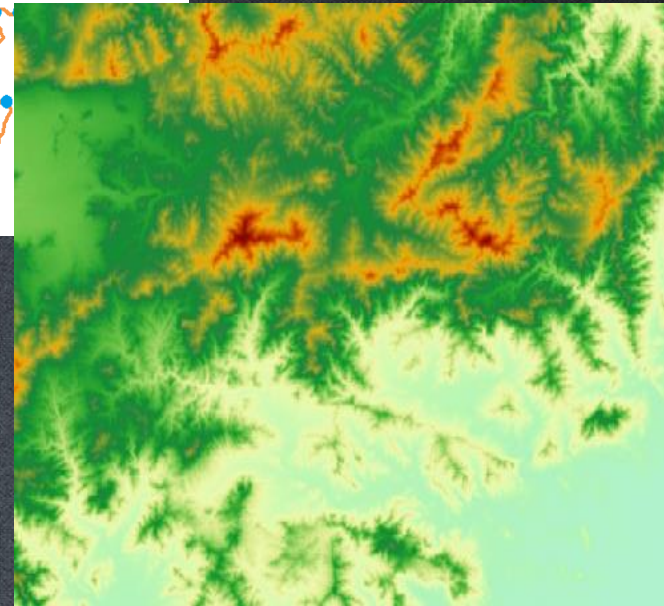
CAD Data



Network Data



Image Data

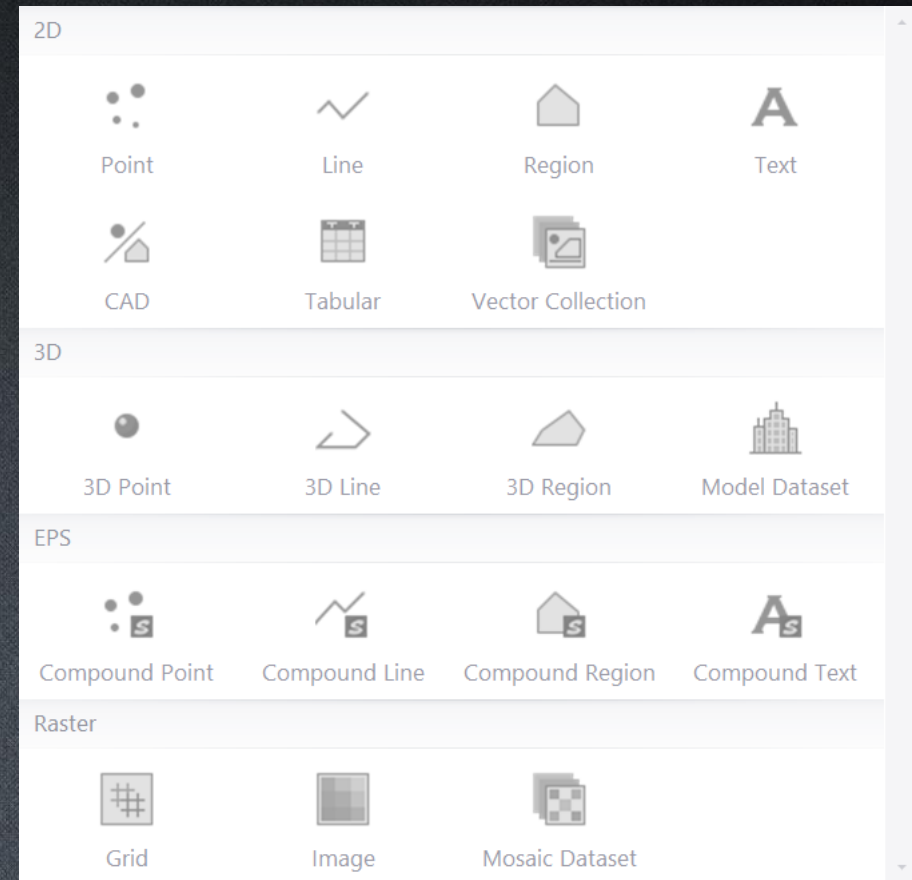


Raster Data



# Dataset

- Definition:
  - A dataset is a collection of similar types of data.
- Storage:
  - Datasets can be stored in a file or database datasource.

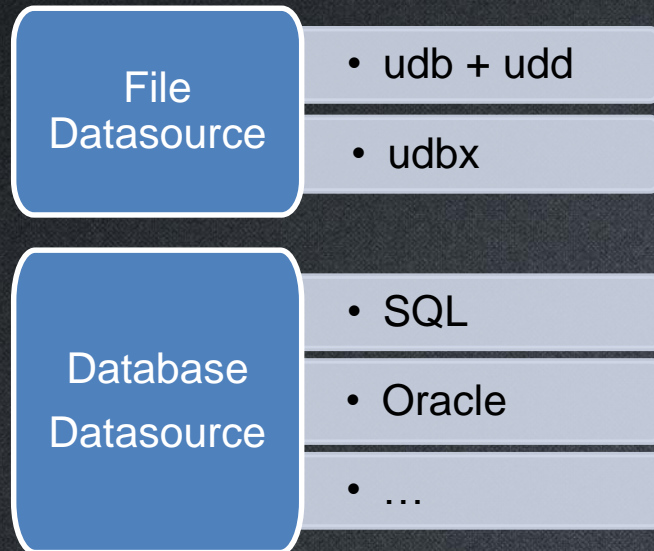


# Datasource

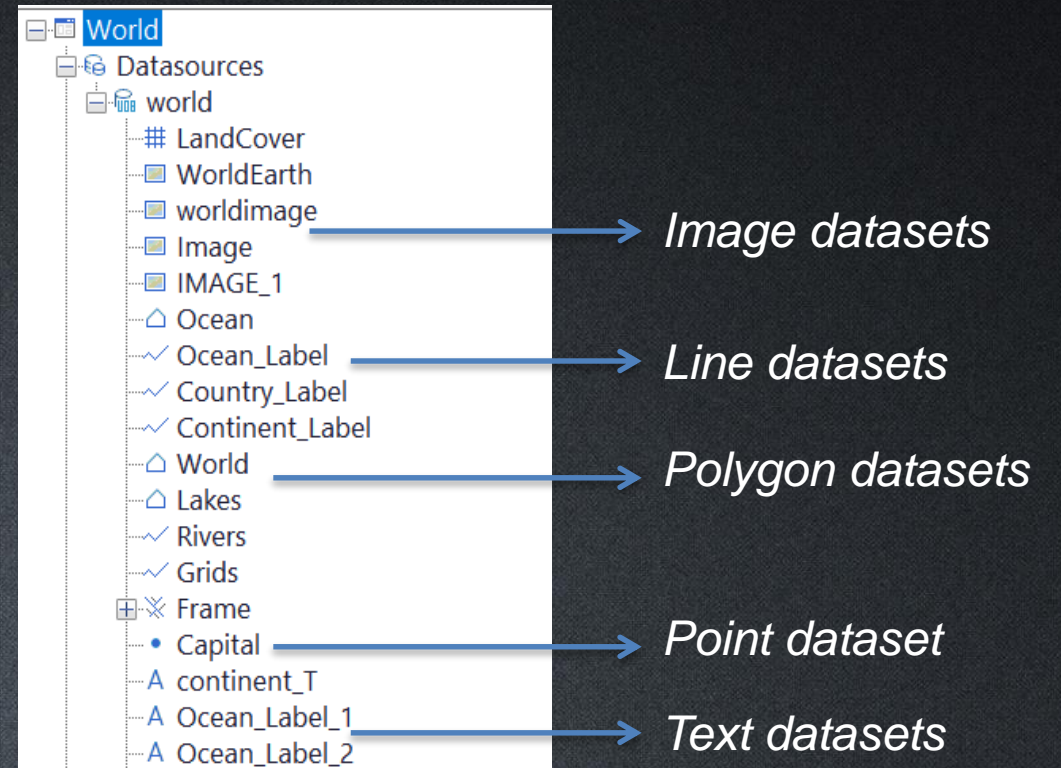
- Definition

- A datasource consists of various types of datasets and is the physical storage of spatial data.

- Storage



- Datasource & Dataset



# Workspace

- The workspace file stores the **connection information** of one or more datasources.
- The workspace file stores maps, layouts, scenes, resources and diagrams.

## Workspace Types

\*.smwu

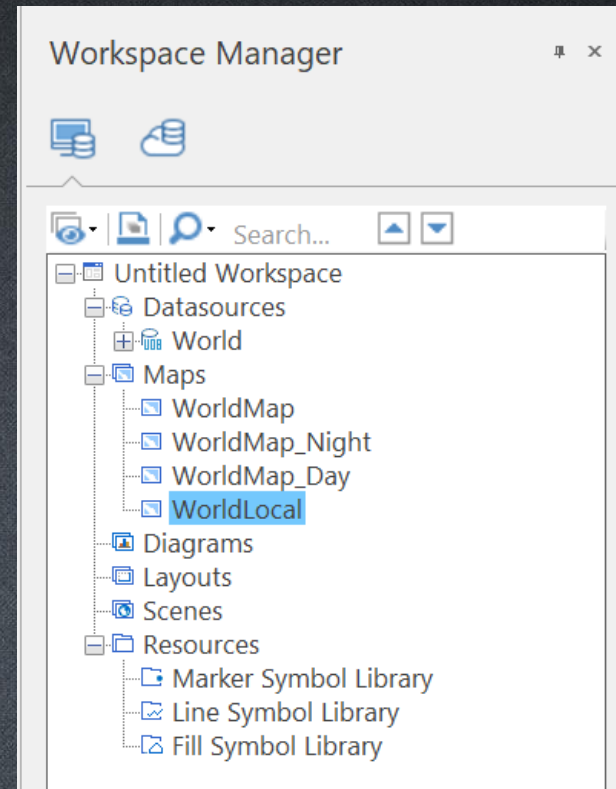
SQL

\*.sxwu

Oracle

...

*Attention: a file datasource cannot be opened in two workspaces at the same time.*



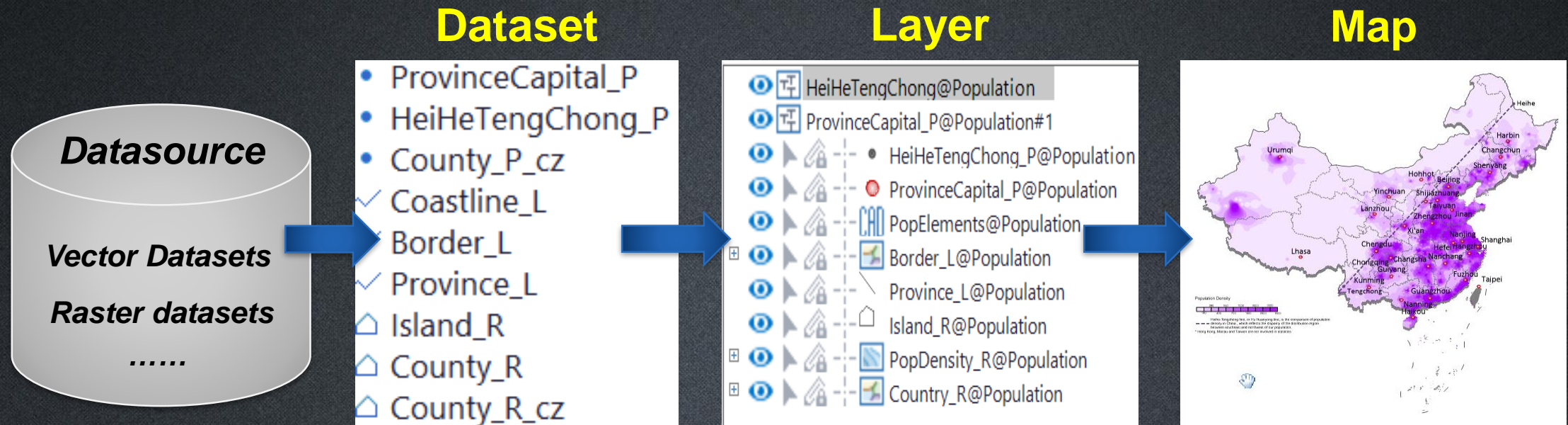
# Map

- Definition

- When one or more datasets are given a certain display style and are displayed in the same map window, they constitute a map.

- Storage

- The map is stored in the workspace so the workspace must be saved after the map.

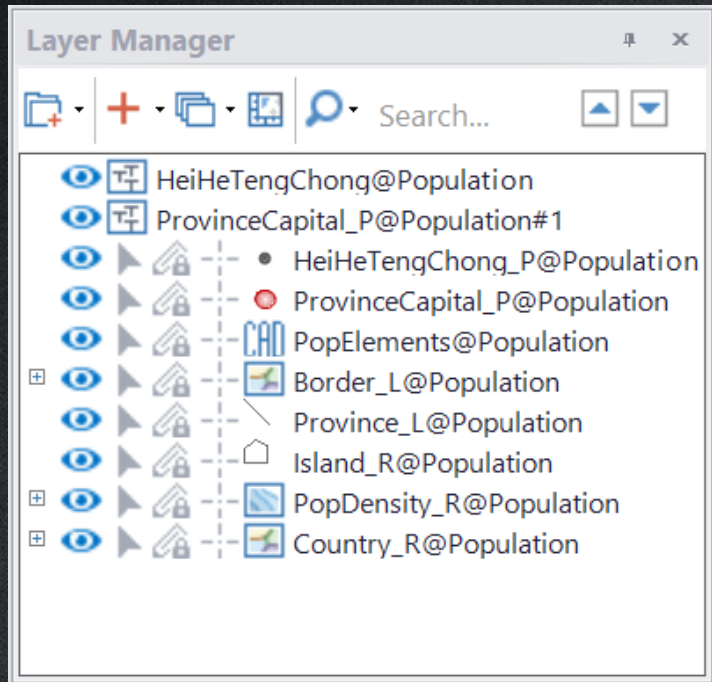




# Layer

- Definition

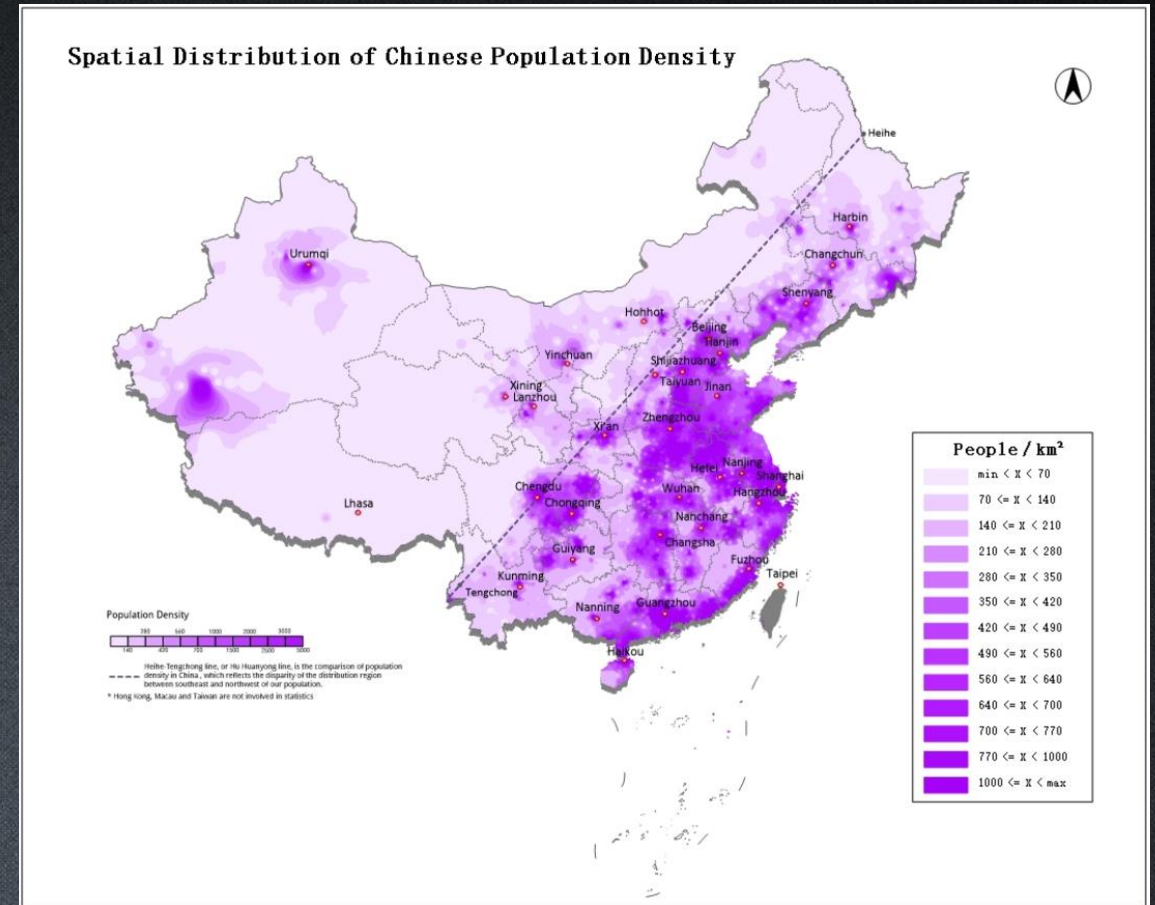
- Layers are a way of displaying datasets in a map window.



- Layers can be understood as **transparent canvases** which are put into stacks in the map window.
- **A dataset** can be added multiple times to the map window to render **multiple layers** of different styles.
- **if the data changes, the layers and maps connected with it will change too.**

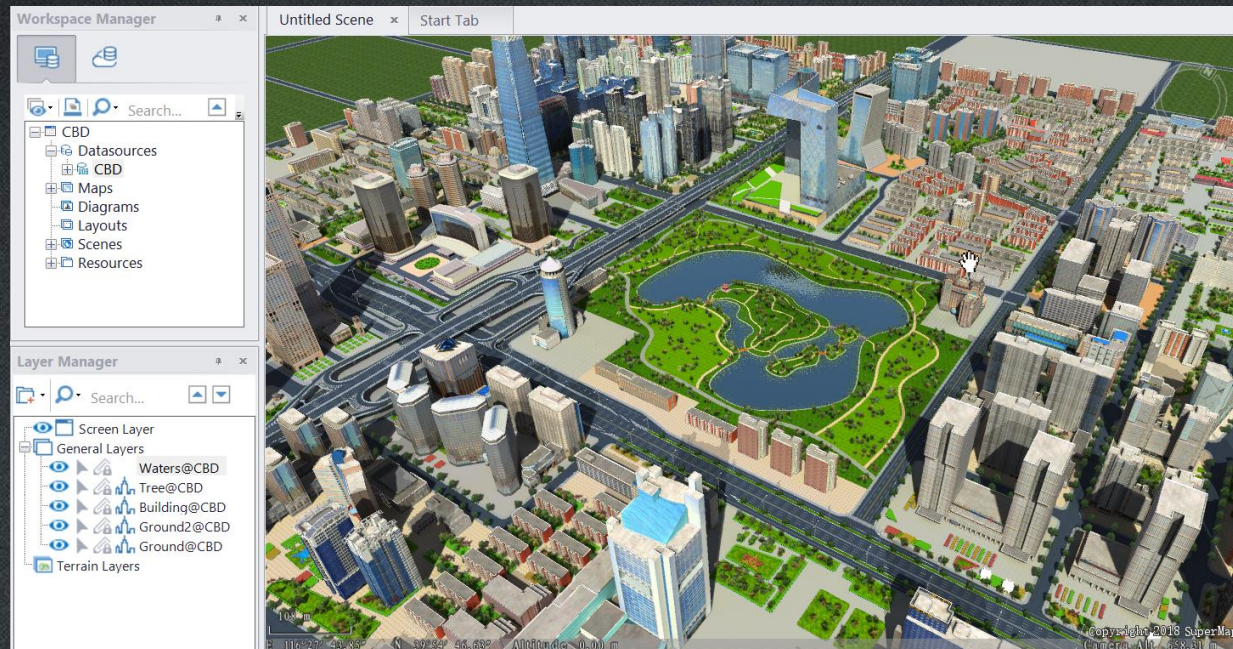
# Layout

- Definition
  - To print your map, it is required to create a layout which is composed of map(s) and elements such as the map name, legend, scale, north arrow, etc.
- Storage
  - The layout is also stored in the workspace



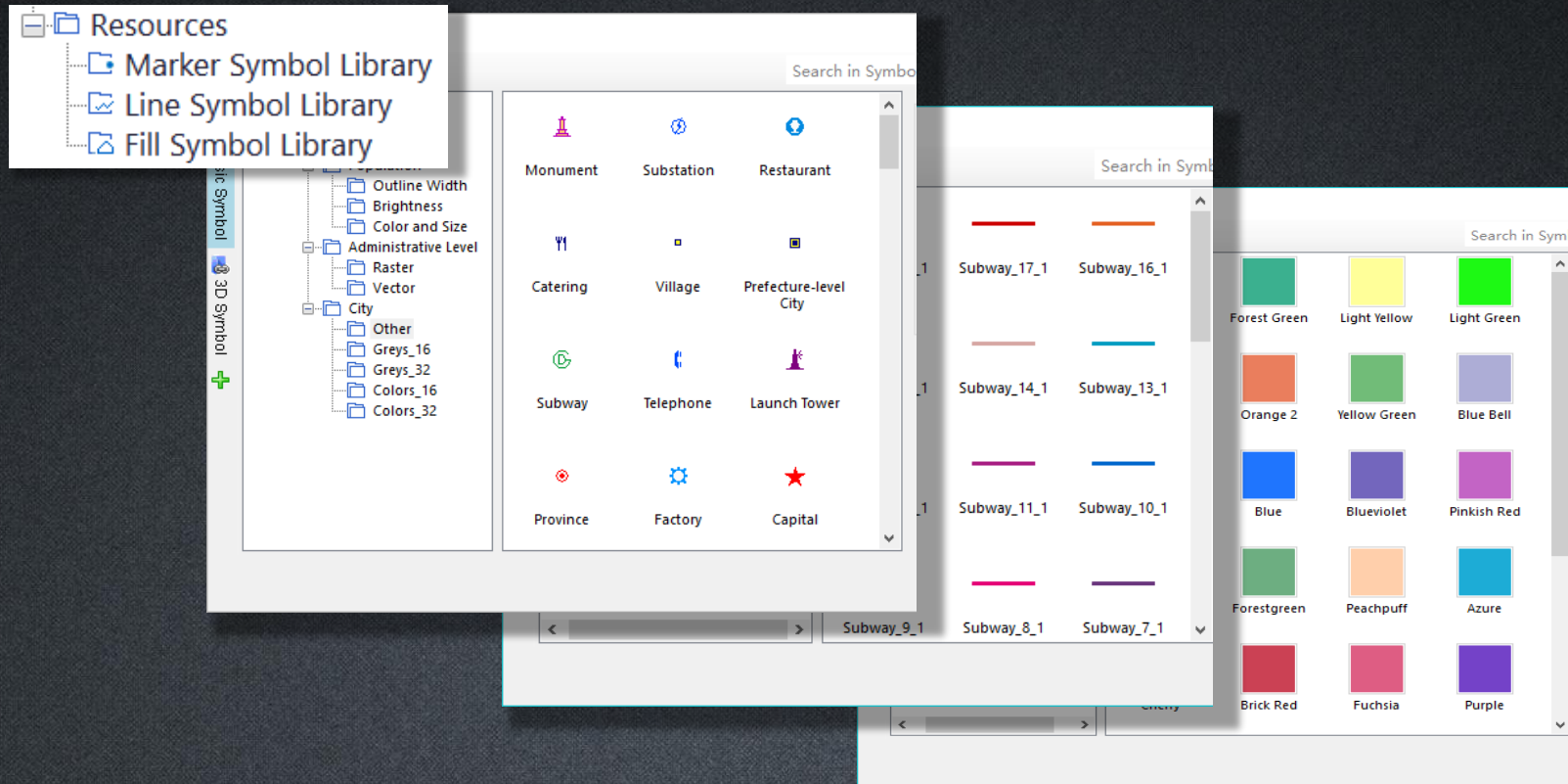
# 3D Scene

- Definition
  - We can add a combination of 2D and 3D data into 3D layers to organize a 3D scene.
- Storage
  - 3D scene is also stored in a file or database through the workspace.

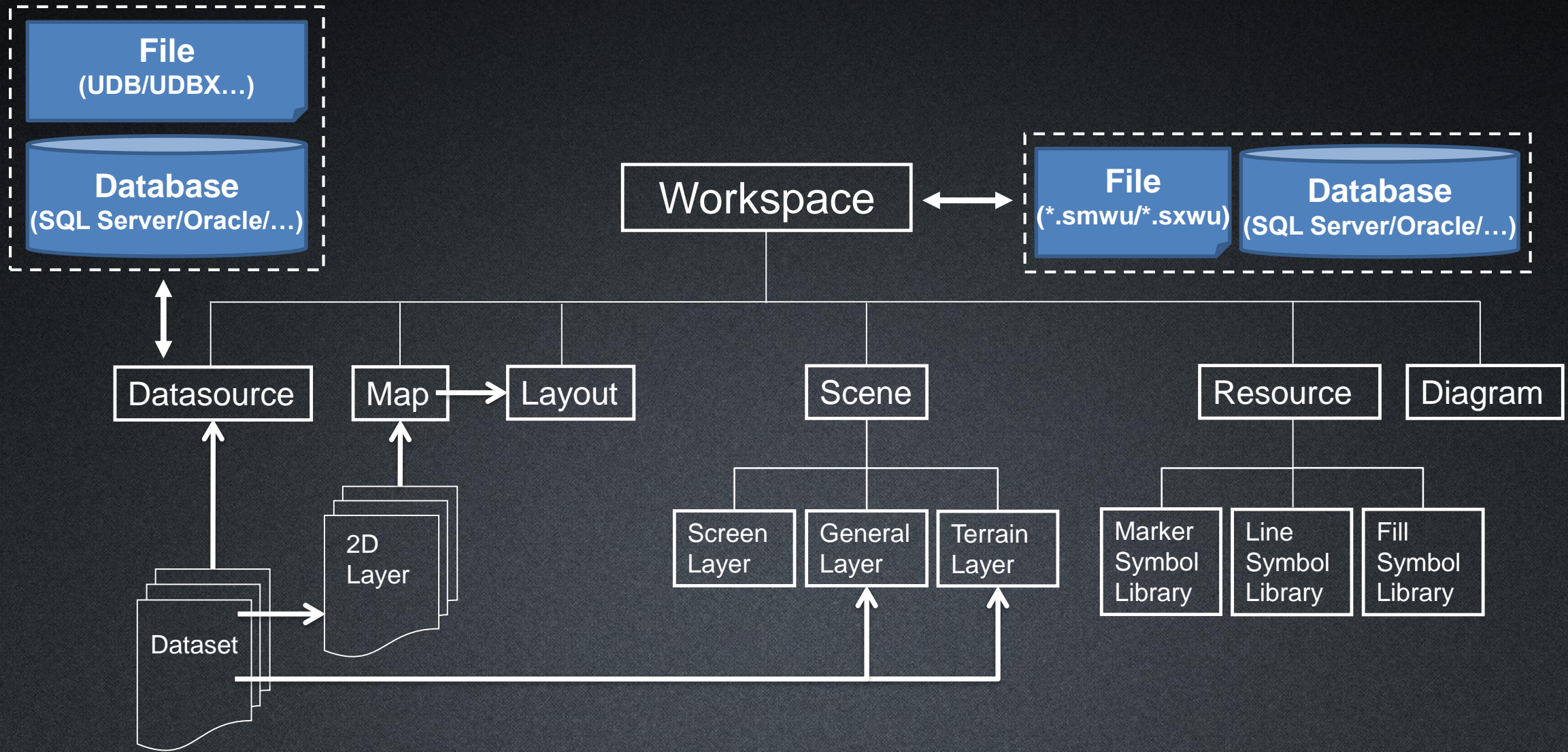


# Resource

- Resources primarily manage the symbol libraries used by maps and scenes in the workspace, including point symbol libraries, linetype libraries, and fill symbol libraries.



# Data Structure



# Thank You!

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