



جامعة المستقبل
AL MUSTAQBAL UNIVERSITY

كلية العلوم
قسم الانظمة الطبية الذكية
Lecture: (1)

Subject: Introduction to GIS Software (Practical Part)

Level: Second

Lecturer: MSc. Mustafa Yousif

GIS Software



GIS Software

There are plenty software of GIS :

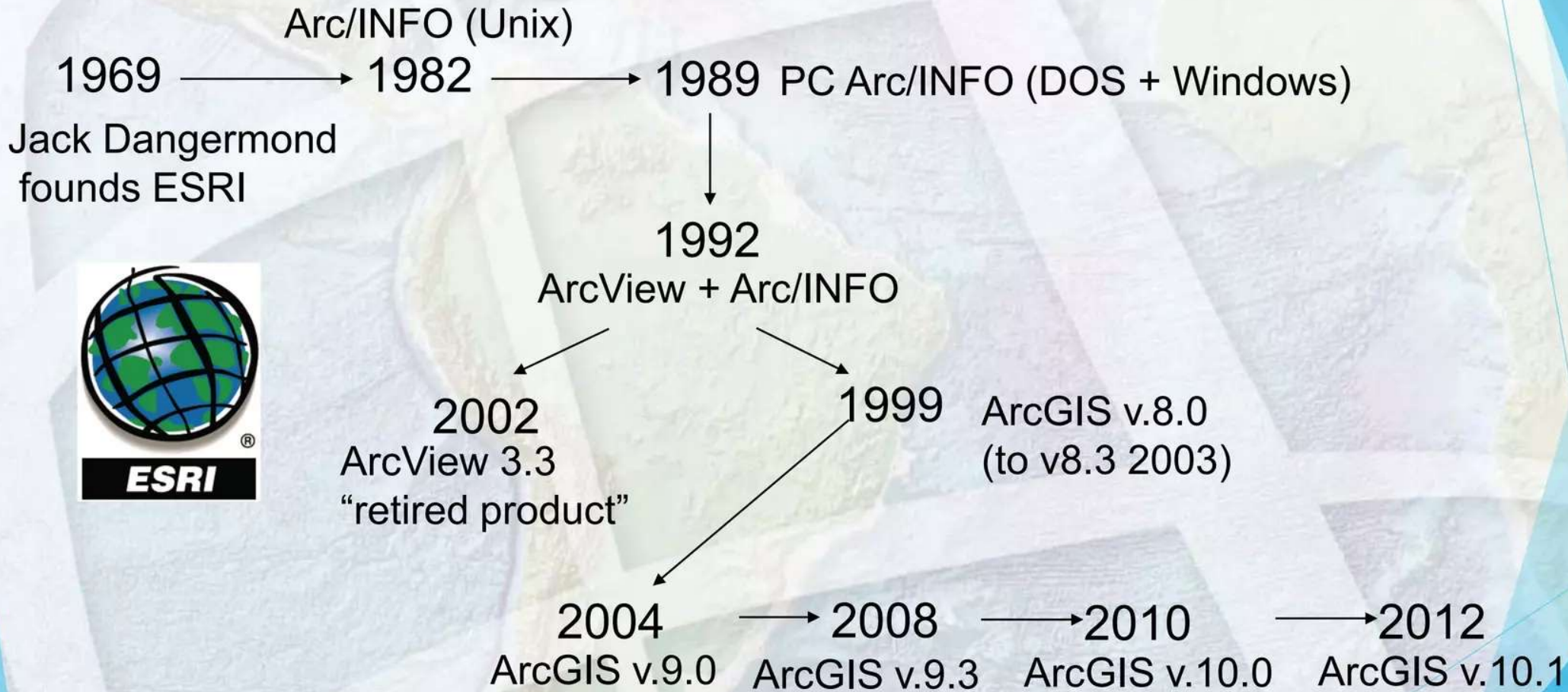
- ▶ ArcGIS
- ▶ QGIS
- ▶ GRASS GIS
- ▶ MapInfo
- ▶ InterGraph
- ▶ SAGA GIS
- ▶ JUMP GIS
- ▶ Bentley Map
- ▶ IGIS Framework
- ▶ TerrSet
- ▶ MIDAS
- ▶ And more....



esri

ArcGIS

History of ArcGIS



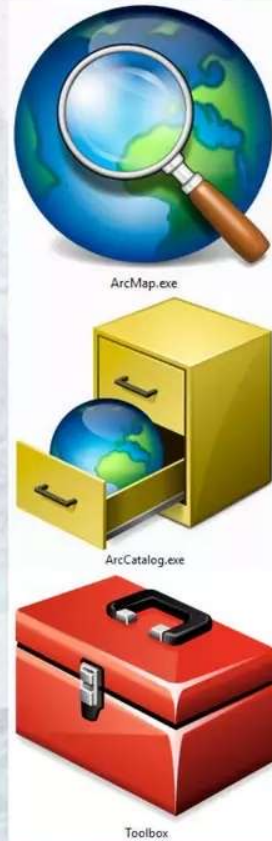
ArcGIS Desktop components

▶ ArcMap

▶ ArcCatalog

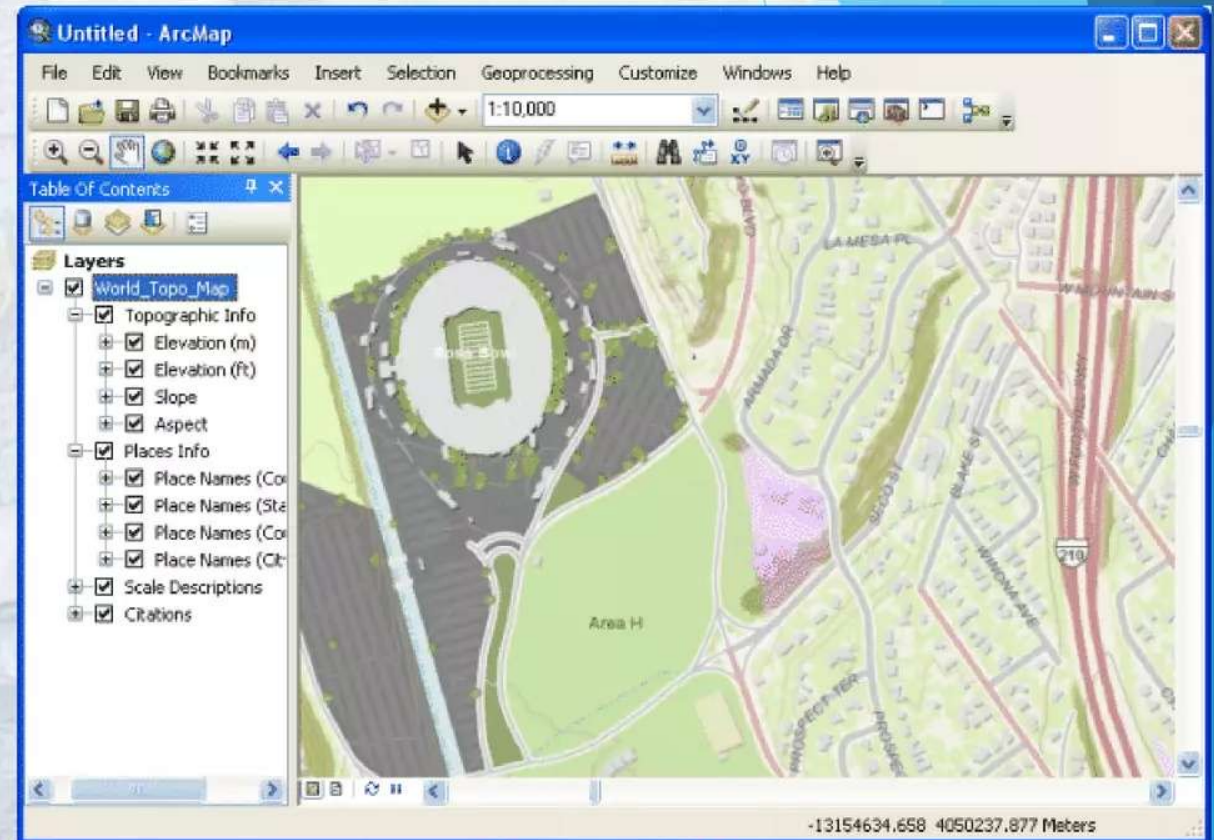
▶ ArcToolbox

▶ Extensions

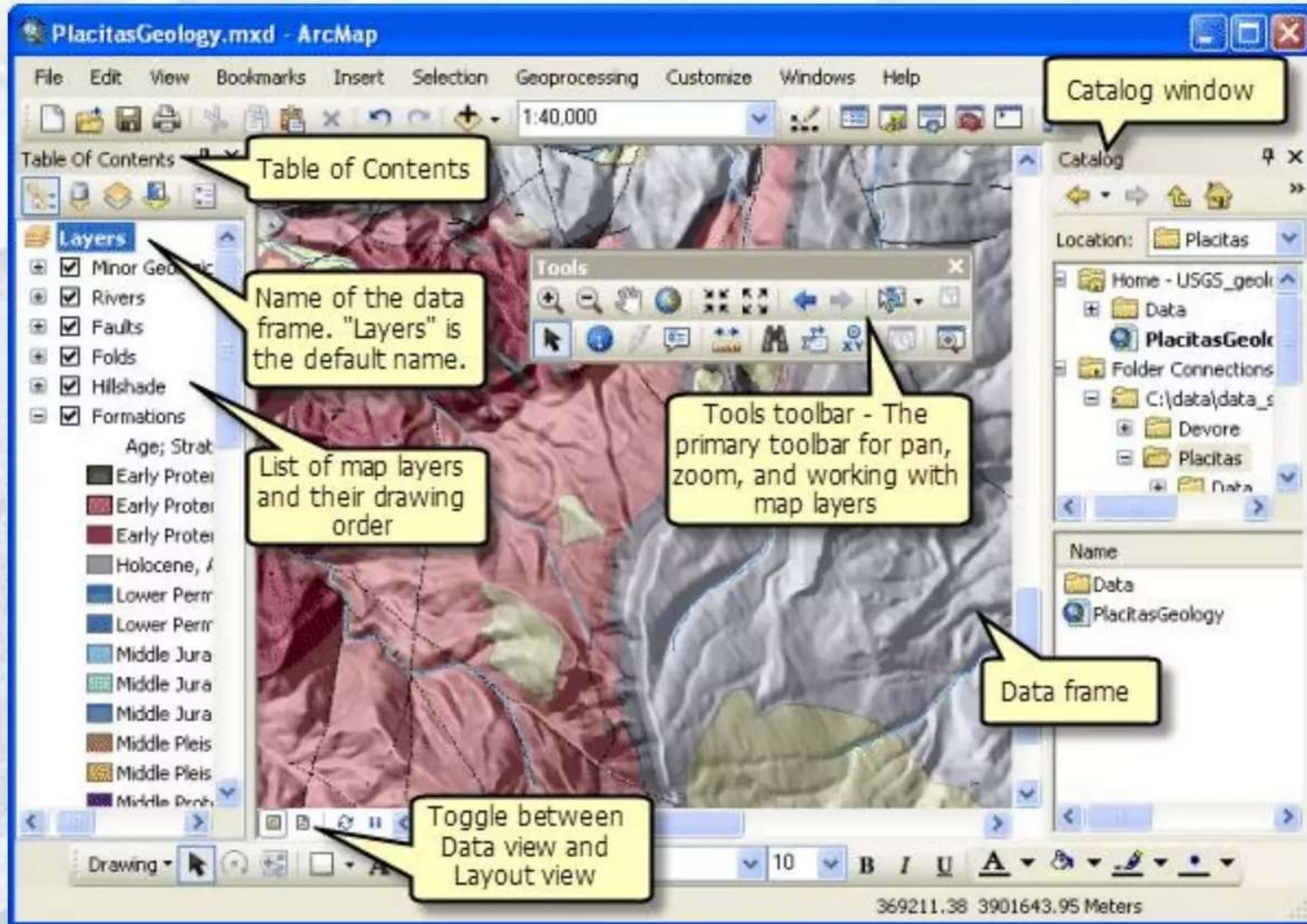


ArcMap

- ▶ ArcMap is the main application used in ArcGIS for Desktop for mapping, editing, analysis, and data management.
- ▶ ArcMap is used for all 2D mapping work and visualization.
- ▶ ArcMap displays map contents in one of two views:
 - ▶ Data view
 - ▶ Layout view

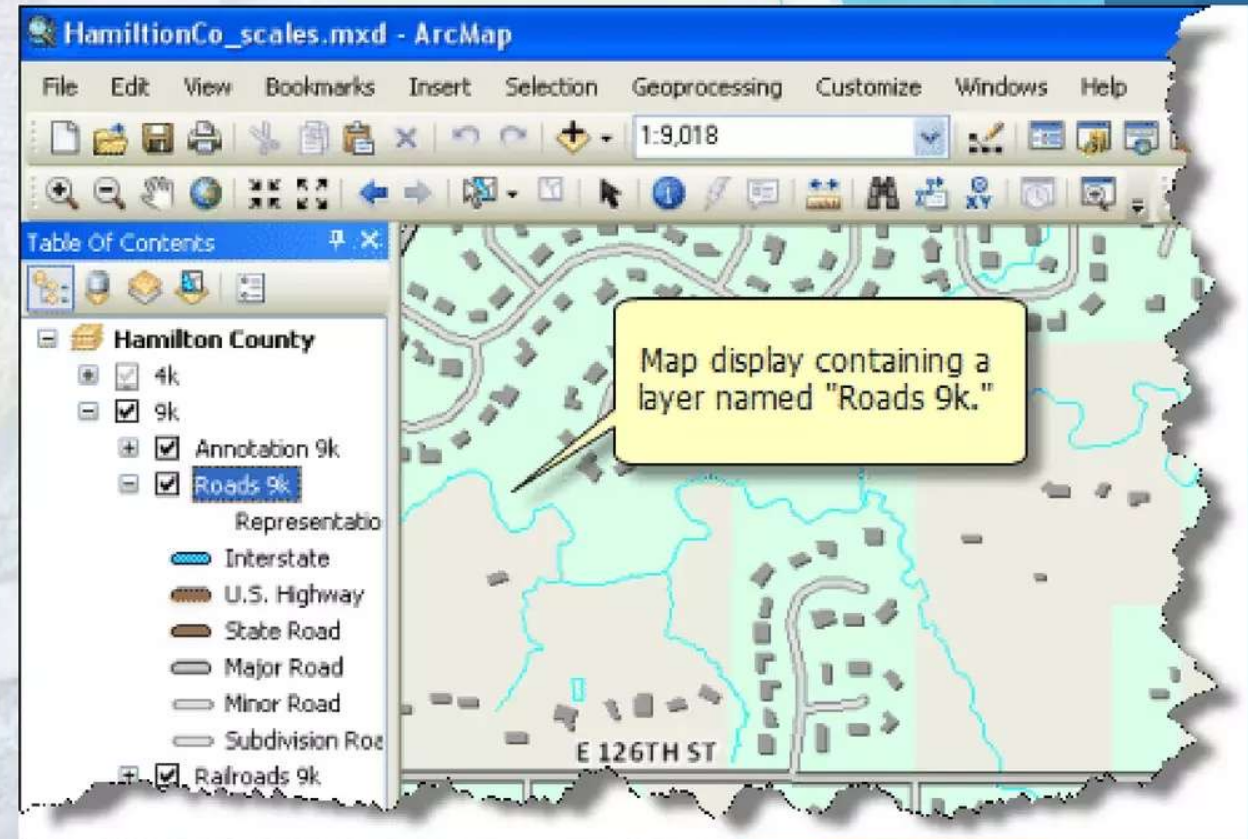


ArcMap



ArcMap

- ▶ Map layers
 - ▶ Within the data frame, you display geographic datasets as layers, where each layer represents a particular dataset overlaid in the map.
 - ▶ each layer's map symbols, colors, and labels help describe the objects in the map
 - ▶ A layer doesn't store the actual geographic data. Instead, it references a dataset, such as a feature class, an image, a grid, and so on



ArcMap

► The Table of Contents

- Lists all the layers on the map and shows what the features in each layer represent.
- The check box next to each layer indicates whether its display is currently turned on or off.
- The order of layers within the table of contents specifies their drawing order in the data frame.

The screenshot shows the 'Table of Contents' window in ArcMap. It lists various layers in a hierarchical structure. The 'Tax Parcels' group is expanded, showing sub-layers like 'Tax Parcels', 'TaxParcelAnnotation', 'Parcel Boundaries', and 'Parcels'. Other groups include 'Basemap layers' (with 'US Highways', 'Major Roads', 'Minor Roads', 'Railroads', 'Waterbodies', and 'Waterway'), 'City boundary', 'Landbase', 'Imagery', 'Cadastral Reference' (with 'Control Corners', 'Boundaries', and 'Sections'), and 'Imagery'. Callouts provide instructions: 'List By Drawing Order' points to the top toolbar icon; 'Turn a layer on or off by clicking the check box.' points to a checkmark; 'Expand and contract items by clicking the + and - boxes.' points to the expand/collapse icons; 'A gray check box with a scale bar under it indicates the layer is not displaying at the map's current scale.' points to a grayed-out layer; 'Activate this data frame to display its contents on the map.' points to the 'Tax Parcels' group header; 'Click a symbol to change its properties.' points to a symbol next to a layer; 'Right-click to open a menu containing commands to display the attribute table, set properties, save the layer, and so on.' points to a right-click context menu; 'Double-click a layer to open the Layer Properties dialog box.' points to a layer; 'The contents of the active data frame (shown in bold) are displaying on the map.' points to the bolded 'Tax Parcels' group; and 'Drag a layer to change its drawing order. You can also drag layers to move them into and out of group layers and basemap layers.' points to a layer being dragged.

List By Drawing Order

Table of Contents

The contents of the active data frame (shown in bold) are displaying on the map.

Turn a layer on or off by clicking the check box.

Expand and contract items by clicking the + and - boxes.

A gray check box with a scale bar under it indicates the layer is not displaying at the map's current scale.

Activate this data frame to display its contents on the map.

Click a symbol to change its properties.

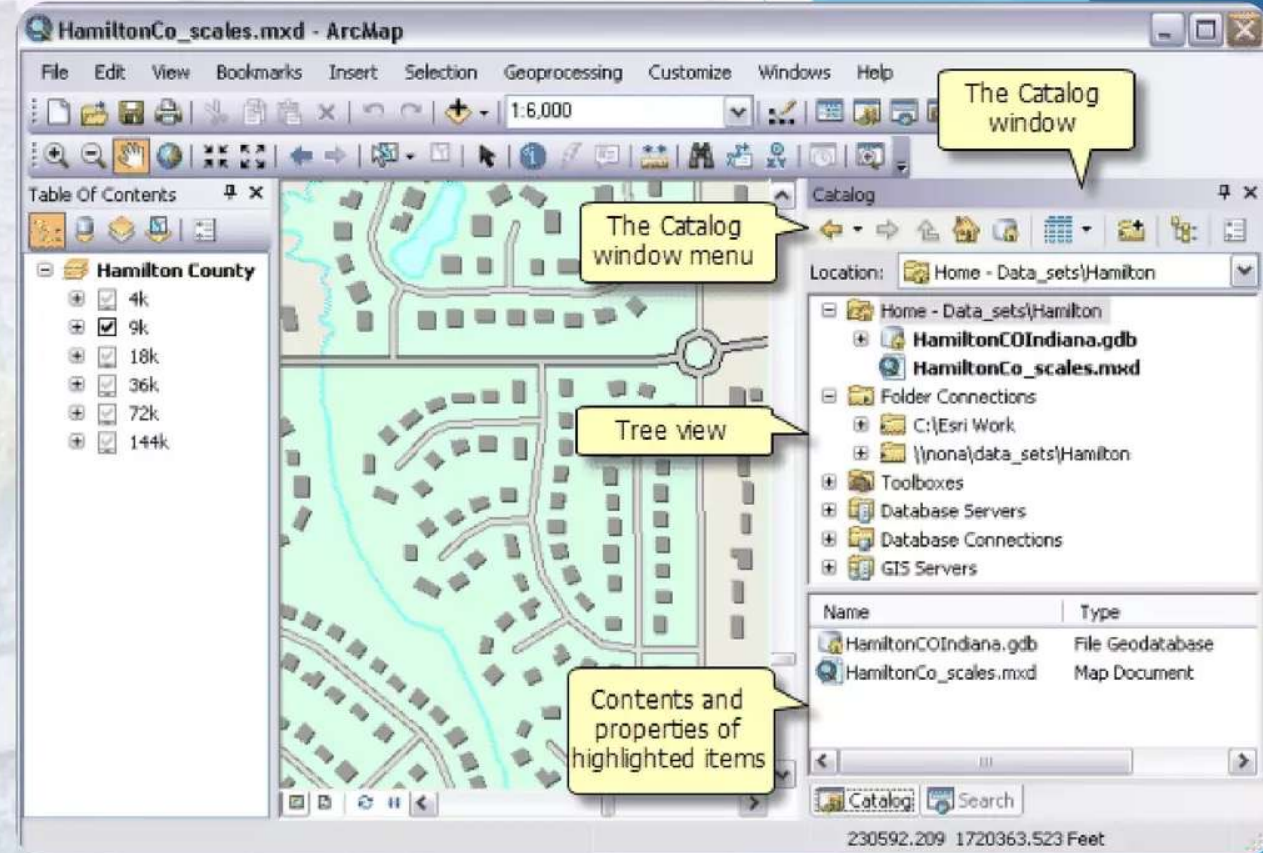
Right-click to open a menu containing commands to display the attribute table, set properties, save the layer, and so on.

Double-click a layer to open the Layer Properties dialog box.

Drag a layer to change its drawing order. You can also drag layers to move them into and out of group layers and basemap layers.

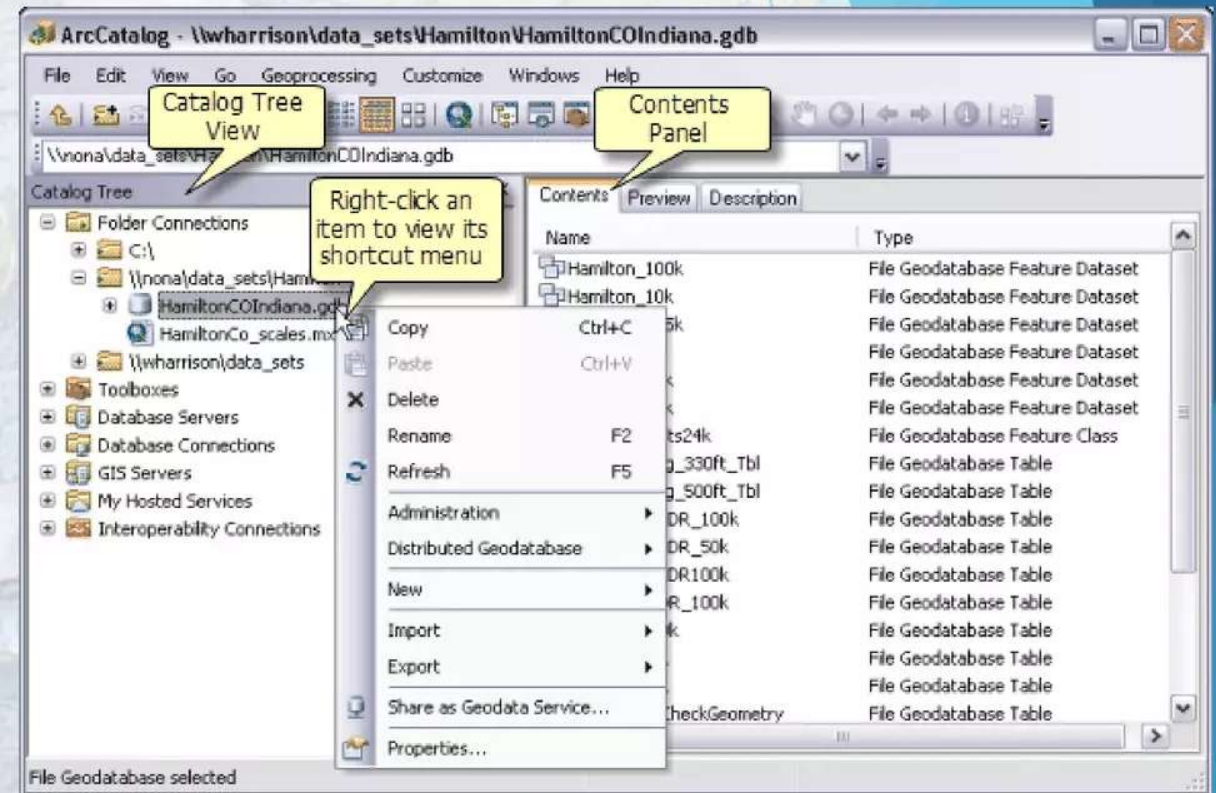
ArcMap

- ▶ The Catalog Window
 - ▶ used to organize and manage various types of geographic information as logical collections—for example, the data, maps, and results of your current GIS projects that you work with in ArcGIS.
 - ▶ provides a tree view of file folders and geodatabases.
 - ▶ The order of layers within the table of contents specifies their drawing order in the data frame.



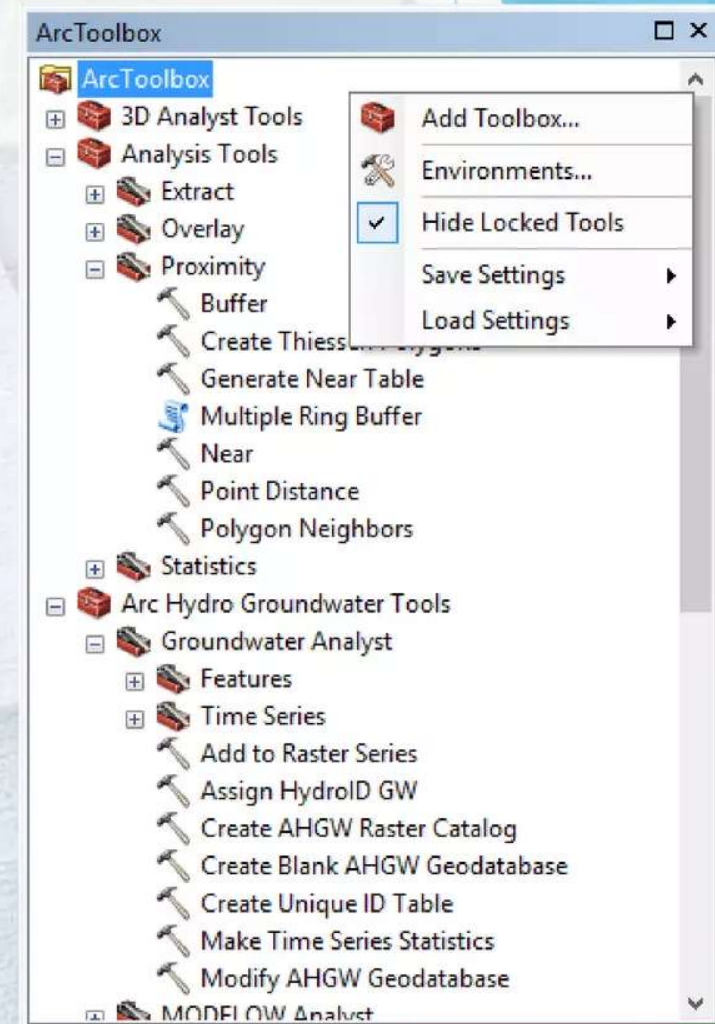
ArcCatalog

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- ▶ The ArcCatalog application provides a catalog window.
 - ▶ ArcCatalog is used to:
 - ▶ Organize your GIS contents
 - ▶ Manage geodatabase schemas
 - ▶ Search for and add content to ArcGIS applications
 - ▶ Document your contents
 - ▶ Manage GIS servers
 - ▶ Manage standards-based metadata



ArcToolbox

- ▶ The ArcToolbox window contains shortcuts to toolboxes.
- ▶ Toolboxes can be a file (.tbx) in a folder or an item in a geodatabase.
- ▶ Tool types
 - ▶ Built-in tool 
 - ▶ Model tool 
 - ▶ Script tool 



Thank You

Do you have any question?

