

## **GEOG3600. Geographical Information Systems**

### **Lab 3. What makes geographical databases?**

#### **Objectives**

This tutorial aims at providing an opportunity to explore the data you need in next laboratory sessions and get familiar with ArcCatalog operations. In this tutorial we will concentrate on using ArcCatalog, a module of ArcGIS that is designed to make access and manage geographic data.

ArcCatalog can be used to:

- browse for maps and data,
- explore the data,
- view and create metadata,
- search for maps and data, and
- manage data sources.

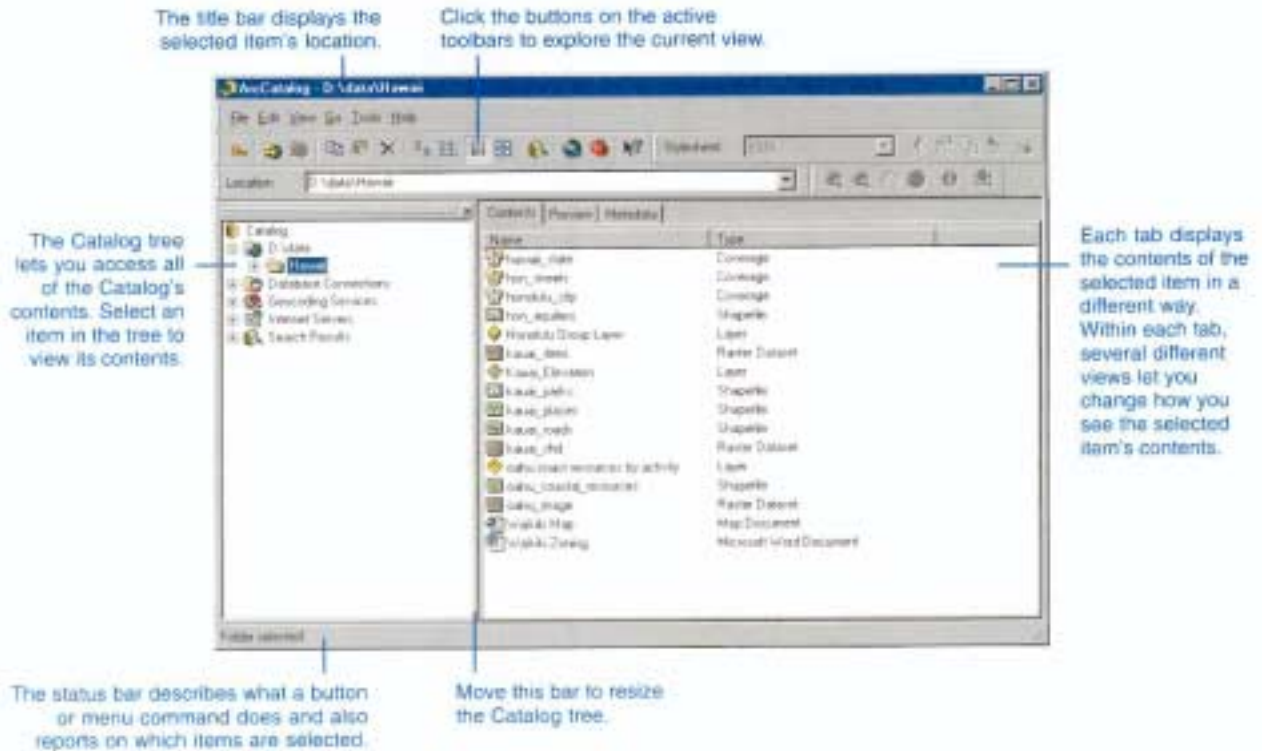
You are going to use some geographical data sets and more data will be provided to you in the next sessions on demand. The data were imported from ARC/INFO Export file (.e00 extension) using Import71 utility (an ArcView 3.x utility), and they can be divided into 2 categories:

- B20000 series from Lands Department (sheet no.11) – coverage name started with t11.
- B5000 series from Lands Department (sheet no.11swa) – coverage name started with 11swa.

Your tutor will give you the description of these data layers. **DO NOT THROW IT AWAY** as you may need it in latter labs.

#### **Instructions:**

1. Start ArcCatalog. On the left of the ArcCatalog window, you will see the Catalog tree, which gives you a bird's-eye view of how your data is organised. On the right are tabs that let you explore the contents of the selected item in the Catalog tree (refer to the diagram below).



2. You need to add connections to the geographical data that you are going to work with to the Catalog. (You may connect to folders on local disks, to shared folders and databases that are available on the network, or to Internet map servers).

Press the 'connect to folder' icon button and select the data source folder (y:\geog3600) as well as your personal folder (i.e. u:\username)

3. Click the *hkdata* folder in the Catalog tree, and then try to click the 'Large Icons', 'List', 'Details' and 'Thumbnails' icon buttons on the toolbar. What are the differences among these views?
4. Select a coverage (for example, 11swarail) in the Catalog, then click Preview tab. What does the screen show for preview 'Geography' and 'Table'?
5. Click the Metadata tab, what does it show? What is 'metadata'?
6. You may manage maps and geographic data in the same ways as that in Windows Explorer. Use the standard Windows shortcuts and drag and drop techniques to copy, move, rename, and delete items in the Catalog.

Please do the following tasks:

- a) Create a new folder named 'hkdata' in your personal folder.
- b) Copy all the coverage from y:\geog3600\hkdata to your personal folder.
- c) Rename the coverage '11swartf' to '11swaarft'.
- d) The coverage 't11bilup' is useless, so that delete this coverage please.

e) Disconnect the y:\geog3600 folder.

(Keep in mind that when you delete a database connection, you are deleting the connection itself, not the database or its contents. However, when you delete a coverage or a personal geodatabase, you are deleting the Access database file and all the data it contains).

7. You need to create a new Personal Geodatabase to contain all your data. Click the folder which you want to create a new personal geodatabase, then click the File menu, select Personal Geodatabase and give it a name. The extension of a personal geodatabase is .mdb - same as Access database file.

What is the major difference between personal geodatabase and other data formats (e.g. shapefile)?

8. Import the B20000 layers dataset into your first personal geodatabase. Select your personal geodatabase in the Catalog tree, then right-click and select Import -> Coverage to Geodatabase. We need to import the following layers to the geodatabase:

Coverage	Feature class
T11bilup1	Polygon
T11bilup2	Polygon
T11bilup3	Polygon
T11bilup4	Polygon
T11cult	Arc
T11height	Arc
T11hydro	Polygon
T11hydro	Arc

Try to open the personal geodatabase and other coverage in ArcMap. You need to have an idea of the actual extent of different layers.

9. Careful planning is critical in any GIS project and can save your time and effort once you get to the database creation, analysis and mapping steps. In this stage, we have not yet defined the project objective. Nevertheless, it is worthwhile to prepare a table (see the example below) that lists the details of available data.

(Remember to keep a copy of the table - you will need this later).

Layer	Name	Format	Current_Location
Building	Bldg	ArcInfo Coverage	HKData Folder

10. Submit the answer to your tutor and keep your database for latter uses.