CrimeMapTutorial Workbook

ArcView 3.x Version

by

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Introduction

What Is the Goal?

There are many advanced and sophisticated things that can be done with GIS and crime mapping. This tutorial, however, intends to provide the basics - the “bread and butter” of daily police work. Here is what is really important: 1) uniformed officers and detectives need daily access to real-time crime data on maps; 2) as important as displaying crime patterns is displaying recent changes in crime patterns; 3) the data behind the points on pin maps need to include investigative information like suspect MO and physical description, location type, vehicle, and victim data; and 4) crime analysts and detectives need to be able to frequently perform ad hoc queries and produce custom maps as special needs arise. You can do all of this with ArcView, pretty much as it comes out of the box.

What Are the Prerequisites?

CrimeMapTutorial assumes that you are PC computer literate, meaning that you can 1) find folders and files on your computer, and 2) know how to use common packages like spreadsheet and word processing packages.

Which Parts Are for You?

CrimeMapTutorial has material for both crime map GIS users and specialists. In the material below, I recognize that all three roles identified may be filled by the same person or persons. Nevertheless there will be specialization in some agencies, and hopefully many users who are not computer or GIS specialists.

• Users of GIS - If you want to learn how to use a crime mapping GIS built by someone else, work through the first 19 pages of CrimeMap Tutorial 1. If you want to learn how to make ad hoc map queries using MO, suspect, and other data, work from page 20 to the end of CrimeMapTutorial 1. Tutorial 1 has you use the map layers and crime maps created in tutorials 2 and 3. GIS specialists should also work through tutorial 1, to get an introduction to the end product, crime mapping system.

• Data Preparers - If you need to learn how to process police data for use in a GIS, work through all of CrimeMapTutorial 2. This work includes address matching police incidents to place them on pin maps, and aggregating crime counts by areas (like car beats) to produce area or choropleth maps. Note that the data preparer needs to have good data management and processing skills in general, including experience with data cleaning, standardization of address data, etc.

• Map Makers - If you want to learn how to construct useful crime maps, given police data that have already been mapped and preprocessed by data preparers, work through CrimeMapTutorial 3. You can jump into this tutorial without having done CrimeMapTutorial 2, because I provide a folder called Finished Products, which has results from tutorial 2 needed for tutorial 3.
Crime map GIS users will learn most of what they need from this tutorial. Crime map GIS specialists (data preparers and map makers) will get a good, quick start and be able to do maybe 85% of what they will eventually need. The last section of this tutorial, “How to Get Crime Mapping Started in Your Agency,” tells you what else there is to learn, alternatives on where you can learn it, and what to do next.

**Should You Do the Practice Exercises?**

Yes, you need to do the exercises. Many of the exercises are essential as input to further tutorial steps. The exercises do not take long to complete, and help make material “stick” by immediately having you review steps with a little independent thinking required. You should keep CrimeMapTutorial Workbook open flat so that you can see steps to take on your computer (left pages) and corresponding screen prints of what you should be seeing on your computer (right pages).

**What are Software and Hardware Requirements?**

You will need to purchase and install ArcView GIS Version 3.2, if it is not already on your PC (CrimeMapTutorial also works with ArcView 3.1 and 3.0). The PC version of ArcView 3.2 requires that you run Microsoft Windows 95, 98, or Windows NT as your operating system and have at least 16 MB RAM, 57 MB disk space for full installation, or 24MB for compact installation.

**How do you install the CrimeMapTutorial Data?**

Download the CrimeMapTutorialData folder (ArcView version) from the CMRC Web site (http://www.ojp.usdoj.gov/cmrc/), which is in a single zipped file. Once the downloaded file is on your computer, double-click on the zipped file to activate the decompression software on your machine, such as WinZip® or PKZip®. Then choose the option to Extract the files onto your hard drive. Within the Extract dialog box, check the options to extract all files and to retain the original file structure and folder names. When choosing the directory to which you will extract the files, it is very important to select the C:\drive. This extraction process will then create a folder called C:\CrimeMapTutorial. It requires 11 MB of disk space.
Objectives

Examine GIS Files
GIS 101: The Basics of GIS
Use Crime Maps
Make Ad Hoc Map Queries

CrimeMapTutorial 1:
Using a Crime Mapping GIS

Introduction

Welcome to CrimeMapTutorial. You will learn a lot about using ArcView GIS for crime mapping, plus a lot about GIS in general through concrete examples. First you will examine the structure of a GIS’s files. Next you will learn the basics on using and getting around in ArcView - we do this in the context of the maps and files you will use for crime mapping. Next you will use two crime maps: 1) an early warning system area map with drill down to a pin map and 2) a daily pin map for uniformed officers. Lastly is a section on making ad hoc map queries. For those of you who want to be crime map GIS builders, CrimeMapTutorials 2 and 3 have all of the steps to build the early warning system and daily pin map. CrimeMapTutorial 2 handles all data processing steps and CrimeMapTutorial 3 has all map-making steps.
Examine GIS Files

1. Double click the **My Computer** icon on your computer’s desktop.

   The My Computer window opens. Your window may appear differently depending on whether you have Windows 95, 98, or NT on your computer. If you do not have the Up button, click View, Toolbar to get an equivalent - a yellow folder icon button.

2. Double click the (C:) icon.

   The C:\ window opens, showing folders on that drive.

3. Double click the **CrimeMapTutorial** folder.

4. Click View, Arrange Icons, By Name in the C:\CrimeMapTutorial window.

   CrimeMapTutorial has the folders for this tutorial and is also a good example of how to organize your GIS files in practice.

5. Double click each folder, starting from the top. Read my comments below on the folder’s contents, click the Up button, double click the next folder, etc.

   **DataIncident** - has offense data from the Rochester, NY Police Department’s record management system.

   **DataIntermediateTables** - (now empty) is just that, a place to put tables needed to accomplish something, but not end products.

   **DataSeries** - (now empty) will have one dBase file for each crime type, areal unit, and time unit of interest. In this tutorial, we will just have burglaries by 2,000 foot grid cells and month. In practice, a crime Mapping GIS may include all part one crimes individually, a selection of part 2 crimes, and a selection of 911 CAD calls. Besides a grid, you may also want to have table for each crime type for census block groups and carbeats.

   **Documentation** - there is not much here, but this folder would normally include user and technical documentation.

   **Finished Products** - has files that you will build in this tutorial. These files allow you to skip sections and jump to advanced material. They also allow you to proceed if you were unsuccessful in some step. We will use these files in this first tutorial, because you will learn how to use what you will later build from scratch.

   **MapsBase** - has all maps for this tutorial, except ones made from police incident data. These are all commercially available maps, or easily constructed, and include car beats, census tracts, 2,000 foot square grid cells, retail stores points from an electronic yellow pages, and street centerlines for plotting police incidents.

   **MapsIncident** - (now empty) will have police incident maps that you will create in tutorial 2.

   **MapsLegendsTemplates** - (now empty) has map components that you save and reuse.
**Folders of CrimeMapTutorial**

- DataIncident
- DataIntermediateTables
- DataSeries
- Documentation
- FinishedProducts
- MapsBase
- MapsIncident
- MapsLegendTemplates
- achocqueries
- allthemes
- crinemap

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**Files of the DataIncident folder**

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- Off199904

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GIS 101: The Basics of GIS

Open an ArcView Project

Allthemes.apr is part of the documentation for CrimeMapTutorial’s GIS. It has all map layers (or themes) included in the GIS. You can get a quick look at the maps and data behind them, which is what you will do next. Note that all ArcView projects have the .apr extension.

1. Double click the Allthemes file in the C:\CrimeMapTutorial window.

ArcView opens with two windows, the Allthemes.apr project window and the Rochester, NY View window. The project window is the ArcView interface, giving access to views, data tables, common charts like bar charts, map layouts for printing, and scripts that can be added for more GIS features. The gray area on the left side of the view window (Rochester, NY is the title of this window) that has all of the names of themes is called the “table of contents.”

2. Click the small embossed square to the left of the Carbeats label in the Rochester, NY view.

This turns on the Carbeats theme. The Sections theme was already on. ArcView draws from the bottom up, so the thick black line of Sections (these are precincts) cover corresponding thin red lines of the crabeats. Themes like sections and carbeats are easy to digitize or make “dissolving” themes like census tracts with ArcView, but that task is beyond the scope of this tutorial.

3. Click the same small embossed square to turn Carbeats back off, and click on the Grid2000Cells theme.

Grid cells are very good for displaying information through color shading, in area or “choropleth maps” maps, as you will see a bit later.

4. Click off the Grid2000Cells theme and click on streets.

The previous two themes were polygon themes, made up of connect-the-dots lines that form closed areas. Streets is a line theme, connect-the-dots lines. Streets has street centerlines in the US Census format called TIGER, and was purchased from GDT, Inc. (www.gdt.com, Dynamap 2000 GIS).

5. Click the Streets legend (gray area with Streets label) to make it the active theme (placing a large embossed rectangle around it.)

Practice:

You can learn a lot from the Help facility in ArcView. Click Help, Help Topics..., and the index tab. Key in shape in the textbox 1, and double click Shapefiles described in panel 2. Also look up Active theme.
Navigate Around the Map and Its Data

1. Click the **Open Theme Table** button in the button bar. 
   The Attributes of Streets table opens. There is one record in this table for each street segment (which is generally one block long). Each street segment has several attributes. Here you can see street numbers, starting and ending, for the left and right sides of the street. This is part of the TIGER format. All in-between street number locations must be interpolated.

2. Scroll to the right in this table to see other attributes.
   When you address match police offense records to place them on the map in CrimeMapTutorial 2, ArcView will use a sophisticated matching process (called address matching or geocoding), searching attributes including prefix, name, and type to find the offense street address and place a point on the street map.

3. Click any cell in the first record of the **Attributes of Streets** window.
   The row is “selected” and is shaded with the selection color, which I set to red (usually it is yellow, but I wanted selections to show up more clearly here).

4. Click the **Rochester, NY** View to make it the active window and click the **Zoom to Selected** button.
   ArcView zooms to the selected feature on the map, the 800 block of Beach Ave.

5. Click the **Zoom Out** button three times.

6. Click the **Label** tool and then click the **selected street segment** (Beach) and the parallel segment (Seascape) which is down and to the left.

7. Click the **Pan** tool, click and hold anywhere on the map, drag up, and release.

8. Click the **Zoom to Full Extent** button and click the **Clear Selected Features** button.

9. Close the **Attributes of Streets** window.

10. Click the **Streets theme** off.

**Practice:**
   Repeat the steps of this page and locate another street on the map, starting by selecting a street in the table.
Label More Features

1. Click Window, Show Symbol Window...
The Font Palette opens.

2. Click the ABC icon in the palette.
The Font Palette opens.

3. Click Arial Narrow in the fonts panel, click the drop list arrow in the Size field and click 10 in the resultant list, click the drop list arrow in the Style field, click the Bold value in the resultant list, and close the Font Palette.

There is no apparent change, but ArcView remembers and will use this setting when you use the label tool next.

4. Click the legend of the Sections theme to make it the active theme.

If your map does not appear, click the Zoom to Full Extent button.

5. Click the Label tool and click in the center of each Section.

This action labels the sections with their names. If you want to reposition a label, click on it with the pointer tool to create four grab handles. Then click, hold, drag the label to a new position, and release.

6. Click Theme, Remove Labels.

Practice:

Turn on the Carbeats theme and label the carbeats. Try out Theme, Auto Label.... When done, remove labels and click Carbeats off.
Identify Features in Themes

1. Click the small embossed square of the **RetailWholesale theme** to turn it on, if not already on.

   This is the third and last kind of theme that we will use, a point theme. I got the RetailWholesale theme from an electronic yellow pages published on CD by PhoneDisc. The CD comes with latitude and longitude coordinates and standard industrial classification (SIC) codes. See the documentation folder for a listing of these codes. Here we have all retail and wholesale businesses SIC Codes 5000 to 5999). A lot of these points are crime-prone land uses.

2. Click the legend for **RetailWholesale** to make it the active theme. (which places an embossed square around it.)

3. Click the **Zoom In** tool.

4. Click and hold down the mouse button in the upper left corner of the Clinton Section (top center section), drag diagonally down and to the right to place a rectangle around Clinton Section, and release.

   ArcView zooms into Clinton Section. If you made a mistake, press the **Zoom to Full Extent** button and try step 4 again.

5. Click the small embossed square of the **Streets** theme to turn it on.

   The RetailWholeSale theme does not quite match the TIGER Streets theme, because we edited the street theme to be more accurate positionally, using curb lines digitized by the Rochester, NY Planning department from aerial photographs.

6. Click the **Identify** button.

7. Click the **legend of the RetailWholesale** theme to make it the active theme.

8. Click carefully on the upper, right-most dot of the RetailWholesale theme in Clinton Section.

   The Identify Results window opens. There are three establishments represented by the point, with data for the third shown. To see data for the other two, click on their respective lines in the left panel of the Identify Results window.

9. Close the **Identify Results** window and click the **Zoom to Full Extent** button, and click off the Streets theme.

**Practice:**

Repeat the steps of this page for the Streets theme. Identify streets of you choice. When finished, be sure to do step 9 to clean up your view.
Make a Simple Map Query

1. Click the **RetailWholesale theme** on.
2. Click the legend for **RetailWholesale** to make it the active theme. (which places an embossed square around it.)
3. Click the **Open Theme Table** button.
4. Scroll to the right in the **Attributes of RetailWholesale** window and see the SIC Code for the 7-Eleven Food Store (5411).
5. Click the column heading for the **SIC4** attribute to highlight it (reverse its video), click the **Sort Ascending** button, and scroll down to see that there are many rows for SIC code 5411 (convenience stores).

Instead of clicking rows to highlight them, you will next use a query to do the same thing.

6. Close the **Attributes of RetailWholesale** window and click the **Query Builder** button.

The query builder interface opens.

7. Scroll down in the **Fields** panel, double click [SIC4], click the = button, scroll down in the Values panel and double click 5411, click the **New Set** button, and close the query builder interface window.

The RetailWholesale points for convenience stores are now selected and have red-colored point markers.

8. Click the **Clear Selected Features** button.
9. Click off the **RetailWholesale theme**.

Practice:

Repeat the steps of this page and locate all drinking places. Hint: the Aurora Bar and Bistro is in Rochester, so you could find it in the RetailWholesale attribute table and look up its SIC code.
Apply Legends to an Area Map

1. Click the small embossed square in the legend of the Tracts theme to turn that theme on, and make it the active theme by clicking its gray area.

2. Click the Open Theme Table button and scroll to the right in the table that opens to see the several census variables available for use.

3. Click Table, Properties... and scroll down in the lower panel until you see some attributes checked on and with aliases.

I clicked off (turned off) several of the beginning variables so that they do not appear in the Attributes of Tracts table.

4. Click Cancel in the Table Properties window and close the Attributes of Tracts window.

5. Double click the legend of the Tract theme (the word “Tract” or the rectangle under it) in the Rochester, NY view.

6. Click the Load button in the Legend Editor.

7. Open the FinishedProducts folder, double click the PercentageHispanicPopulation.avl legend, and click OK in the small Load Legend window that is now open.

The Legend Editor opens with a legend that I built previously. You will build and save legends in CrimeMapTutorial 3.

8. Click the Apply button in the Legend Editor and close the Legend Editor.

Polygons that make up census tracts in the Rochester, NY view are now color shaded according to their percentage Hispanic variable. The color scheme used is called monochromatic, with increasingly darker shades of the same color. This is a good color scheme for many variables, and photocopies nicely in black and white (to shades of increasing gray). You can purchase current-year estimates and five-year forecasts of several useful census variables at the tract and smaller block group levels from Claritas, Inc. (www.Claritas.com).

Practice:

Repeat the steps of this page, starting with step 5 and load several other legends: MedianHousingValue, PercentBlackPopulation, PercentCrimeAge14t24Population, and PercentElderly65PlusPopulation. A few of these legends use a dichromatic scale (two colors) to show standard deviations above and below the mean of the variable.
Use Crime Maps

Use an Early Warning Map View

1. Click **File, Close All**, then **File, Open Project**, and click **No** to not save changes.

   The Open Project window opens.

2. Navigate to the *CrimeMapTutorial* folder and double click **CrimeMap.apr**

   This is the ArcView project that you will build in CrimeMapTutorials 2 and 3. It has two views. The one that opens is part of an early warning system that helps identify crime pattern changes over the whole city. The second is for use by uniformed officers, on a daily basis. Shown here are the number of burglary offenses by 2,000 foot grid cell for the month of March 1998. Evident are some hot spot areas with counts in the 5 to 8 range.

3. Click the **Burglaries Change 199804** map off and then click the **Burglaries 199804** theme on and off repeatedly to see changes from 199803 to 199804.

   Focus on a section at a time, and you can see some interesting patterns of change. Better yet, the next map shows the changes directly. Note that ArcView draws from the bottom up in the table of contents of the view, so when you click on Burglaries 199804, it covers up Burglaries 199803.

4. Click on the small embossed square of the **Burglaries Change 199804** theme to turn it on.

   This theme has a bichromatic scale with shades of red showing heating up and shades of blue cooling off. The values for each grid cell are burglary counts for 199804 minus 199803.

5. Click the **Zoom In** tool and drag a rectangle around the hottest grid cell in Clinton section and release.

   ArcView zooms into the desired area, using threshold scales that you will build later. Notice in the top right of the view is Scale 1: 17,234 (or some other number). This is the current scale for your zoom level; e.g., 17,234 inches on the ground for every inch on the screen. When you get to 1:17,000 or lower, the color-coded grids turn off and several themes turn on, including Burglary Points 199804 and Streets. This zooming process is also called “drilling down.”

6. Click the legend of **Burglary Points 199804** to make it active.

7. Click the **Identify** tool.

8. Click on the point in the hot spot with two burglaries.

   As you will see, the same store was burglarized twice, in about the same way. Click on lines 1 and 2 in the left pannel of the Identify Results window.
Use a Pin Map

1. Close the **Identity Results** window, click the **Zoom to Full Extent** button, and close the **CrimeMap 199804** view.

2. Click the **Views** icon in the left panel of the CrimeMap.apr project, and double click the **Four Weeks Ending 19980430, 2nd Shift** line.

   The Four Weeks Ending 19980430, 2nd Shift view opens. This view is intended for use by uniformed officers, and while the map seems to be cluttered, it has the kind of details an officer needs. It has a selection of different crime types for the last four weeks (28 days) that occurred in the 2nd shift. Crimes that occurred within the last three days have larger symbols of the same shape and color as the earlier crimes. These maps are to be printed just before roll call with the latest data (in Pittsburgh the police use 11” x 17” color maps for a given precinct) and posted in the map room along with a printed report of the corresponding crimes sorted by street name. The Pittsburgh Police have had very good results using these maps in a pilot precinct this past year in its COMPSTAT program (contact Commander Bill Valenta).

3. Click the legend of the **Offenses within the Last 3 Days** theme to make it active.

4. Click the **Identify** tool and click the homicide point (it is hard to hit the right point, the right thigh).

   You can see one of the beauties of the Rochester Police GIS, that it has several records joined together for use here in the GIS: It has data on the offense (which includes several good MO attributes), plus data on victims and suspects. (I removed persons’ names from the records for purposes of these training materials, to protect confidentiality).

5. Close the **Identity Results** window and close the **Four Weeks Ending 19980430, 2nd Shift** view.

6. Click the **Layouts** icon in the left panel of the CrimeMap.apr project window.

7. Click the **Open** button in the project window.

   The printing version of Pin Map, Four Weeks Ending 19980430, opens.

8. If you have a printer attached to your computer, click **File**, **Print Setup...**, click the **Landscape** radio button, and make other settings as necessary for your site.

9. Click **File**, **Print**.

10. Click **File**, **Exit**, and **No**.
Make Ad Hoc Map Queries

Crime analysts and detectives will often want to make maps or extract data for special purposes. The needed input is a master file of all crimes over a long period of time. You will learn how to make such a file in CrimeMapTutorial 2, but here you will put it to use.

1. Open a **My Computer** window, if one is not already available, navigate to the c:\CrimeMapTutorial, and double click the **AdHocQueries.apr** file.
   
   The ArcView project opens, with the Query view open. Available is a collection of offense types for March and April 1998 for training purposes. Typically such a master file would have two to five years’ data. You should be able to extract any information that you need from it. Suppose that you want all robberies for March 1998.

2. Click the legend of the **Master19980430.shp** theme in the Queries view to make it the active theme.

3. Click the **Query Builder** button.  
   
   A query builder interface opens for Master19980430.shp. The “.shp” extension denotes that this is a shapefile, the standard map file format for ArcView.

4. Scroll down in the **Fields** panel and double click **[Group]** so that it appears in the lower left expression panel of the query interface.
   
   Group is a high-level crime code created for mapping purposes. It combines, in this case, all forms of robbery offenses into a single code for plotting purposes.

5. Click the **=** button, scroll down in the Values panel and double click **“ROBBERY”**, click the **and** button, double click **[Begdated]** in the Fields panel, click the **>=** button, double click **19980301** in the Values panel, click the **and** button, double click **[Begdated]**, click the **<=** button, scroll down and double click **19980331**, and click the **New Set** button.
   
   The robbery points from March 1998 are highlighted in the selection color, yellow. If you made a mistake, simply start again or try editing your query expression.

6. Close the query builder window.
Completed query expression

\[
\{ \text{Group} = "ROBBERY" \} \land (\text{Begdated} \geq 19980301) \land (\text{Begdated} \leq 19980331)
\]
Make More Complicated Queries

1. Click the **Open Theme Table** button.

   The Attributes of Master19980430.shp window opens.

2. Click the **Promote** tool. 

   All records corresponding to selected robberies, which were highlighted in the selection color by the previous step, are moved to the top of the table. Notice that the top left of your screen has the information that 94 out of 4,074 records are selected. If you wanted to print the selection you could click File, Print... If you wanted to export the selection for analysis in a spreadsheet, you could click File, Export... Suppose next that you want to limit your query to robberies in March 1998 to the location type of convenience stores.

3. Close the **Attributes of Master19980430.shp** window and click the **Query Builder** icon.

4. Double click **[Loctype]** in the Fields panel, click the **=** button, double click **“COM-CONVENIENCE STOR”** in the values panel, click the **Select from Set** button, and close the query builder.

   If you look in the master file attribute table, you will see that there are five robberies of convenience stores in March 1998.

5. Click the **Clear Selection** button and close the query builder window

**Practice:**

(1) Try making a query for **[Group] = Assaults in or around bars (Com-Bars)** in March 1998. All criteria are connected with and’s. There are nine offenses meeting these criteria.

(2) Also try a query for Assaults in March 1998 with suspects who are male and of Hispanic origin between 18:00 and 22:00 hours. Use all “ands” to connect criteria, and put the times in double quotes. This is a tough one! There are two assaults that meet the criteria.

(3) Finally, try a query for **[Group] = GL-FIREARMS (grand larceny firearms), March 1998, and commercial location types.** There are many commercial location types, like COM-AMUSEMENT CTR, COM-ATM, etc. To include them all in your query, use **([Loctype]= “COM*”)**. The asterisk is a wildcard character that selects any values starting with COM, with zero or more additional characters afterwards. There are 27 offenses satisfying the query.
**Make a Spatial Query**

First, you will build a new query for robberies or assaults in 199803. Then you will find the subset of those within a quarter mile of bars.

1. **Click the Query Builder icon.**
   The query builder interface opens for Master19980430.shp. Next, in creating the query expression, you will have to use extra parentheses to group criteria connected by an “or” so that they are executed before the following “and”. Be careful to check any queries you make with “or’s” to make sure they give correct results. Generally, you will have to add extra parentheses.

2. **There are a lot of steps, so here they are in a list:**
   - Double click [Group] in the Fields panel
   - Click the = button,
   - Double click “ASSAULT” in the Values panel
   - Click the or button
   - Double click [Group] in the Fields panel
   - Click the = button
   - Double click “ROBBERY” in the Values panel
   - Click the and button
   - Double click [Begdated],
   - Click the >= button,
   - Double click 19980301 in the Values panel,
   - Click the and button
   - Double click [Begdated]
   - Click the <= button
   - Double click 19980331
   - Click at the beginning of your expression and key in a left parenthesis “(“
   - Click to the right of “ROBBERY” in your expression and key in a right parenthesis “)”)”
   - Click the New Set button and close the query builder window.

3. **Close the table and query builder windows, then click Theme, Convert to Shapefile...**
   A file browser opens called Convert Master19980430.shp

4. **Double click the MapsIncident folder.** in the File Name field key in AssaultsRobberies199803, click OK, and click Yes.

5. **Click on the new AssaultsRobberies199803.shp theme and click off the Master19980430.shp theme.**
Extra parentheses

[Group] = "ASSAULT") or ([(Group) = "ROBBERY")
] and ([(Begdate]) >= 19980301) and ([(Begdate]) <= 19990331)
Make a Spatial Query continued

1. Click the Add Theme button, navigate to the Mapsbase folder, and double click the RetailWholesale.shp file.
   The RetailWholesale.shp theme is added to the AdHocQueries.apr project.
2. Click the RetailWholesale.shp theme on and click its legend to make it the active theme.
3. Click the Query Builder icon.
4. Double click [SIC4] in the values panel, click the = button, double click 5813 in the Values panel, click the New Set button, and close the Query Builder window.
   Fifty-one bars are selected.
5. Click the legend of the AssaultsRobberies199803.shp theme to make it the active theme.
6. Click Theme, Select by Theme...
   The Select by Theme window opens.
7. Click drop list arrow in the first field and click Are Within Distance Of, key in .25 in the Selection distance field, the New Set button.
8. Click off the RetailWholesale.shp theme to see your results.
   There are 22 out of 355 assault and robbery offenses within a quarter mile of a bar, which you can verify by opening the attribute table for AssaultsRobberies199803.shp.
9. Click File, Save Project.
10. Click File, Exit.

End of CrimeMapTutorial 1
Select By Theme

Select features of active themes that are within a distance of the selected features of Retailwholesale.shp.

Selection distance: 1000 ft

Cancel