Table of Contents

Joining CHASS Data To ArcView Cartographic Files

The purpose of this manual is to familiarize the user with data exporting functions in ArcView.

A. Importing An Arc Export File

Self - extracting ArcView Format digital Cartographic Files for the Census Tract Level are available from the **Data Library : Census 1996 Spatial Data Files**, located at the University of Toronto web address below.

http://www.chass.utoronto.ca/datalib/cc96/georef96.htm#cma.

At this site you will be given the option to download either **digital boundary files** (DBF) or **digital cartographic files** (DCF) in Arc/Info or MapInfo formats, at the **census subdivision**, **census tract** or **enumeration area level**. In this example we will use the Arc/Info digital cartographic file at the census tract level. Often Arc/Info Cartographic files(.e00 extension) are found in Arc Export File formats (.exe extension). In order to view a desired Arc Export file in ArcView follow the steps below.

***Note** - To use the databases from home, you must be a student (full-time or continuing education), staff or faculty member of Ryerson with an active Ryerson library card. You must also configure your web browser to be able to access the databases through the Library's proxy server. Visit http://www.ryerson.ca/library/info/remote.html for more information.

Example:

1. Scroll down to Toronto (535) and *Download* the ***.exe file (Eg. gct_535b.exe)** for Arc/Info to your disk.

2. Once this file has been downloaded*, double-click* the ***.exe file** to *extract* it. Quit the DOS window when it has finished *extracting.*

You will now use **ArcView Import71** program translate data from an Arc/Info export file into an ArcView readable format.

3. *Double-Click* on the **Import71** icon or *select* **Start > Programs > ESRI > ArcView GIS 3.2 > Import71**

4 (a). The **Import71 Utility** window will *open*.

4 (b). In the **Export Filename** *select* **Browse** *locate* the ***.e00** file in the directory you downloaded it to, and *select* it, then *select* **Open. (Eg. C:\esri\tordcf\gct_535b.e00).**

4 (c). In the **Output Data Source** *select* **Browse** and the destination location where you want the file to be extracted to, then *select* **OK**. After the last **back slash (\)**, *type* in the **output file name with no extension (Eg. C:\esri\tordcf\gct_535b).** Now *select* **OK**. Another window will

appear to tell you that **Import Complete** then *select* **OK.**

B. Opening The Arc/Info Coverage In ArcView

1. *Double-Click* on the **ArcView GIS 3.2** icon or *select* **Start > Programs > ESRI > ArcView GIS 3.2 > ArcView GIS 3.2**.

2. In the **Welcome to ArcView GIS window** *select* **with a new View**, then *select* **OK**.

3. In the **Add data window**, it asks you **Would you like to add data to the View now**, *select* **Yes**.

4. In the **Add Theme window**, *change* the directory to **C:\esri\tordcf** (for example), then *select* on the left side to **gct_535b**. Then *select* **OK**.

5. Now *maximize* the window titled **View1**, then *maximize* the window titled **ArcView GIS 3.2.**

6. *Select* the little grey box left the word **gct_535b** .

What you now have is a layer of all the Toronto CMA by census tracts, in ArcView this layer is called a **theme.**

C. Converting From An Arc/Info Coverage To An ArcView Shapefile

1. Make sure that **Gct_535b** is *active*. From the **Tool Bar** select **Theme > Convert to Shapefile** and give it a name **(Eg. Torctage.shp)** (this will be the new file with the combined boundary file and data file). *Select* **Yes**, when asked to **Add shapefile as theme to the view**.

2. Make **Gct_535b** *active*, and from the **Main Menu** *select* **Edit > Delete Themes > Yes To All**.

3. Now make **Torctage** *active* and put a **check** in the **little grey box** beside the **Torctage.shp** name.

4. *Select* the **Open Theme Table** button (5th button, middle row, left of the binoculars button). You should see the combined ***.dbf file** and **boundary file**. Now let's close this table.

D. Getting Attribute Census 1996 Data

In order to map data variables the data table must be joined with the .dcf or .dbf file.

1. You may *download* the data from **CHASS Canadian 1996 Profile Census Tract Level** located at the site listed below:

http://datacentre.chass.utoronto.ca/census/96_ct.html

2(a). *Select* the **Census Metropolitan Area** = **Toronto**

2(b) **Do you want the data categories to be listed as** = **Columns**

2(c) **Select the Data Category**: *Use* the **Ctrl** or **Shift** keys for multi select. Always be sure to *select* **CTName** as one of the **data categories** because this field is used to link to the spatial data.

2(d) **Select the output format** = **Text**

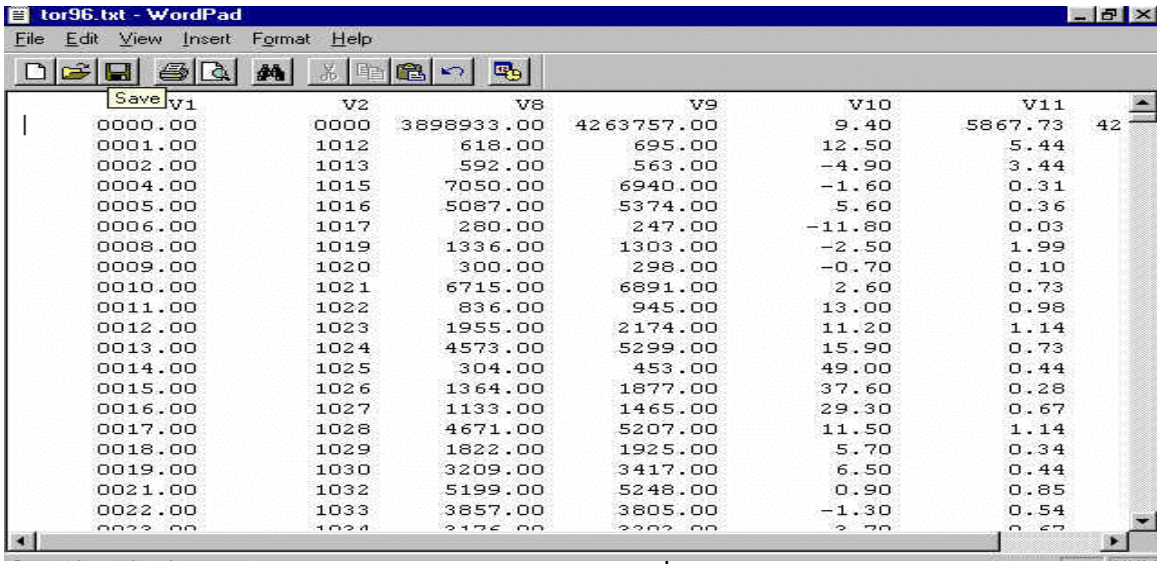
2(e) **Submit your request** = *Click* **Submit Query**

A data file should appear on screen.

3. In **Netscape** *or* **Internet Explorer** go to **File > Save As > C:\Temp\Tor96.txt** (Make sure you *change* the **extension** to .**txt NOT .html**)

4(a). *Open* the **.txt file** in **WordPad**

4(b). *Delete* unneeded **rows** (i.e. header information, empty rows, and the summary data row (first row of the actual data) until you are left with the raw data and column headings.



V1	V2	V8	V9	V10	V11	
0000.00	0000	3898933.00	4263757.00	9.40	5867.73	42
0001.00	1012	618.00	695.00	12.50	5.44	
0002.00	1013	592.00	563.00	-4.90	3.44	
0004.00	1015	7050.00	6940.00	-1.60	0.31	
0005.00	1016	5087.00	5374.00	5.60	0.36	
0006.00	1017	280.00	247.00	-11.80	0.03	
0008.00	1019	1336.00	1303.00	-2.50	1.99	
0009.00	1020	300.00	298.00	-0.70	0.10	
0010.00	1021	6715.00	6891.00	2.60	0.73	
0011.00	1022	836.00	945.00	13.00	0.98	
0012.00	1023	1955.00	2174.00	11.20	1.14	
0013.00	1024	4573.00	5299.00	15.90	0.73	
0014.00	1025	304.00	453.00	49.00	0.44	
0015.00	1026	1364.00	1877.00	37.60	0.28	
0016.00	1027	1133.00	1465.00	29.30	0.67	
0017.00	1028	4671.00	5207.00	11.50	1.14	
0018.00	1029	1822.00	1925.00	5.70	0.34	
0019.00	1030	3209.00	3417.00	6.50	0.44	
0021.00	1032	5199.00	5248.00	0.90	0.85	
0022.00	1033	3857.00	3805.00	-1.30	0.54	

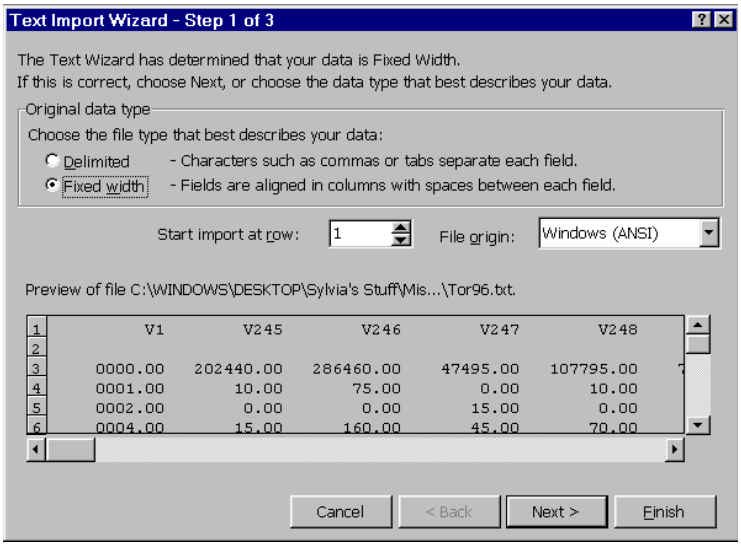
4(c). **File > Save As > C:\temp\Tor96-2.txt (Text**

Document)

5(a). *Open* **MICROSOFT EXCEL**

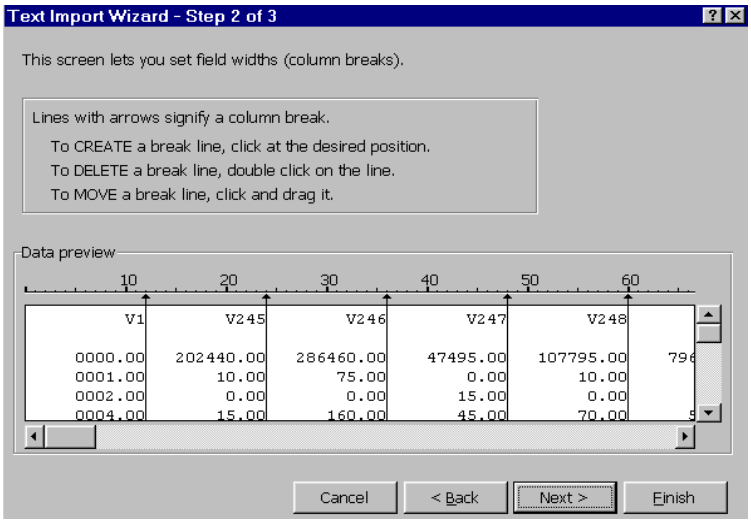
5(b). **File > Open > C:\Temp\Tor96-2.txt** (Change Files of Type = Text Files)

5(c). The **Text Import Wizard Step 1 of 3** should *open* (see below)
For **Original Data Type**
Select: **FIXED WIDTH**
For **START IMPORT AT ROW**
Select: **1 (or which ever row you want to start importing the data)**
For **FILE ORIGIN**
Select: **Windows (ANSI) - *default setting***
Click **Next**



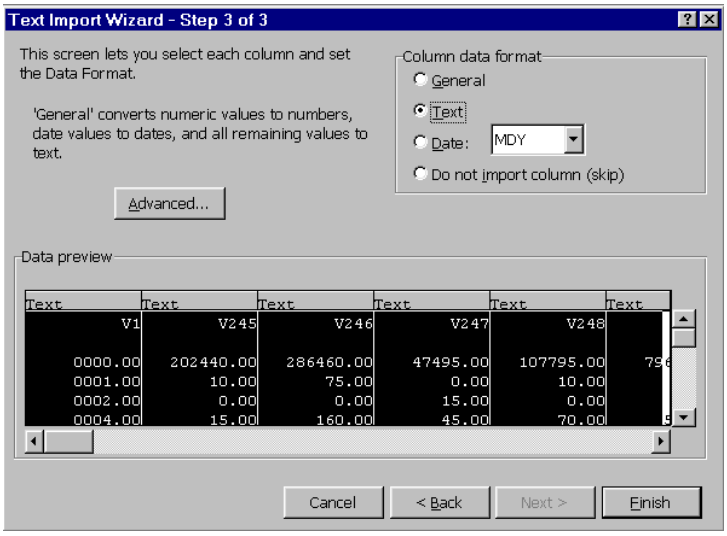
The **Text Import Wizard Step 2 of 3** should *appear*.

At this stage, one can adjust the column breaks. For this case, since we selected **FIXED WIDTH** in **Step 1 of 3**, the data automatically aligns properly (See figure below). To change the columns breaks, if neccessary, just follow the instructions on the screen. Click on ***NEXT*** to proceed.



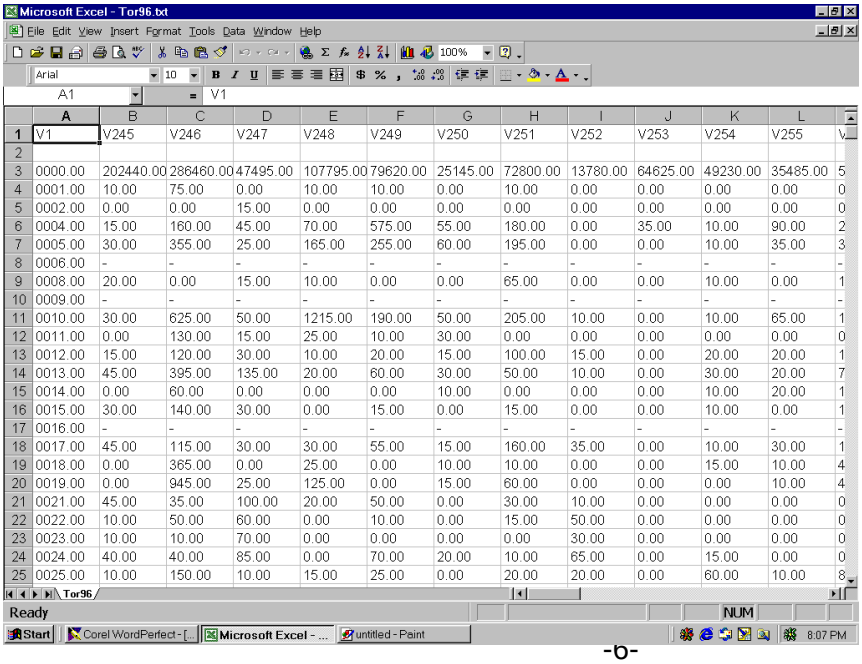
The **Text Import Wizard Step 3 of 3** should *appear*.
Since the values are all numeric, we must change the **COLUMN DATA FORMAT** to preserve all the decimals points and the 00's after the decimal point. By default, the data format is set to **GENERAL**. This can be used, however it will eliminate any zeros after the decimal point. For example: 15.00 will appear as 15 after the conversion. Sometimes, we might need the zeros after the decimal point. The way to preserve the zeros is to change the column data format to **TEXT**.

Click on the first column to highlight the field. Then, while holding down the Ctrl key, scroll to the last column and click on it as well while still holding down the Ctrl key. This will highlight all the columns. Once all the columns are selected, under the **COLUMN DATA FORMAT** field, select **TEXT** (See figure below for a screenshot).



Click on **NEXT**.

When done, your spreadsheet should look like the following:



	A	B	C	D	E	F	G	H	I	J	K	L
1	V1	V245	V246	V247	V248	V249	V250	V251	V252	V253	V254	V255
2												
3	0000.00	202440.00	286460.00	47495.00	107795.00	79620.00	25145.00	72800.00	13780.00	64625.00	49230.00	35485.00
4	0001.00	10.00	75.00	0.00	10.00	10.00	0.00	10.00	0.00	0.00	0.00	0.00
5	0002.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0004.00	15.00	160.00	45.00	70.00	575.00	55.00	180.00	0.00	35.00	10.00	90.00
7	0005.00	30.00	355.00	25.00	165.00	255.00	60.00	195.00	0.00	0.00	10.00	35.00
8	0006.00	-	-	-	-	-	-	-	-	-	-	-
9	0008.00	20.00	0.00	15.00	10.00	0.00	0.00	65.00	0.00	0.00	10.00	0.00
10	0009.00	-	-	-	-	-	-	-	-	-	-	-
11	0010.00	30.00	625.00	50.00	1215.00	190.00	50.00	205.00	10.00	0.00	10.00	65.00
12	0011.00	0.00	130.00	15.00	25.00	10.00	30.00	0.00	0.00	0.00	0.00	0.00
13	0012.00	15.00	120.00	30.00	10.00	20.00	15.00	100.00	15.00	0.00	20.00	20.00
14	0013.00	45.00	395.00	135.00	20.00	60.00	30.00	50.00	10.00	0.00	30.00	20.00
15	0014.00	0.00	60.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	10.00	20.00
16	0015.00	30.00	140.00	30.00	0.00	15.00	0.00	15.00	0.00	0.00	10.00	0.00
17	0016.00	-	-	-	-	-	-	-	-	-	-	-
18	0017.00	45.00	115.00	30.00	30.00	55.00	15.00	160.00	35.00	0.00	10.00	30.00
19	0018.00	0.00	365.00	0.00	25.00	0.00	10.00	10.00	0.00	0.00	15.00	10.00
20	0019.00	0.00	945.00	25.00	125.00	0.00	15.00	60.00	0.00	0.00	0.00	10.00
21	0021.00	45.00	35.00	100.00	20.00	50.00	0.00	30.00	10.00	0.00	0.00	0.00
22	0022.00	10.00	50.00	60.00	0.00	10.00	0.00	15.00	50.00	0.00	0.00	0.00
23	0023.00	10.00	10.00	70.00	0.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
24	0024.00	40.00	40.00	85.00	0.00	70.00	20.00	10.00	65.00	0.00	15.00	0.00
25	0025.00	10.00	150.00	10.00	15.00	25.00	0.00	20.00	20.00	0.00	60.00	10.00

5(d). To *save* changes, go to

File > Save As > C:\Temp\Tor96-3.dbf (dBase Files). *Select* **Save**, then **Yes.**

E. Opening The Data File In ArcView

Open ArcView *Start > ESRI > ArcView GIS 3.2*

1. Select the **Open Theme Table** button (5th button, middle row, left of the binoculars button).

2. Now *minimize* the **View1** window. And *reduce* the **Attributes of Gct_535b** window.

3. From the **Untitled Menu** *select* **Tables** then *select* **Add**. From the **Add Table** window *select* the ***.dbf file (in this example use Tor96-3.dbf)** that you want to join.

4 (a). From the **Main Menu** *select* **Table > Start Editing** (make sure **Tor96-3.dbf** is active, the header will be blue if it is active).

4 (b). From the **Main Menu** *select* **Edit > Add Field.**

4 (c). From the **Field Definition** window *change* the **Name** to **ct_name**, the **Type** to **String** and the **Width** to **7**.

4 (d) The new field **ct_name** should be *highlighted*, if it not then *click* on it.

4 (e) From the **Main Menu** *select* **Field > Calculate.** From **Fields** *double-click* on **V1**; From **Type** *select* **String**; From **Request** *scroll down* to **Right** and *double click* on it; Finally **between the brackets** in the **equation box** *put* **7.** *Select* **OK.**

This will convert 0001.00 (5351012) 00000 into 0001.00

4 (f). From the **Main Menu** *select* **Table > Stop Editing > Yes.**

F. Preparing The Files To Be Joined

You can join a database table to an ArcView table (e.g., a shapefile theme's attribute table), if they share a common fields of values. All of the rows selected by the database table's query can be joined to the ArcView table.

To join a database table to an ArcView table

1 Open the database table; if the table's window is already open, make it active.
2 Click on the common field's name in the database table to make the field active.
3 Open the ArcView table; if the table's window is already open, make it active.
4 Click on the common field's name in the ArcView table to make the field active.

5 Click the Join button .

The contents of the ArcView table changes to include the joined attributes from the database table while the database table remains open and unchanged.
The joined attributes are not permanently part of the ArcView table. ArcView gets the joined attributes from the database using a join query taken from the database table's query at the time of the join. If the values in the database change you can see those changes by refreshing the joined table. When you open a saved project, ArcView will recreate the join and retrieve the appropriate values into the local table.

The join query is not linked to the database table's query. After joining a database table and a local table, if you change the database table's query in a way that affects which rows are joined, the rows joined to the local table won't change when you refresh its values. To update which records are joined, you need to remove the join from the local table then join the tables again following the steps above.

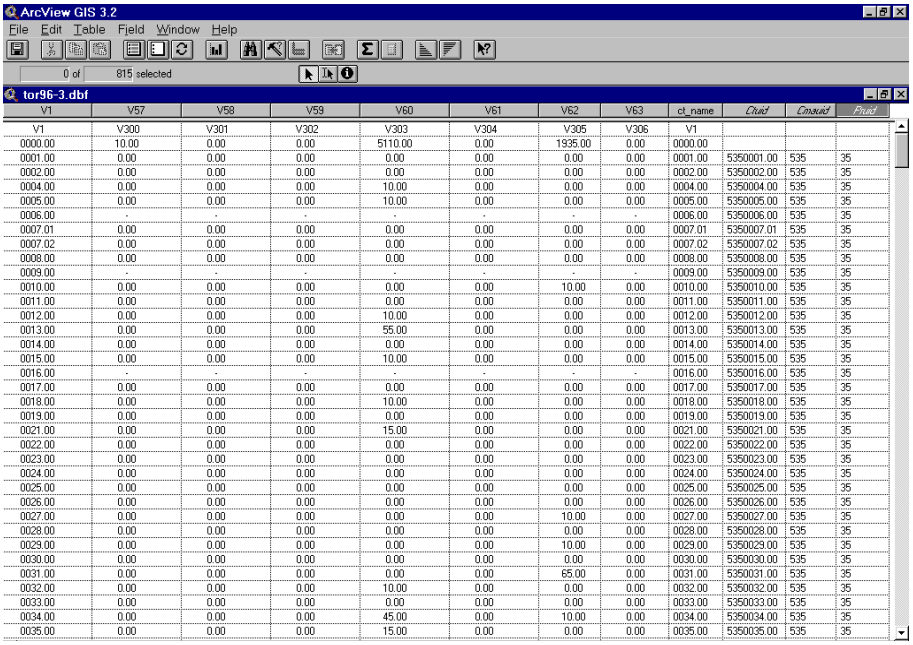
5 (a). Make the **tor96-3.dbf** window active.

5 (b). *Click* on the field labelled **ct_name.** Now sort datafile records in ascending order (3rd last button in the middle row).

5 (c). Make the **boundary file (Attributes of Gct_535b)** window *active*. *Click* on the field labelled **Ctname,** to which the datafile will be joined. Sort boundary file records in ascending order.

5 (d). Make sure that the **boundary file (Attributes of Gct_535b)** is file is *active*. From the **Main Menu** *select* **Table > Join**. The **tor96-3.dbf file** should *disappear*. *Scroll* along the *boundary file* to see if the ***.dbf file** data fields are present.

If this was done correctly the new table should look like this:



V1	V57	V58	V59	V60	V61	V62	V63	ct_name	Cluid	Cmuid	Entry
V1	V300	V301	V302	V303	V304	V305	V306	V1			
0000.00	10.00	0.00	0.00	5110.00	0.00	1935.00	0.00	0000.00			
0001.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0001.00	5350001.00	535	35
0002.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0002.00	5350002.00	535	35
0004.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0004.00	5350004.00	535	35
0005.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0005.00	5350005.00	535	35
0006.00	.	.	.	.	.	.	.	0006.00	5350006.00	535	35
0007.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0007.01	5350007.01	535	35
0007.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0007.02	5350007.02	535	35
0008.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0008.00	5350008.00	535	35
0009.00	.	.	.	.	.	.	.	0009.00	5350009.00	535	35
0010.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0010.00	5350010.00	535	35
0011.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0011.00	5350011.00	535	35
0012.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0012.00	5350012.00	535	35
0013.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00	0013.00	5350013.00	535	35
0014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0014.00	5350014.00	535	35
0015.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0015.00	5350015.00	535	35
0016.00	.	.	.	.	.	.	.	0016.00	5350016.00	535	35
0017.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0017.00	5350017.00	535	35
0018.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0018.00	5350018.00	535	35
0019.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0019.00	5350019.00	535	35
0021.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0021.00	5350021.00	535	35
0022.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0022.00	5350022.00	535	35
0023.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0023.00	5350023.00	535	35
0024.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0024.00	5350024.00	535	35
0025.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0025.00	5350025.00	535	35
0026.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0026.00	5350026.00	535	35
0027.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0027.00	5350027.00	535	35
0028.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0028.00	5350028.00	535	35
0029.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0029.00	5350029.00	535	35
0030.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0030.00	5350030.00	535	35
0031.00	0.00	0.00	0.00	0.00	0.00	65.00	0.00	0031.00	5350031.00	535	35
0032.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0032.00	5350032.00	535	35
0033.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0033.00	5350033.00	535	35
0034.00	0.00	0.00	0.00	45.00	0.00	10.00	0.00	0034.00	5350034.00	535	35
0035.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0035.00	5350035.00	535	35

G. Mapping The Data From The Newly Created Theme

1. Now *double-click* anywhere on **Tor96-3.shp** theme, and a **Legend Editor** window should appear.

2. In **Legend Type** *change* it from **Unique Value** to **Graduated Colour**, by *scrolling up*.

3. In the **Classification Field** *change* it from **None** to **Total_po**. By default ArcView has broken down the data into 5 ranges. Now *select* **Apply**. Then *select* the **X** in the top right hand corner of the **Legend Editor** window, to close it.

Now we have a theme displaying the **Total Population By Census Tract**.

4 (a). If you are not satisfied with the colour schemes or the ranges, then *double-click* anywhere on **Torctage.shp** theme, and a **Legend Editor** window should appear again.

4 (b). If you want to change the colour schemes, then at the bottom of the window *change* the **Color Ramps** from **Red monochromatic** to what ever colour scheme you want, by *scrolling down*. After you have chosen your colour scheme then *select* **Apply**.

4 (c). If you want to change the number of ranges, then from the **Legend Editor** window, *select* **Classify > Number of classes** change it from **5** to what ever value you want, by *scrolling down*, then *select* **OK**.

H. Preparing The Layout For Printing

1. First let's prepare the legend. From the **Main Menu Bar** *select* **Theme > Properties**. A **Theme Properties** window should *open*. *Change* the **Theme Name** from **Torctage.shp** to **Population**, then *select* **OK**. This doesn't change the name of the file on disk, it just changes it for the purpose of this View.

2. Again from the **Main Menu Bar** *select* **View > Layout >Landscape > OK.**

Now in the window titled **Layout 1** there are 5 objects: Title, Legend, North Arrow, Scale Bar and the Theme.

3 (a). First lets *double-click* the words **View1,** then *type* **1996 Total Population of the Toronto CMA By Census Tract.**

3 (b). To *change* the size of the font, *press* **Ctrl** and **P** at the same time. Then *change* the **Size** to **36**. Then quit the **Font Palette**. Now *centre* the title between the blue border.

3 (c). Now *select* the **theme (map)**. To *enlarge* the **theme** *grab* any one of the **four black square dots**, and then *drag* them.

3 (d). Once you have made the **theme** larger, then you must *centre* it on the **layout**.

3 (e). Once you have *centred* the **theme**, then *right click* any where outside the borders of the **layout**, and *select* **Refresh View Frames.**

4. Next you will *double-click* on the **scale bar**. A **Scale Bar Properties** windows will *open up. Change* the **Units** to **Kilometers**, by *scrolling down*. *Change* the **Interval** to **50**. Finally, *change* the **Left Divisions** to **0**. Now *select* **OK**. Now *centre* the **scale bar** on the bottom of the **layout**.

5 (a). *Double-click* on the **North Arrow**, a **North Arrow Manager** window will *appear*. You might want to *select* a simpler **north arrow**, like the first one on the second row, now *select* **OK**.

5 (b). Now *move* the **north arrow** to the top right of the **layout**. This **north arrow** appear to be to large, so we will have to *reduce* it. *Select* the **north arrow**, now *grab* one of the **four black square dots** and *reduce* the **arrow** by *bringing* the **dots** *closer together*.

6. Now *select* the **legend**, and *move* it down to the bottom right corner of the **layout**.

7. You might want to *align* the **legend** and the **north arrow**. First *select* the **Legend**, now *hold down* the **shift key** on the **keyboard**, and *select* the **north arrow**. Now *press* **Ctrl** and **A** at the same time, and *select* **align centre (>|<)** at the top.

8. Now you are ready to print. **File > Print > OK.**

I. Jazz Up Your Map Or Correct Mistakes

1. From the **Main Menu Bar** *select* **Window > View1.**

Suppose you want to get rid of some census tracts

2 (a). From the **Main Menu Bar** *select* **Theme > Start Editing.** *Select* the **Pointer Tool (Black Arrow)**. Now *draw* a box that encapsulates the census tracts that you want to remove. This is done by *selecting* an blank area left of the census tracts then *dragging* the box down and right so all the census tracts you want removed are in the box. Now *release* the button, and *select* **delete**.

2 (b). Now we will save our edits. **Theme > Save Edits As.** We will save it to the **C:\esri\tordcf** directory as **torctage-new.shp**. **Theme > Stop Editing > Yes.**

2 (c). Lets *zoom-in* to this new **theme**. This is easily done by *selecting* the **Zoom To Active Theme(s)** Tool (in the middle row the 10th tool button, look like an arrow pointing down with 2 white pages, with a grey one in between).

2 (d). Make sure the **torctage-new.shp theme** is active. The **active theme** is the one that appear is be raised. If you select any where on the **Population theme**, then it is now the **active**

theme. Since we are not going to use this **theme** any more we can *delete* is by making it **active**, and *selecting* **Edit > Delete Themes > Yes.**

2 (e). So let's *select* **Theme > Properties**. *Change* the **Theme Name** from **torctage-new.shp** to **Population**. Then *select* **OK**.

3. From the **Main Menu Bar** *select* **Window > Layout1.**

Now your new theme has been added into your old layout, even the scale bar has changed for the new theme. When you last printed you noticed that the blue border you saw on the screen did not appear on the map. This is your layout border so you your working area.

4. To add a border *select* the **Neatline Tool** (3rd last tool on the second row, looks like a white rectangle. A **Neatline Settings window** *opened*, *select* **Inset from margins.** It's up to you if you want to *change* any of the other **Appearance settings.** If not, then *select* **OK.**

5. Now you are going to have to make sure that all 5 object are inside your border (inside black border).

6. When it you are trying to move objects around you will notice that they don't move to the exact point where you want them. To change this *select* **Layout > Properties**. Then *un-select* **Snap to Grid**. Now you can move your object around freely.

7. Another point, sometimes in the layout when you move an object around it appears that it has not moved or part of it was left behind, you can either *right-click* and **Refresh View Frames**. Or you and go to **Window > View1** and the back to **Window > Layout1**, and everything should be cleaned up.

8. If you have deleted your north arrow by mistake and want to add another then *select* the **Frame Tool** (last tool on the bottom row). *Hold down* the **tool** while you move down to the **north arrow icon**. You will know the **north arrow** has been *selected* because it will be the icon on top. Then just create a box in the **layout** and that's where your **north arrow** will appear.

Joining Beyond 20/20 Data To ArcView

A. Getting Geographic Data

1. *Download* the self-extracting **MapInfo Format Digital Cartographic File for the Census Tract Level**, available from the **Data Library: Census 1996 Spatial Data Files** webpage. For **Toronto CMA**, this file is **gct_535b.exe**, *located* at the address below. *Save* this file to **C:\Temp\gct_535b.exe**.

http://www.chass.utoronto.ca/datalib/cc96/georef96.htm#cma

2. *Extract* the **spatial data file** by *double-clicking* the file (**gct_535b.exe**). Once the **DOS-Window** states **Finish - gct_535b** on the top, you can *close* the window.

B. Getting Attribute Census 1996 Data

1. You may *download* the data from **Census of Canada, 1996: Profile Series** located at the site listed below:

http://www.chass.utoronto.ca/datalib/cc96/profil96.htm

There are nine categories of data available:

Part 1: age & sex & families data: population 1991 & 1996, land area, population by sex and age groups, legal marital status, census families by structure, lone-parent families by sex of parent, never-married sons and/or daughters, persons in private households, persons 65 and over, occupied private dwellings by structure, households by household size.

Part 2: immigration & citizenship (20% data): citizenship, place of birth, immigrants by country of birth, period of immigration, age at immigration.

Part 3: mother tongue, home language, & knowledge of official languages (20% data): mother tongue, knowledge of official languages, first official language spoken, home language, knowledge of non-official languages.

Part 4: aboriginal population by type of response (3), and major single response categories.

Part 5: ethnic origin by type of response (3).

Part 6: labour market activities, occupation and industry, household activities, place of work and mode of transportation.

Part 7: education, mobility and migration.

Part 8: sources of income, family and household income.

Part 9: families: social & economic, occupied private dwellings, and housing costs.

These categories are available at six geographic levels:

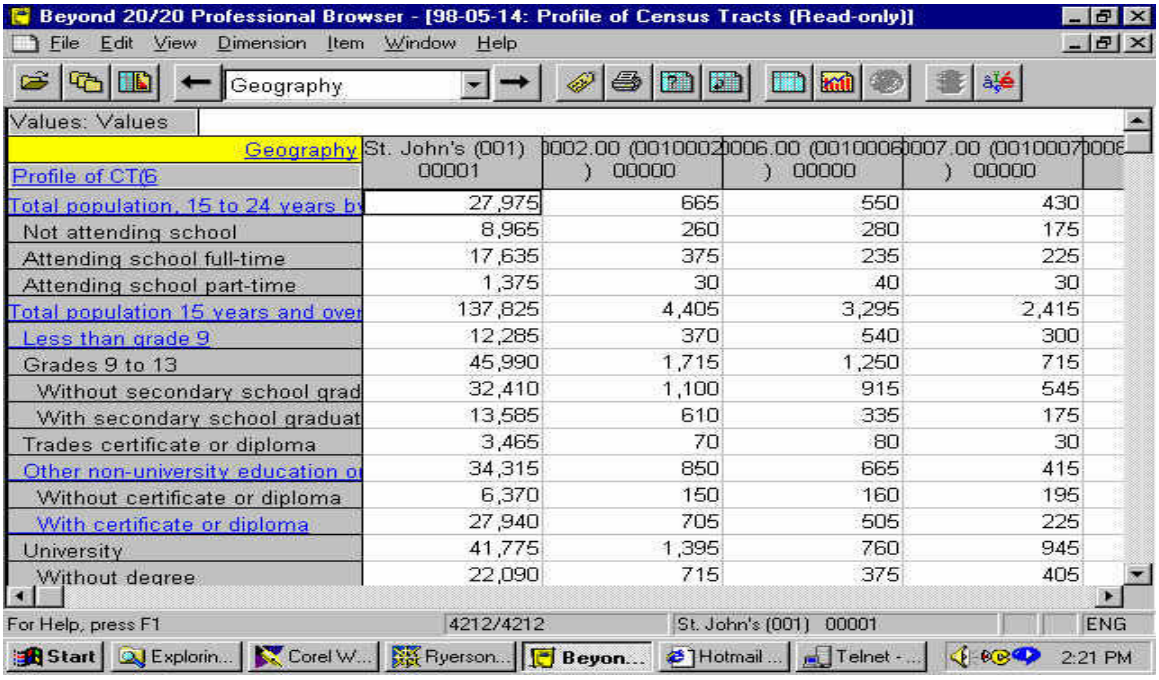
A. Census Metropolitan Area (CMA) / Census Agglomeration (CA)
B. Census Subdivision (CSD)
C. Census Tract (CT)
D. Federal Electoral District (FED) (1996 Representation Order)
E. Enumeration Area (EA) (1987Representation Order)
F. Forward Sortation Area (FSA)

1(a). For this exercise we will use **Part 7: education, mobility and migration** at the **C. Census Tract (CT) Level**, therefore, *select* **PR7CT.IVT**.

1(b). Then *select* **Open It**, and then **OK**.

A **Beyond 20/20 Professional Browser**, should *open*.

The first task is to *switch* the position of the **Columns** and the **Rows**. The **Census Metropolitan Areas** with their **census tract numbers** should be at the side, while the variables should be along the top.



2. *Select* the **Geography** heading, now *hold* the **button** *down* and *drag* it over to the heading that says **Total population, 15 to 24 years by school attendance (20% sample)**. Then *release* the **button**, now the **Census Metropolitan Areas** with their **census tract numbers** are in the left column.

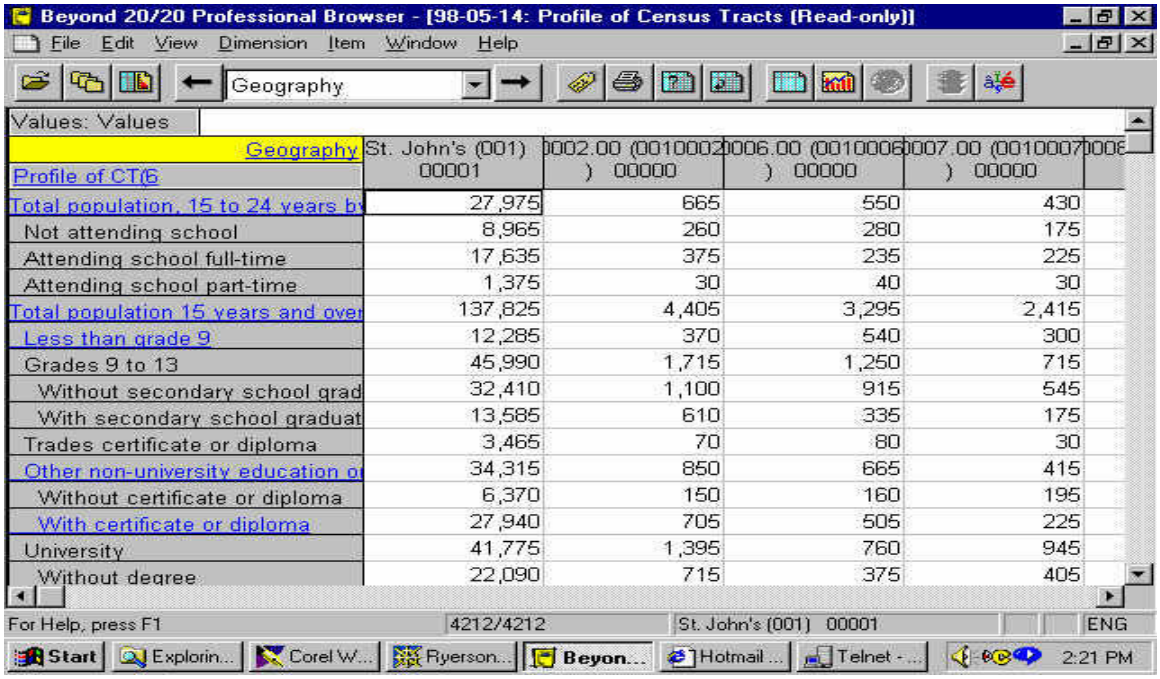
2(a). Make sure the **Geography** heading is *highlighted* in yellow. From the **Main Menu Bar**

select **Dimension > Search**.

Field = English Desc
Text to Find = 535
Type of Selection = Reduce

2(b). We only want **Census Tracts** which are within the **Toronto Census Metropolitan Area**, so we will *hide* the extras.

Highlight the **2 census tracts** above the heading **Toronto (0279.00 & 0127.00)**
From the **Main Menu Bar** *select* **Item > Hide**
Highlight **Toronto (535) 00001**
From the **Main Menu Bar** *select* **Item > Hide**
Now *scroll down* to the **bottom** of the **data** and *highlight* the **last 4 census tracts 0005.02, 0330.00, 0001.01 & 0535.00)**
From the **Main Menu Bar** *select* **Item > Hide**



The ones we have hidden don't start with **535** with the number in brackets, ie **0593.00 (5355082) 00001**. So now if you *scroll* the table from top to bottom there should only be **census tracts** that in the brackets start with **535**.

2(c). From the **Main Menu Bar** *select* **File > Save As > C:\Temp\Data.dbf** (Make sure you *change* **List Files of Type to dBase File (*.dbf)**

2(d). *Select* **OK** and again **OK** when it says **"Duplicate code(s) detected, unique codes will be generated"**

3. *Open* **Microsoft Excel**

3(a). **File > Open > C:\Temp\Data.dbf > Open** (Make sure you *change* **Files of Type to dBase Files (*.dbf**)

3(b). *Select* **Column A** (Make sure the entire column is *highlighted*)

From the **Main Menu Bar** *select* **Data > Text to Columns**
The **Convert Text to Columns Wizard - Step 1 of 3** should *open*.
For **Original Data Type** = **Fixed Width**
Click **Next**

The **Convert Text to Columns Wizard Step 2 of 3** should *open*
Under the **Column Data Format** heading *Select* **Text**
Click **Next**

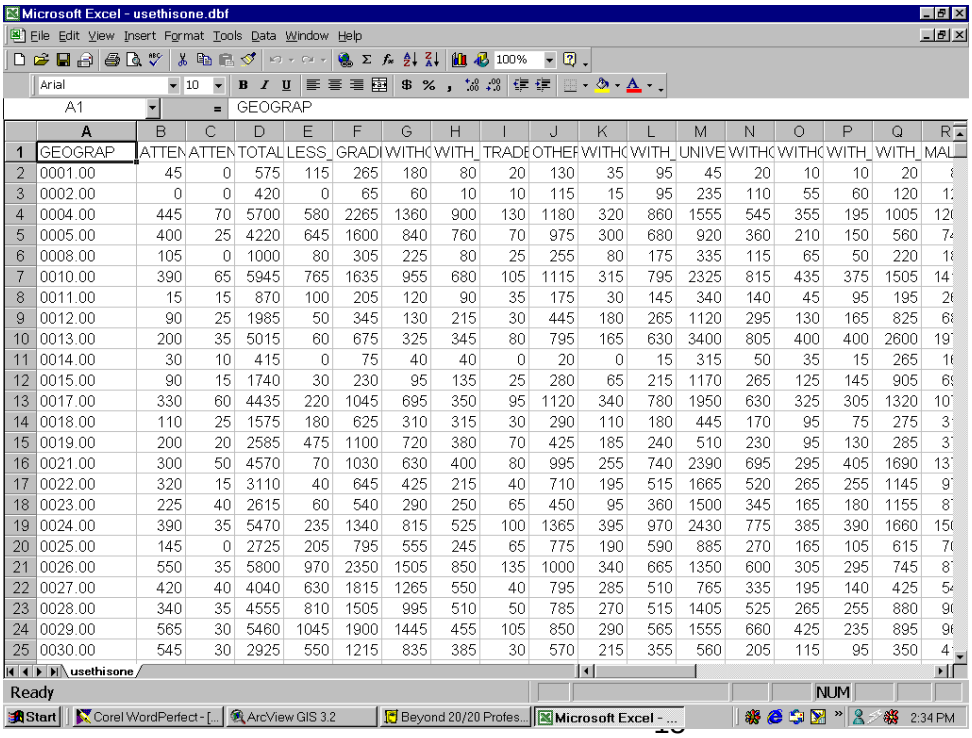
The **Convert Text to Columns Wizard Step 3 of 3** should *open*
Click **Finish**
Select **OK** for the **"Do you want to replace the contents of the destination cells?"**

3(c). *Highlight* **Columns B & C**. Then **Edit > Delete > Columns B & C**

3(e). *Highlight* the entire **worksheet** by *selecting* the **grey cell** above the **Row 1**, and left of **Column A**.

From the **Main Menu Bar** *select* **Data > Sort**
Sort By = GEOGRAP
Select Ascending
Select **OK**

3(f). **File > Save As > .dbf file (Data Base File).** *Select* **Save**, then **Yes.**



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	GEOGRAP	ATTEN	ATTEN	TOTAL	LESS_	GRADI	WITHC	WITH_	TRADE	OTHEF	WITHC	WITH_	UNIVE	WITHC	WITHC	WITH_	WITH_	MAL
2	0001.00	45	0	575	115	265	180	80	20	130	35	95	45	20	10	10	20	
3	0002.00	0	0	420	0	65	60	10	10	115	15	95	235	110	55	60	120	1
4	0004.00	445	70	5700	580	2265	1360	900	130	1180	320	860	1555	545	355	195	1005	12
5	0005.00	400	25	4220	645	1600	840	760	70	975	300	680	920	360	210	150	560	7
6	0008.00	105	0	1000	80	305	225	80	25	255	80	175	335	115	65	50	220	1
7	0010.00	390	65	5945	765	1635	955	680	105	1115	315	795	2325	815	435	375	1505	14
8	0011.00	15	15	870	100	205	120	90	35	175	30	145	340	140	45	95	195	2
9	0012.00	90	25	1985	50	345	130	215	30	445	180	265	1120	295	130	165	825	6
10	0013.00	200	35	5015	60	675	325	345	80	795	165	630	3400	805	400	400	2600	19
11	0014.00	30	10	415	0	75	40	40	0	20	0	15	315	50	35	15	265	1
12	0015.00	90	15	1740	30	230	95	135	25	280	65	215	1170	265	125	145	905	6
13	0017.00	330	60	4435	220	1045	695	350	95	1120	340	780	1950	630	325	305	1320	10
14	0018.00	110	25	1575	180	625	310	315	30	290	110	180	445	170	95	75	275	3
15	0019.00	200	20	2585	475	1100	720	380	70	425	185	240	510	230	95	130	285	3
16	0021.00	300	50	4570	70	1030	630	400	80	995	255	740	2390	695	295	405	1690	13
17	0022.00	320	15	3110	40	645	425	215	40	710	195	515	1665	520	265	255	1145	9
18	0023.00	225	40	2615	60	540	290	250	65	450	95	360	1500	345	165	180	1155	8
19	0024.00	390	35	5470	235	1340	815	525	100	1365	395	970	2430	775	385	390	1660	15
20	0025.00	145	0	2725	205	795	555	245	65	775	190	590	885	270	165	105	615	7
21	0026.00	550	35	5800	970	2350	1505	850	135	1000	340	665	1350	600	305	295	745	8
22	0027.00	420	40	4040	630	1815	1265	550	40	795	285	510	765	335	195	140	425	5
23	0028.00	340	35	4555	810	1505	995	510	50	785	270	515	1405	525	265	255	880	9
24	0029.00	565	30	5460	1045	1900	1445	455	105	850	290	565	1555	660	425	235	895	9
25	0030.00	545	30	2925	550	1215	835	385	30	570	215	355	560	205	115	95	350	4

C. Editing Geographic File's Table

1. *Double-Click* on the **ArcView GIS 3.2** icon or *select* **Start > Programs > ESRI > ArcView GIS 3.2**

2. In the **Welcome to ArcView GIS window** *select* **with a new View**, then *select* **OK**.

3. In the **Add data window**, it asks you **Would you like to add data to the View now**, *select* **Yes**.

4. In the **Add Theme window**, *select* **gct_535b**. Then *select* **OK**.

5. Now *maximize* the window titled **View1**, then *maximize* the window titled **ArcView GIS 3.2.**

6. *Select* the little grey box left the word **gct_535b** .

7. Click on **Theme** > **Table** > a window titled Attributes of gct_535b should open

8 (a). Currently, the CTName field in the geographic data table is in a different numeric format than the equivalent field in the census data table. It therefore must be reformatted to match. We will add a new empty field to the table.

(b) From the **Main Menu Bar** *select* **Table > Start Editing**
Once the editing function has been activated *select* **Edit > Add Field**

(c) From the **Field Definition** window *change* the **Name** to **ct_name**, the **Type** to **String** and the **Width** to **7**. The new Column **ct_name** should be there. We will now populate the empty column with matching CTName values in numeric format.

(d) The new field **ct_name** should be *highlighted*, if it not then *click* on it.

(e) From the **Main Menu** *select* **Field > Calculate.** From **Fields** *double-click* on **Ctname** (or which ever field contains the ct numbers); From **Type** *select* **String**; From **Request** *scroll down* to **Right** and *double click* on it; Finally **between the brackets** in the **equation box** *put* **7.** *Select* **OK.**

This will convert 0001.00 (5351012) 00000 into 0001.00

D. Preparing The Files To Be Joined

1(a). Make the *.dbf window active.

1(b). Click on the field labelled ct_name. Now sort datafile records in ascending order (3rd las button in the middle row).

1(c). Make the boundary file (Attributes of Gct_535 b) is active. From the Main Menu select Table >Join. The tor 96-3.dbf file should disappear. Scroll along the boundary file to see if the *.dbf file data fields are present.