TPL*Tables*® for Windows

Tutorial

WHAT CAN YOU DO WITH TPL TABLES?

TPL Tables lets you analyze your data and produce publication quality statistical tables. It can tabulate large and small amounts of data and produce tables that range in size from a few lines to hundreds of pages. You can do tabulations in an endless variety of ways, and you have complete control over the structure and content of your table output.

TPL Tables automatically formats your output into quality tabular reports. Optionally, you can take precise control of format details such as labels and titles, column widths, footnotes, fonts and colors. You can do this interactively with the results viewable on your screen.

PURPOSE OF THIS TUTORIAL

This tutorial is intended to get you started in creating tables. You will learn how to:

- Start up TPL Tables

- Create a simple table request interactively

- Run a job to produce one or more tables

- Edit a table interactively

- Export a table for use with other software

We will only touch the surface of the many things you can do, but our goal is to introduce you to the basics and take you through the complete process to produce a table. Once you get familiar with the basics, you should be able to go quickly.

WHAT YOU NEED TO PRODUCE TABLES

The ingredients needed to create tables are:

- a **data file**
- a **codebook** that describes the data file, and
- a **table request** that describes the desired tables.

An optional ingredient is:

- a **format request** that makes changes to the default
  table formats.

You can create and modify these files using the interactive features in TPL Tables. A big advantage of using the interactive tools is that you do not need to know the syntax of TPL statements. You can also create or edit codebooks, table requests, and format requests, using any editor that creates stand-alone ASCII text files.

For this tutorial, the data and codebook are provided. We will create a table request and format request interactively.

The Data

The tutorial data is an extract from a CPS data file. CPS stands for Current Population Survey, a survey conducted by the U.S. Bureau of the Census. The extract is a 1 mb file containing data collected from 30,000 households. Each record contains information about one household: state of residence, household income, number of children in the household, sex of head of household, education level of head of household, and so on.

The Codebook

Codebooks contain information such as variable names, locations, sizes, and code values. Once you have a codebook for your data, you can use it over and over again.

In the codebook, you assign types to variables, depending on how you want to use them in tables. For variables that are coded or can otherwise be used to define categories, you would assign a type of **CONTROL** (or CON). An example is state, where each state has a state code value. For numeric variables that can be aggregated or used in other computations, you would assign a type of **OBSERVATION** (or OBS). An example is household income.

The Table Request

The table request describes the tables you want. You can reference any of the variables in your codebook by name. In addition, you can select subsets of the data file, compute new variables and define new categories for existing variables.

The Format Request

TPL Tables automatically formats your tables. If you wish, you can create a format request to make changes to the default formats. For example, you may want to change the columns widths, edit a table title, add a footnote, or rotate a table to landscape.

LET'S GET TO THE ACTION

Start TPL Tables

- If you have the demo version of TPL Tables:

Click on the "TPL 7.0 Demo" icon, or go to **Start** then **Programs** then **QQQ Software** then **TPL70 Demo** then **TPL**.

- If you have the complete TPL Tables system:

Click on the "TPL 7.0" icon, or go to **Start** then **Programs** then **QQQ Software** then **TPL70** then **TPL**.

The TPL main window will be displayed with menu options at the top.

Make sure you are in the correct directory

Select the directory (folder) where you want to do your work. For the instructions in this tutorial, you will want to be in the **Examples** subdirectory of the directory where you installed TPL Tables. If you have just installed the software, you should already be there. *On some systems you will not be able to run jobs in this directory. If this is the case, copy the files in the directory to some place where you can run jobs and set your job directory there.*

To be sure that you are in the correct directory, click on **File** in the upper, left corner of the screen, then **Job Directory**.
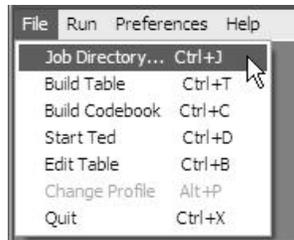
Only directories are shown in this screen, not individual files. If the correct directory is not already highlighted, browse to the correct directory. The path for the selected directory will be displayed in the space above the area showing the directory structure.
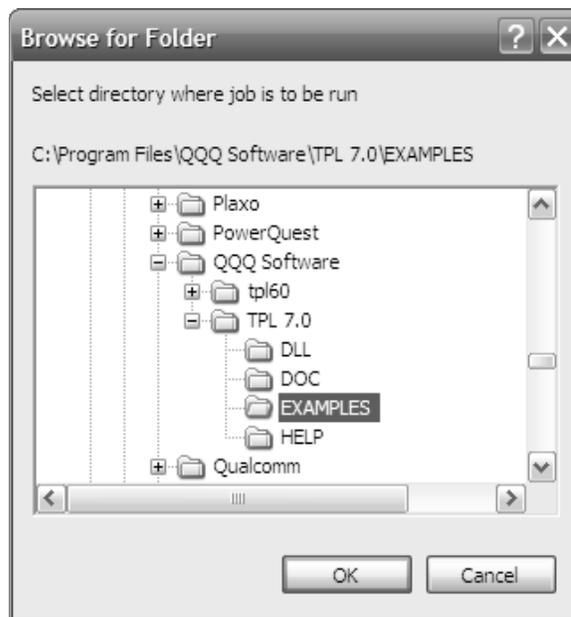
- Assume that you have the demo version of TPL Tables and have installed it in the directory **c:\program files\qqq software\TPL 7.0 Demo**. Then the selected directory should be:

C:\PROGRAM FILES\QQQ SOFTWARE\TPL 7.0 DEMO\EXAMPLES

- Assume that you have the complete TPL Tables system and have installed it in the directory **c:\program files\qqq software\TPL 7.0**. Then the selected directory should be:

C:\PROGRAM FILES\QQQ SOFTWARE\TPL 7.0\EXAMPLES

Click OK.

Go to Table Builder

From the **File** menu in the upper, left corner of the TPL screen, select **Build Table**.
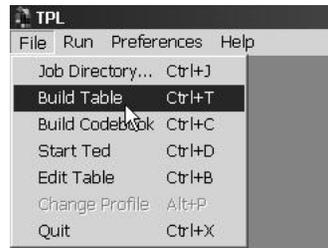
The main Table Builder screen will start up.

To create a new table request, go to **File** then **New**.

The Create Table window will open and you will be asked to select your processed codebook.
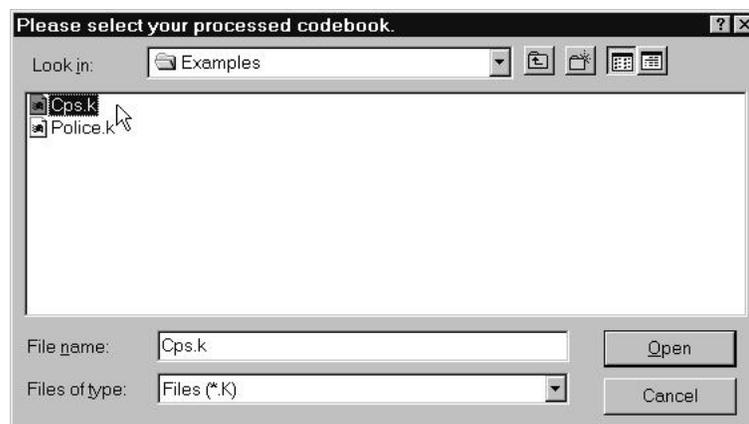
Select the file: Cps.k

(We have used the name CPS for files relating to the **C**urrent **P**opulation **S**urvey).

When you select the codebook, the variables in the codebook will be shown in a list on the screen. You will also have grids named **Wafer**, **Head** and **Stub** into which you can drag variables to build a table.
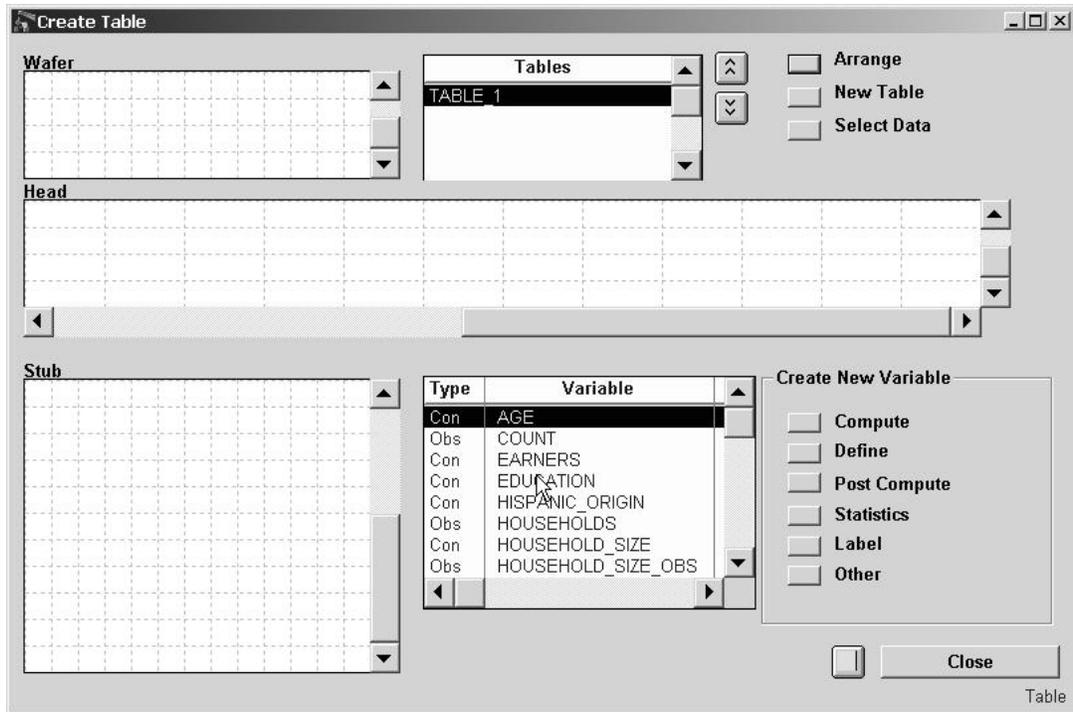
The table Head contains the variables for the heading that goes across the table. In other words, it determines the columns.

The table Stub contains the variables that go down the side of the table. In other words, it determines the rows.

The Head and Stub form the core of a table. Optionally, this core can be repeated for a "stack" of Wafers as shown in the following illustration.

```
                         ┌──────────────────────┐
                         │                      │
          WAFER 3        │                      │
                    ┌────┴─────────────────┐    │
                    │                      │    │
        WAFER 2     │                      │    │
               ┌────┴─────────────────┐    │    │
               │       HEADING        │    │    │
   WAFER 1     │                      │    │    │
               │  S                   │    │────┘
               │  T                   │    │
               │  U                   │────┘
               │  B                   │
               │                      │
               └──────────────────────┘
```
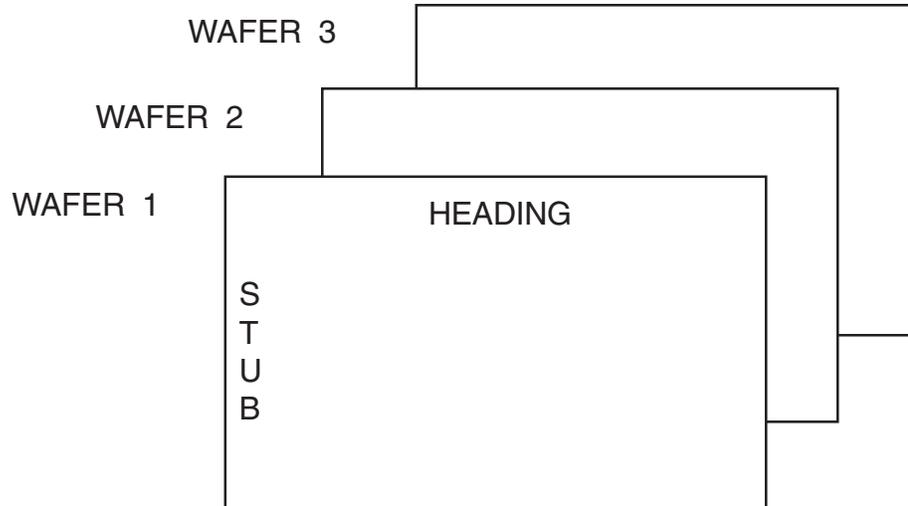
Design a Table

Many, many different tables can be requested using variables in different combinations. For a quick start, we will do a simple table.

You can use the context-sensitive Help for complete information about how variables can be arranged in a table. **To get context-sensitive Help** on the Create Table screen or any other TPL screen, position your cursor over an item on the screen, hold down your mouse button and press <F1>. For example, to get Help on how variables can be arranged in the table Stub, position your cursor in the Stub grid, hold down your mouse button, and press <F1>.

Now, *for the table Head*, select the variable HOUSEHOLD_TYPE from the list of variables (you may need to scroll up or down on the list to get to it). Position your cursor on the variable name HOUSEHOLD_TYPE, hold down the left mouse button, and drag the variable to the Head grid.
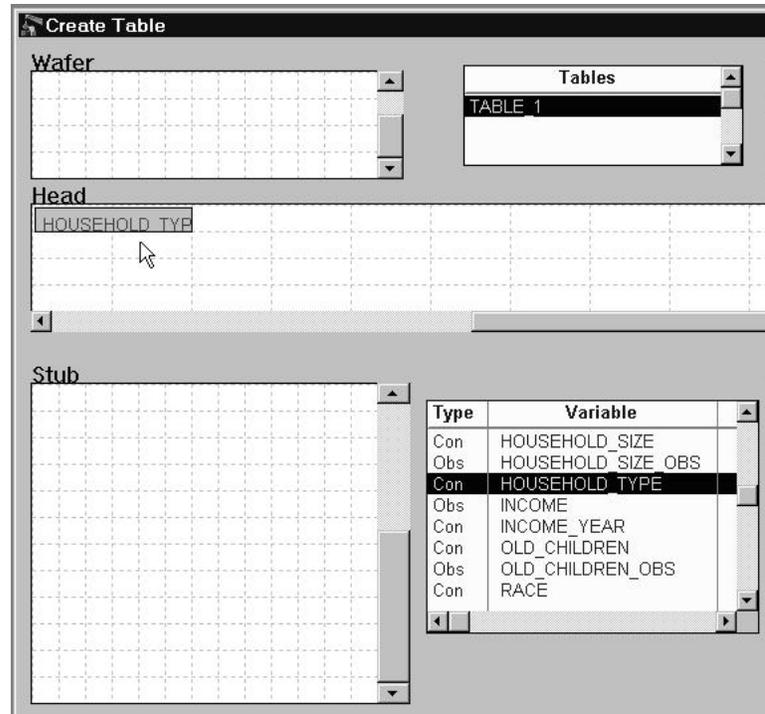
Initially, the variable will occupy only one rectangle of the grid. If the rectangle is too small to contain the complete variable name, you can position the cursor on top of the rectangle and hold down the right mouse button to get the full name displayed at the bottom of the screen.

You can also stretch the rectangle as shown in the illustration. This stretching can be used to create table headings with multiple variables as described in Table Builder Help. To see some examples, position your cursor in the Head grid, hold down your mouse button, and press <F1>.

Now, *for the table Stub*, scroll to the variable named EDUCATION on the variable list and drag it to the Stub grid.
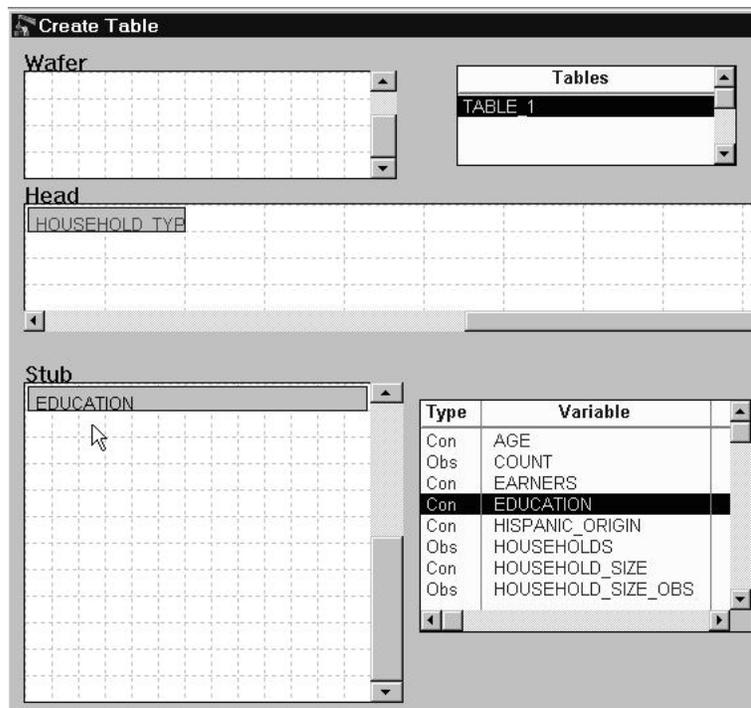
Note that for each variable in the list of variables, you can get more information by double-clicking on the variable, either in the grid or in the list of variables. Since EDUCATION has a type of CON (Control), clicking on the **Conditions** button will bring up a list of the 6 values (called *condition values*) for EDUCATION.
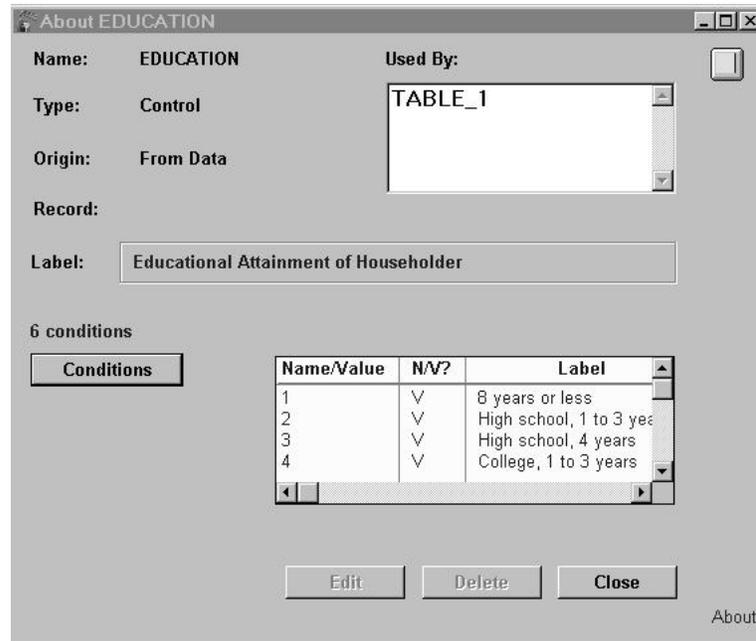
With EDUCATION in the table stub, the table will have 6 rows, one for each of the 6 values of EDUCATION.

As part of your table request, you may also select subsets of the data, define variables with new categories, and compute new variables. But, you already have everything you need to produce your first table.

From the **File** menu at the top, left corner of the screen, select **Save As....** You will be prompted to provide a File name. Enter the File name: *Tutor1.req* and click **Save**.

With your saved table request, you can now produce a table. You can also go back to Table Builder at any time, open your saved table request, and make changes to it.

From the menu bar at the top of the screen, select **Return to TPL**. You will go back to the main TPL screen.
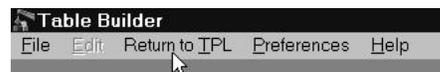
Produce the Table

To produce the table, click on the **Run** menu at the top of the main TPL screen and select **Table Request**.
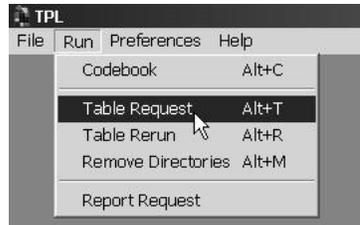
You will be asked to enter file names for the run.

Enter or browse for the names of the Request File (*tutor1.req*) and the Data File (*cps.dat*) in the Examples subdirectory. You do not need to enter a name for the optional Format File. The bottom line specifies a subdirectory where the table and other outputs for the run will be saved. If you wish, you can override the generated number on the right with your own choice. In this example, we have entered a *1*.

Note: If, at any time, you browse for file names and do not see names that match these instructions, please see the **"Note on File Extensions"** at the end of this tutorial.
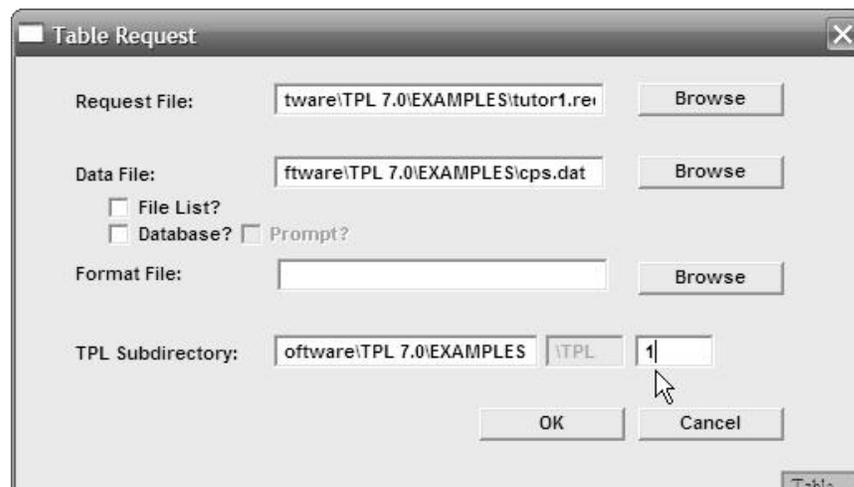
Click OK. TPL Tables will read your data and prepare the table. When it is finished, you will see a screen that looks like this:

```
Processing table job: TPL1 ...

    · · · · · · · · · · · · ·         ⌣ Request         [ Review ]
     · · · · · · · · · · ·            ⌣ Format          [ Review ]
      · · · · · · · · ·              ⌣ About Request     [ Review ]
       · · · · · ·                   ⌣ Data             [ Review ]
        · · ·                        ⌣ More Data        [ Review ]
          ·                          ⌣ Convert          [ Review ]
         · · ·                       ⌣ Display          [ Review ]
        · · · · ·
       · · · · · · ·
      · · · · · · · · ·
     · · · · · · · · · · ·
    · · · · · · · · · · · · ·

┌──────────────────────────────────────────────────────────────┐
│ Job has completed successfully.                                │
└──────────────────────────────────────────────────────────────┘

  [ Cancel Job ]        [ Edit / Print ]          [ Close ]
      ┌─ Notes ──────────────────────────────┐
      │ ┌──────────────────────────────────┐ ▲ │
      │ │                                  │   │
      │ │                                  │ ▼ │
      │ └──────────────────────────────────┘   │
              [ Save Note ]                  Status
```
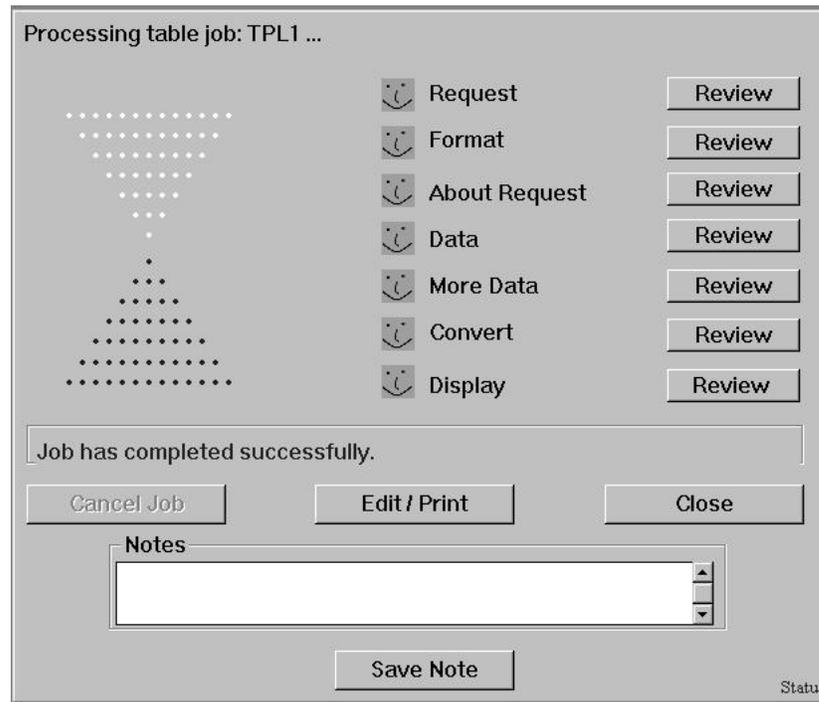
To look at the output, click on the **Edit/Print** button.

You will be transferred to TED, the TPL editor. In TED, you can view outputs, print them, edit tables interactively, and export them.

In TED, there will be two file windows open. Depending on the relative sizes of your file windows, you may see both or only the table on top. The other file is called *output* and contains information about your job.
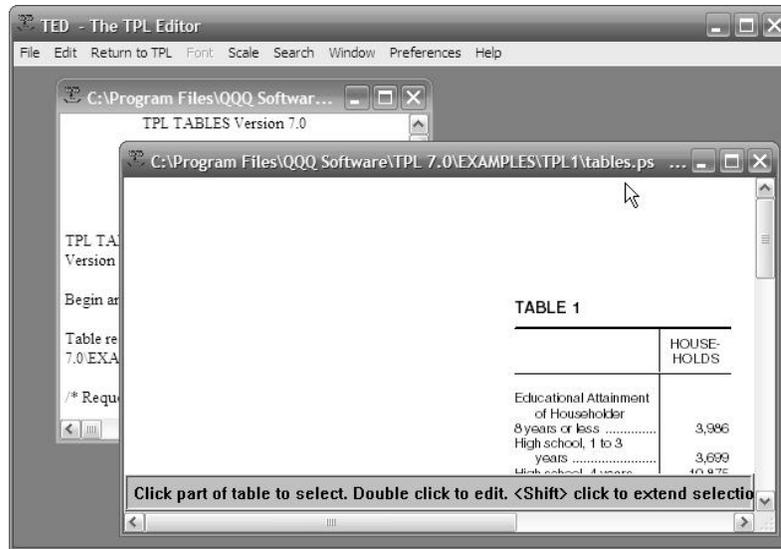
Maximize the file window with the table so that you can see the entire table. The table file is called ***tables.ps***.

TABLE 1

	Type of Household		
	Married couple	Other family	Nonfamily household
Educational Attainment of Householder			
8 years or less	1,990	699	1,297
High school, 1 to 3 years	1,935	703	1,061
High school, 4 years	6,405	1,769	2,701
College, 1 to 3 years	2,939	666	1,454
College, 4 years	2,142	268	1,056
College, 5 or more years	1,853	195	867

Notice that the table has a default title of **TABLE 1**. We could have given it a nicer title when we were in Table Builder, but we can also change it now that we have the finished table.

Edit the Table

If you double-click on any part of the table on the screen. You will be presented with options for changing the table.

To go directly to title options, double-click on the table title.

In the screen for title options, click in the box to the left of **Title**, then click on the **Edit** button below the title.

You will be transferred to the label editor where you can modify the title as you
wish.
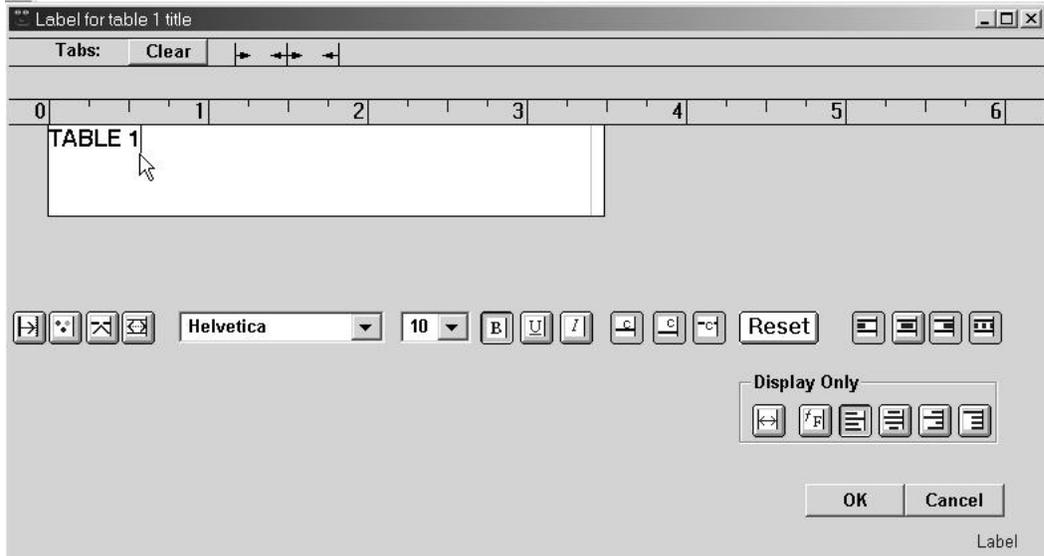
For example, replace the text with:

Tutorial Table 1 -- Households by Education and Type of Residence
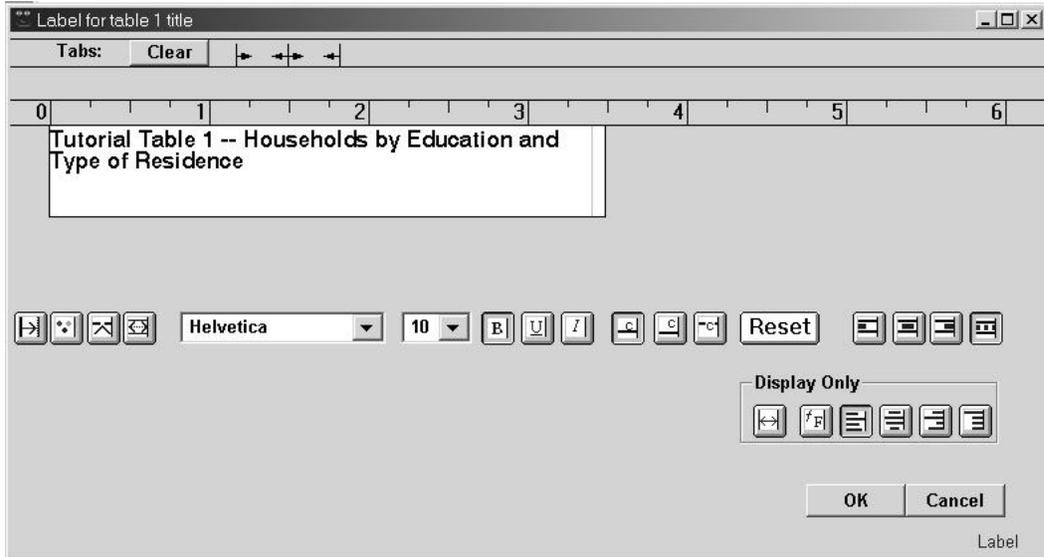
Click **OK**.

Back at the Title screen, click the **Apply** button.

The table will be re-formatted with the new title.

Tutorial Table 1 -- Households by Education and Type of Residence

	Type of Household		
	Married couple	Other family	Nonfamily household
Educational Attainment of Householder			
8 years or less	1,990	699	1,297
High school, 1 to 3 years	1,935	703	1,061
High school, 4 years	6,405	1,769	2,701
College, 1 to 3 years	2,939	666	1,454
College, 4 years	2,142	268	1,056
College, 5 or more years	1,853	195	867

For more information on interactive editing of tables, go to TED Help and choose the topic "Using Ted to Review, Edit, Print, and Export Tables" under "Getting Started". Then choose the topic "Using Ted to Format Tables".

Printing

If you wish, you can print the table from TED by going to **File** then **Print**. Although the table is PostScript, you do not need a PostScript printer to print it from TED.

Exporting

In addition to printing, you can **Export** a table file to a variety of other formats.

With the table still on the screen in Ted as the active the window, click on **File** then **Export**. You will be transferred to the Export screen.
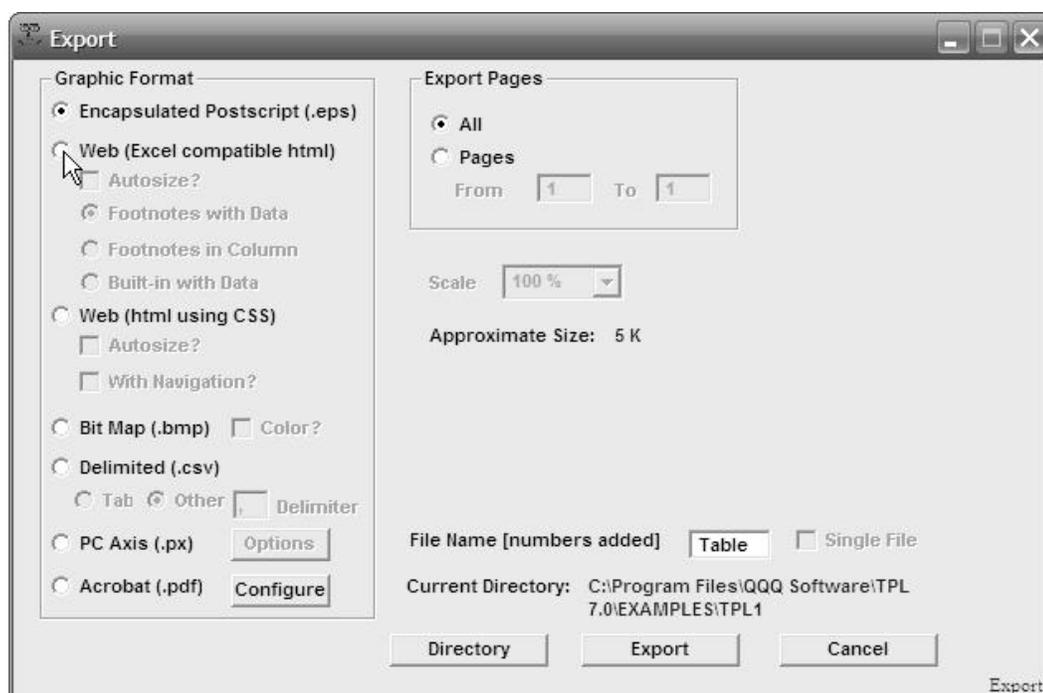
As an example, we will export an HTML file. Exported HTML files can be opened with any software that reads HTML, regardless of the export options selected. The other software could be a browser, a spreadsheet, or a word processor. These different types of software have different ways of displaying the HTML.

If you are going to open the HTML in Microsoft Excel, it will look best if it is exported using the option labeled **Web (Excel compatible html)**. To do this, simply click on this option and then click on the **Export** button.

- Assuming that you have the demo version of TPL Tables and have installed it in the directory C:\PROGRAM FILES\QQQ SOFTWARE\TPL 7.0 DEMO, the HTML file will be:

  C:\PROGRAM FILES\QQQ SOFTWARE\TPL 7.0 DEMO\EXAMPLES\Examples\ TPL1\Table1.HTM

- Assuming that you have the complete TPL Tables system and have installed it in the directory C:\PROGRAM FILES\QQQ SOFTWARE\TPL 7.0, the HTML file will be:

  C:\PROGRAM FILES\QQQ SOFTWARE\TPL 7.0\EXAMPLES\Examples\TPL1\ Table1.HTM

You may wish to open this file with some other software to see what it looks like. For example, in your web browser, you can go to **File** then **Open Page** and select the file Table1.HTM. The display will look like the following illustration, or similar to it depending on which browser you are using.

Tutorial Table 1 -- Households by Education and Type of Residence			
	Type of Household		
	Married couple	Other family	Nonfamily household
Educational Attainment of Householder			
8 years or less	1,990	699	1,297
High school, 1 to 3 years	1,935	703	1,061
High school, 4 years	6,405	1,769	2,701
College, 1 to 3 years	2,939	666	1,454
College, 4 years	2,142	268	1,056
College, 5 or more years	1,853	195	867

Finishing the Job

If you would like to save your format changes as a Format Request and reuse them in the future to re-create the table with your changes, click on **File** then **Save Format...**.
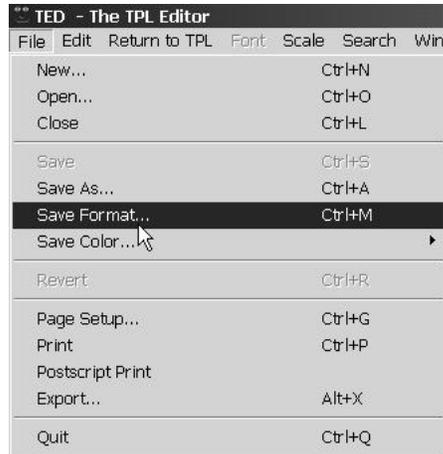
To return to the main TPL screen, click on **Return to TPL** then **Resume** in the menu bar at the top of the TED screen.

In the main TPL screen, click **Close** in the Status screen.

Now you can exit TPL with **File** then **Quit**, or you can go to Table Builder again to try another table.

NOTES ON FILE EXTENSIONS

All of the file names used in this tutorial and other TPL demonstration jobs have extensions (suffixes), such as .REQ or .DAT. If your Windows system is config- ured to hide file extensions of "known file types", you may find that some of the extensions for the files are not visible when you browse for file names. In some cases, this may make it impossible to tell one file from another. If you have this problem, we suggest that you change your settings so that complete file names are shown.

Following are instructions for changing the treatment of file extensions. The in- structions vary slightly from one Windows version to another.

You may need to close TPL and restart it to make the change effective.

Windows XP or Vista
Go to **Start**. Select **Control Panel**. Select **Folder Options**. (If you do not see **Folder Options**, look for **Appearance and Themes** or **Appearance and Person- alization**), then **Folder Options** under it.) Then select the **View** tab. Now unclick "Hide extensions for known file types".

Windows 2000

Go to **Start** then **Settings** and select **Folder Options**. Click the **View** tab. The option to "Hide file extensions for known file types" should not be selected.

Windows 98

In Windows Explorer, go to the **View** menu and click **Folder Options**. Click the **View** tab. The option to "Hide file extensions for known file types" should not be selected.

Windows NT

In Windows NT Explorer, go to the **View** menu and click **Options**. Click the **View** tab. The option to "Hide file extensions for known file types" should not be selected.