Block 2:   Analysing one variable   Nominal and ordinal variables

2.1.2.4 Reading in data for nominal and ordinal variables   [23 November 2010]

Previous session: 2.1.2.3 Questions and data for nominal and ordinal variables

Exemplar: British Social Attitudes (1986 survey[1])

File: bsa86.txt   (raw data from the 1986 British Social Attitudes survey)

Task: 1: Read in the raw data for marital status and satisfaction with the way the NHS runs

            2: Save the contents of the data editor in a *.sav file and the syntax editor in a *.sps file.

Use the full pathway name of the external file:

          'C:\Documents and Settings\Owner\Desktop\mybsa\bsa86.txt'

Use the **positiona**l convention for variable names. It helps to prepare a table with your variable names and data locations: the question number and text can also be used later as variable labels

Question	Variable	Record	Start	End
Q58 Satisfaction with way NHS runs	v541	5	41	41
Q113b Marital status of respondent	v1510	15	10	10

SPSS commands used[2] :

          TITLE

          DATA LIST

          EXECUTE

---

[1]   Data files and user documentation obtainable via the UK Data Archive at Essex University as SN 2315. See
      http://www.data-archive.ac.uk/findingData/snDescription.asp?sn=2315 for details and conditions for access.

[2]   **General formats:**

          TITLE   **'<Any text>' .**

          DATA LIST   **FILE =**   '<location and name of external data file>'
                            RECORDS =   <number of records per case>
                            / <record> <varname(s)> <column(s)> <varname(s)> <column(s)> ~ ~ ~
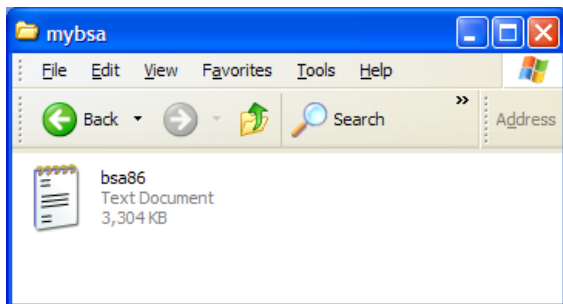   / <record> <varname(s)> <column(s)> ~ ~ ~

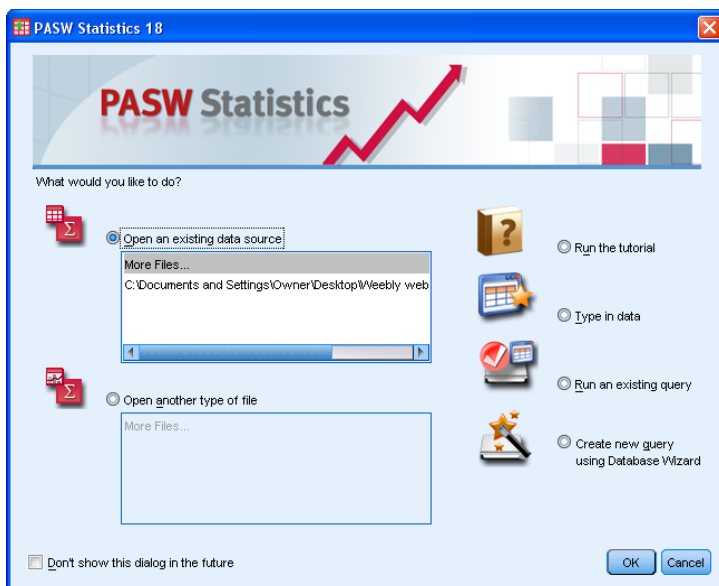   **EXECUTE .**   [Executes all pending operations.]

Go to folder **mybsa**

*[If you don't have folder **mybsa** or file **mybsa86_2.txt**, go back to the [Block 2 menu](#) and follow the instructions on page 3 of **2.1.2.3**]*

Call up SPSS by clicking on the icon, or however your local system works, and click Cancel (in lower right corner) to display the blank Data Editor (behind this pane).
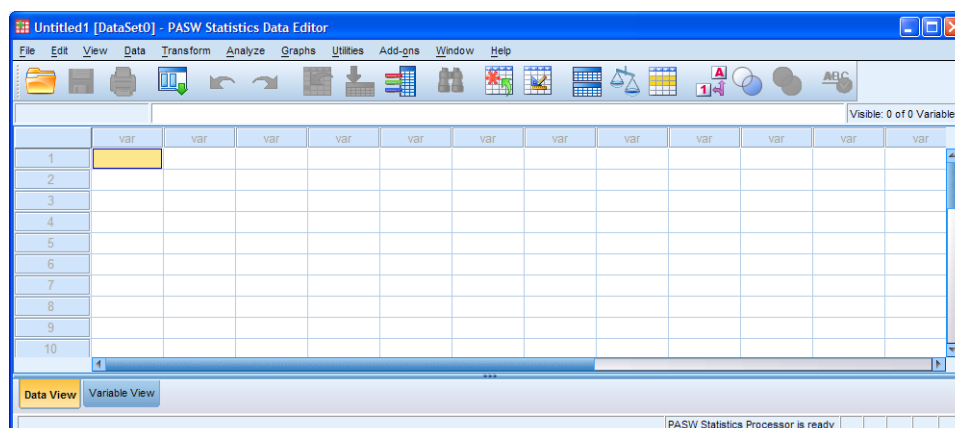

Opening screen for PASW18
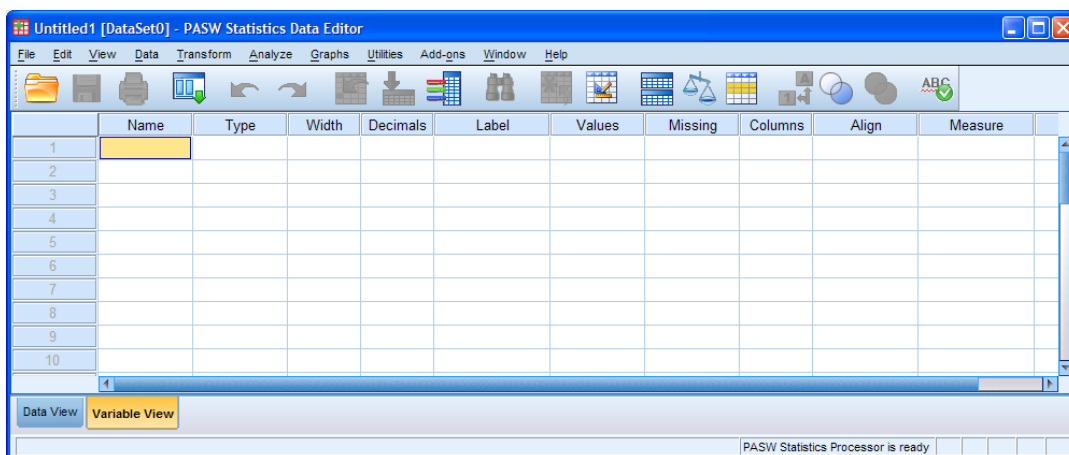
Initial Data Editor in Variable View

It will be called Untitled1. This is the Variable View in which your variable names will eventually appear in the **Name** column and various additional information about them in the other columns.

Sometimes it will open in Data View depending on how SPSS was last used.

Initial Data Editor in Data View

. . . in which your **variables** will eventually be arranged in the **columns** and your **cases** in the **rows**.

This is the same format as the data matrix we created in the opening tutorial 1.1.2 Introduction to survey data.

If it opens in Data View click on Variable View in the bottom left corner to display it in Variable View

Switch between Variable View and Data View two or three times to get used to changing views. Try changing the size of the display by moving the cursor to the edges or corners until the small black arrows appear, hold the left mouse button down and drag the edges or corners to enlarge or reduce the display.

Make sure you are in Variable View

(This one has been adjusted by shrinking it to three rows and dragging the right edge inwards).
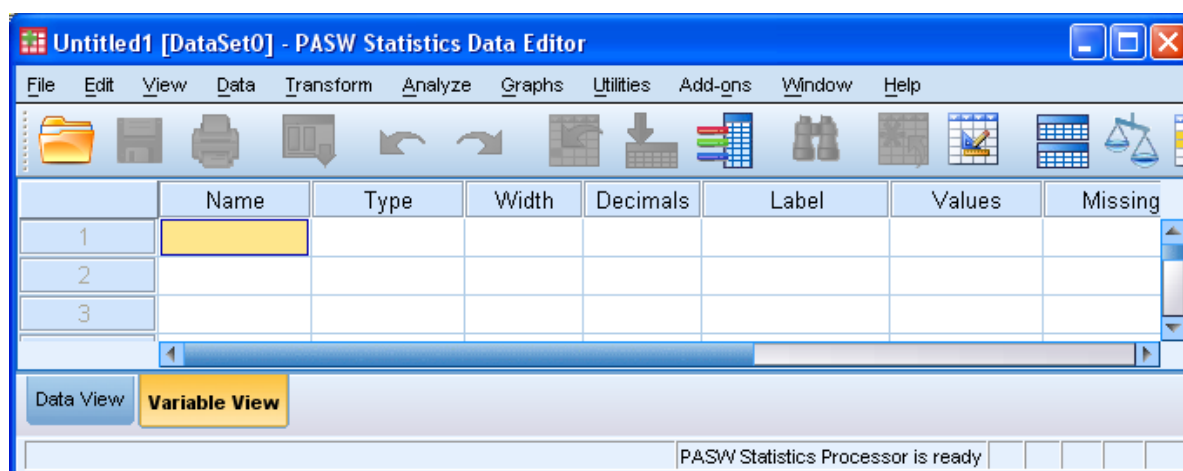

Like the magician's black velvet bag, you can see it is empty on both views.

For most exercises, but not all, we are going to use SPSS in syntax mode in preference to drop-down menus with point-and-click, so we need to write out a set of commands which SPSS can then execute. For long and complex jobs we could do this in MS Word (or in a **.txt** file using other word-processing software, and then drag the text into SPSS, but it's easier for very short jobs to do it inside SPSS using the **syntax editor**.
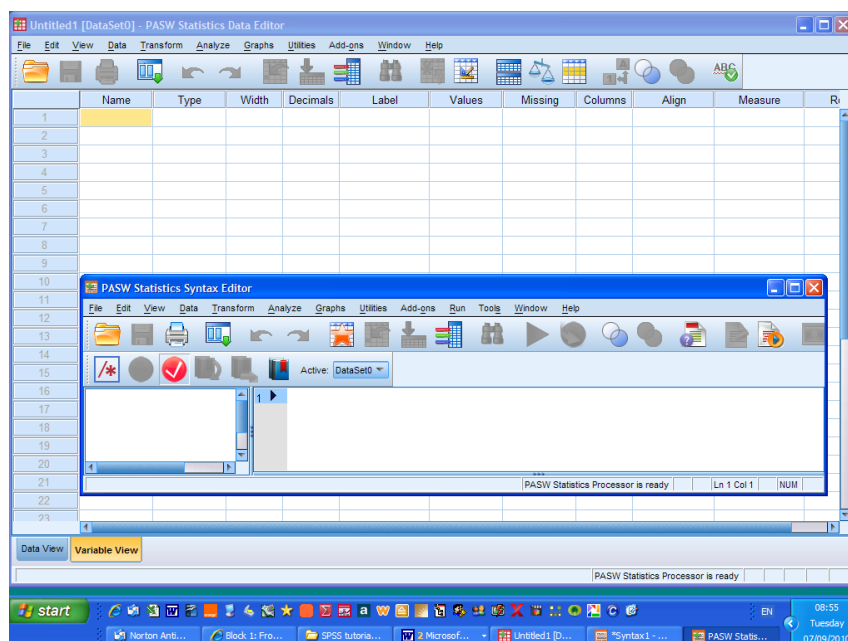
Look in the top left corner of the Data Editor where you will see File .
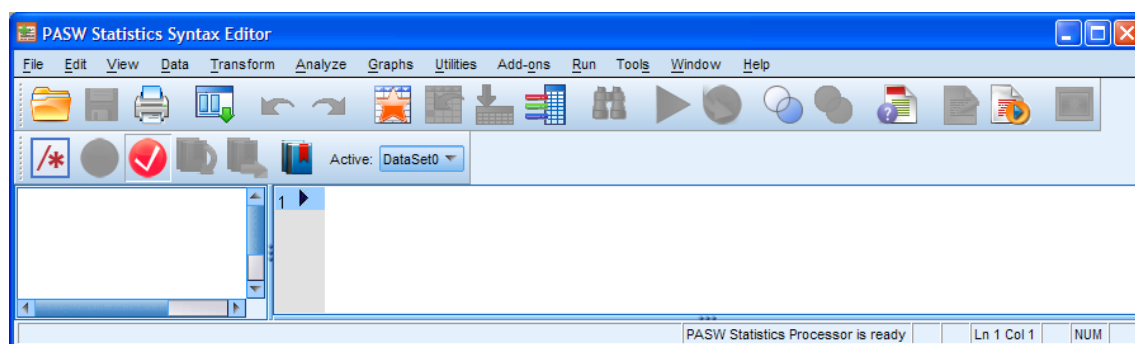
Open a new SPSS syntax editor by clicking on:

File **>** New **>** Syntax
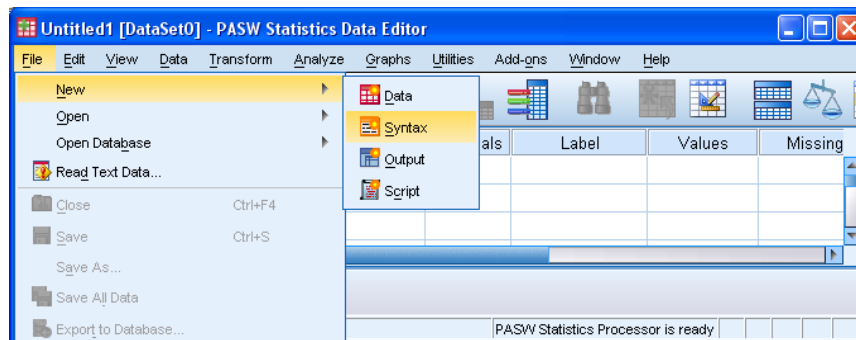
to get:

Blank Data Editor in Variable View **overlaid with blank Syntax Editor**

Blank Syntax Editor

The PASW Statistics Syntax Editor has two panes: for now we're only interested in the right hand pane where your cursor will be flashing in the top left corner, waiting for you to type in the syntax you have already (? probably not?) written.

Before reading on, try writing out the syntax in the space below for **TITLE** and **DATA LIST**

Note the slashes, primes and full stops!

title   **'** _____ **' .**

data list   _____ **'** _____ **'**

                   _____

           / _____

   **/** _____ **.**

execute .

You can type in your entire syntax and run it all it all in one go, but for this exercise we'll do it one command at at time. It is good practice to use **titles** (and also **sub-titles** and **comments**) to remind you what you were trying to do. Moreover, you may not be the only person using the file: this helps tutors, colleagues and other users to understand your syntax.
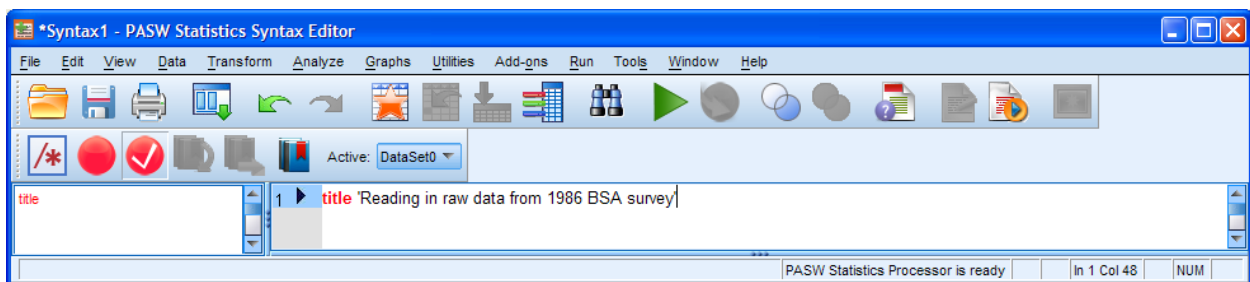
TITLE

Write a **TITLE** command (any text, but don't forget the primes and the full stop).

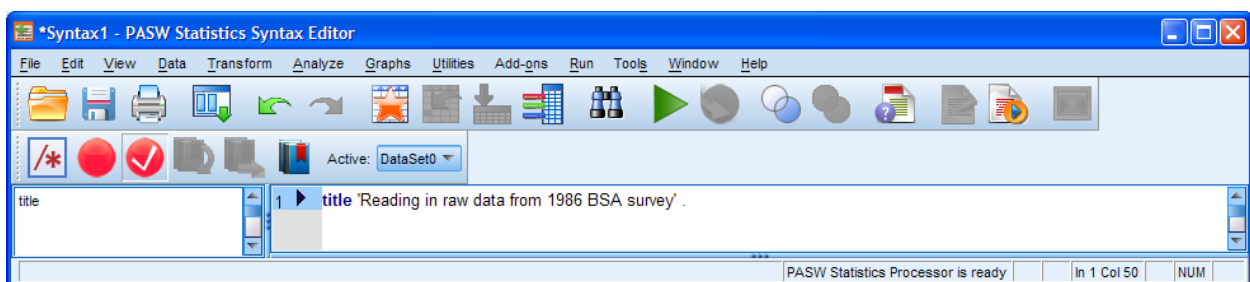**title 'Reading in raw data from 1986 BSA survey' .**

Start in column 1 and don't forget the full stop to end the command. If you make a mistake, or the command isn't ended with a full stop, SPSS will display the command in **red**.
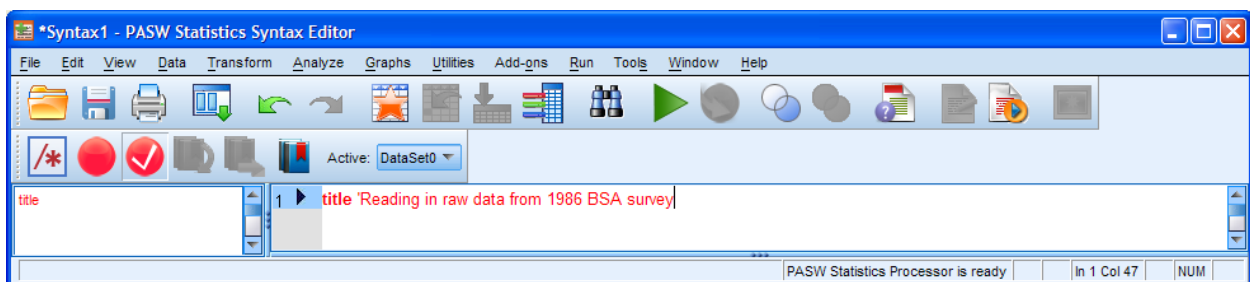
In the example above, the final prime is missing

Oops! Now what? Ah, there's no full stop (period) to end the command.

When the syntax is OK SPSS displays the command word colour-coded in **dark blue**.

Click on the green ► to run the command. Your syntax will be repeated in the Viewer Window with your title just below it.

```
title 'Reading in raw data from 1986 BSA survey' .

>> Reading in raw data from 1986 BSA survey
```

DATA LIST

Your **DATA LIST** syntax should look something like this:

(To make it clearer for you, I've used tabs to indent the separate elements of the command, but as long as you use at least one space at the beginning of the line it will work.)

data list
     file ' C:\Documents and Settings\Owner\Desktop\mybsa\bsa86.txt'
     records 23
        /5   v541 41
        /15 v1510 10 .

The full pathway name is more complex, but you only have to do it once and it's a lot quicker and easier than fiddling around with floppies or CDs!

Go back to the syntax editor and, on a new line, carefully type in the syntax for your next command. The command must start in the first column of the line, but the continuation lines must be indented by **at least one space**. If you make a mistake, or the command isn't ended with a full stop, SPSS will display part or all of the command in **red**. When the syntax is OK, SPSS displays the **command** colour-coded in **dark blue**.and the **keywords** in **dark red**.
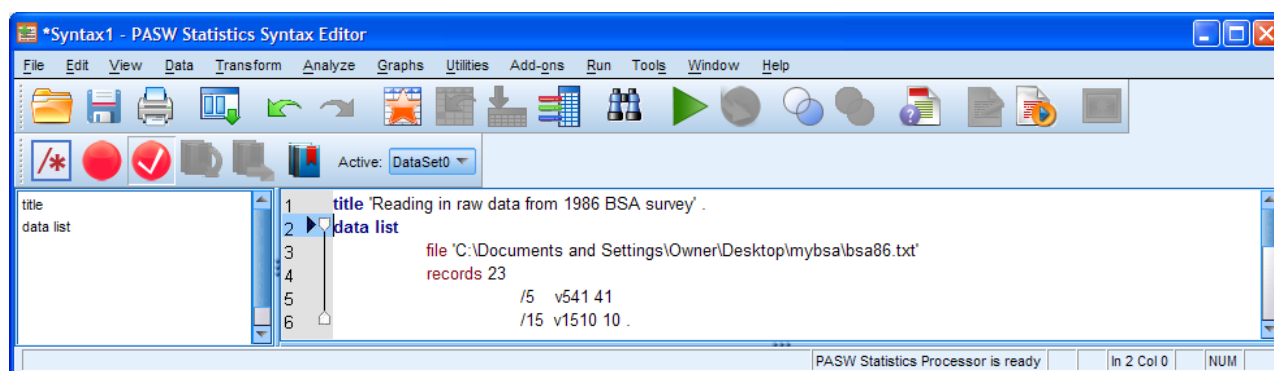
Make sure the cursor is somewhere on one of the new lines of syntax. (The first and last lines of the block will have markers joined by a vertical line as above and the line your cursor is in will be indicated by ▶.)

In the toolbar click on the green ▶

The Viewer Window will display:

```
data list
file 'C:\Documents and Settings\Owner\Desktop\mybsa\bsa86.txt'
records 23
/5     v541 41
/15  v1510 10 .

Data List will read 23 records from C:\Documents and
Settings\Owner\Desktop\mybsa\bsa86.txt

Variable          Rec    Start     End   Format
v541               5       41       41   F1.0
v1510             15       10       10   F1.0
```

 [**NB:** Positional variable names enable you to check that the data will be read from the correct records and columns: ie v541 will be read from record 5 col 41 and v1510 from record 15 col 10]

The data editor in Variable View will have filled up to look like this.
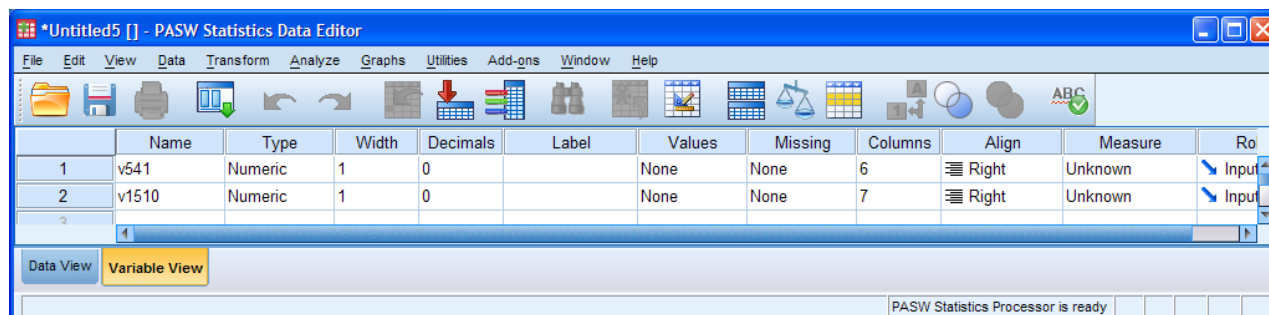
Variable View after running DATA LIST

In Data View the matrix will still be be empty, but instead of | var | var | your variable names **v541** and **v1510** have appeared in the first two column headers.
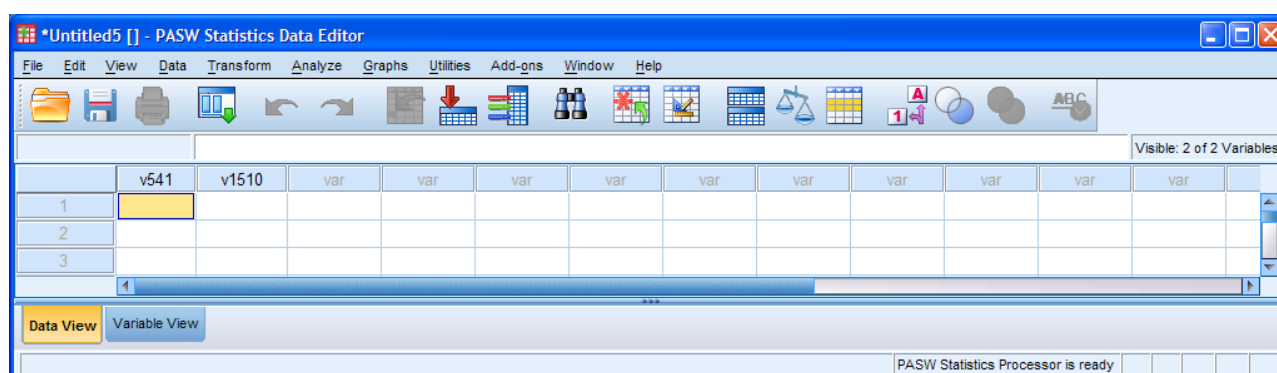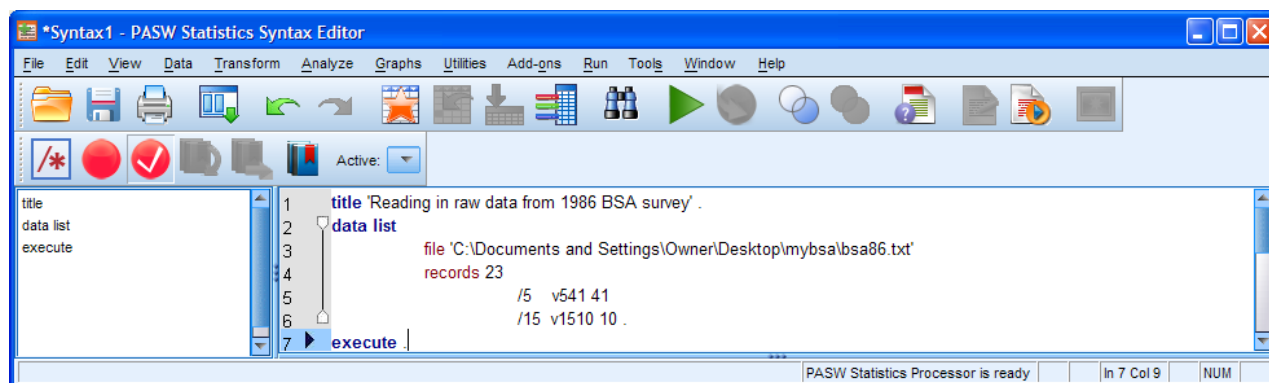

Data View after running DATA LIST

At this stage it is best to read the actual data into SPSS. This could be done by by performing a statistical analysis (eg **FREQUENCIES v541 v1510 .**) but the resulting tables will not be labelled, or by listing data for the first few cases (eg **LIST /CASES 5 .**)

However, in this case, we shall use the **EXECUTE** command, which forces SPSS to make a pass through the data.
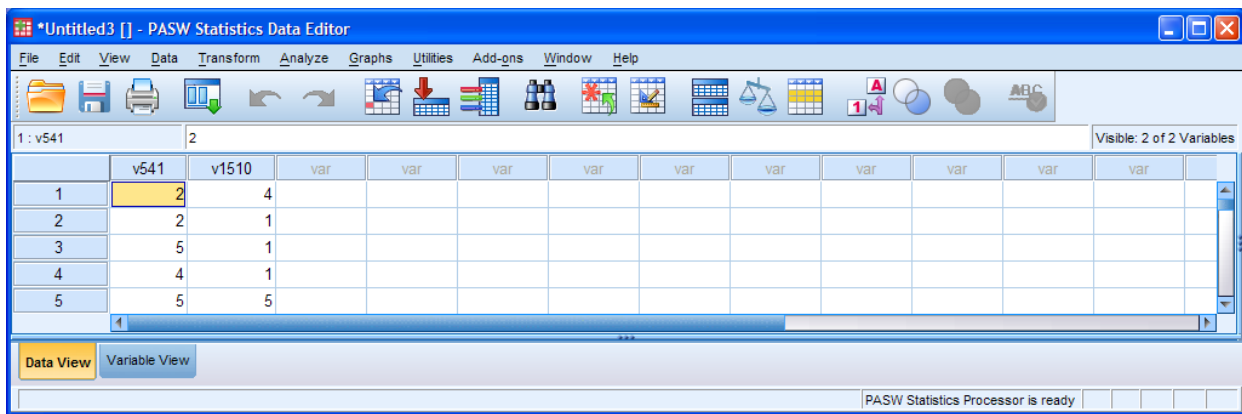
EXECUTE
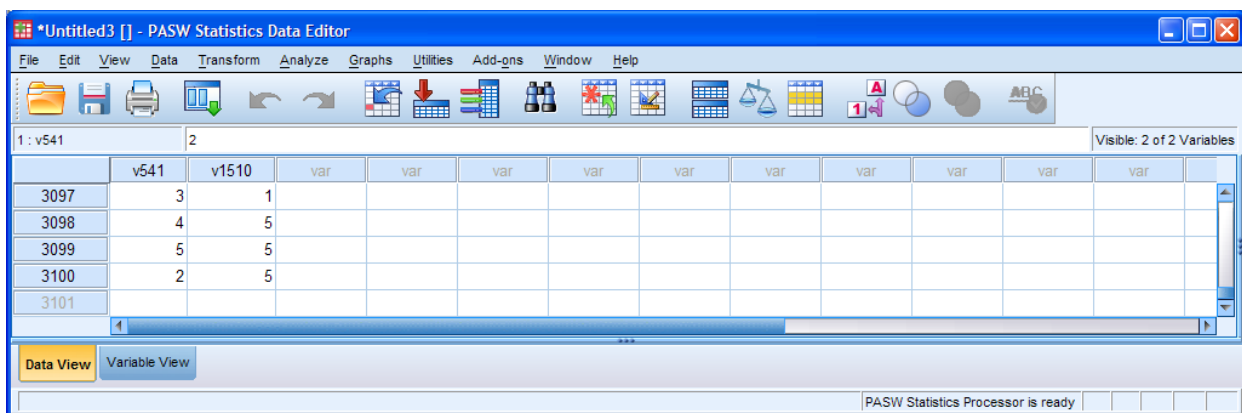
Type **execute** on the next line

. .. and click on the green ▶

to produce:

**Beginning of file in Data View after running EXECUTE**

The raw data have now been fed into the data editor. If you scroll down to the end of the file you will see there are 3100 cases (use **[CTRL]+[end]** it's quicker!).
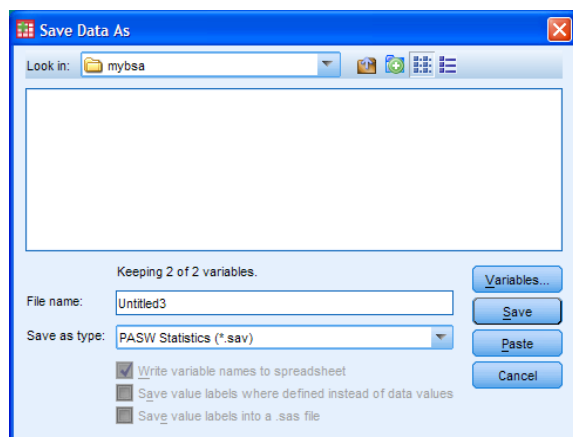

End of file in Data View after running EXECUTE

At this point we need to think about saving our work. The current data editor *Untitled1 is only a working file (ie a "buffer" file) which will be lost if there's a power cut or a computer crash, and so we need to save a "hard copy" to a *.sav file in SPSS.
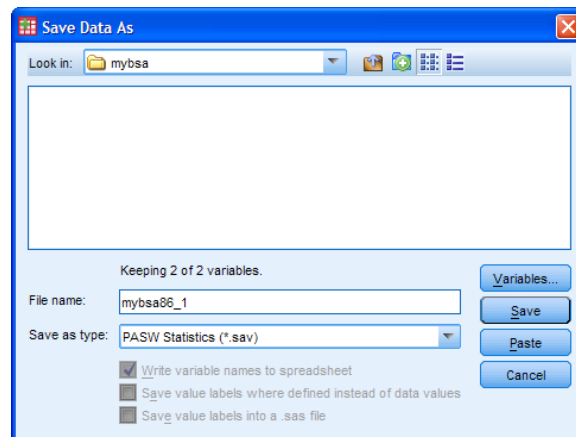
Click on File > Save As ...
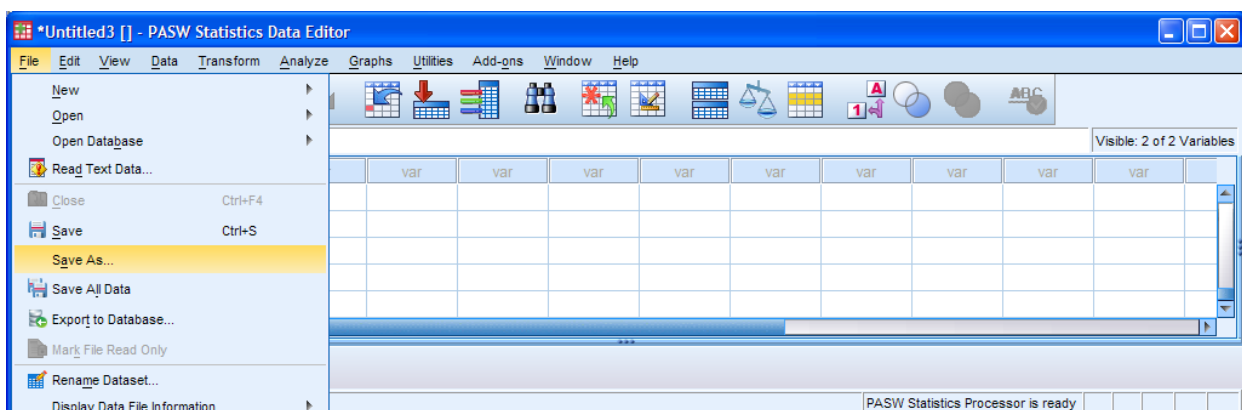
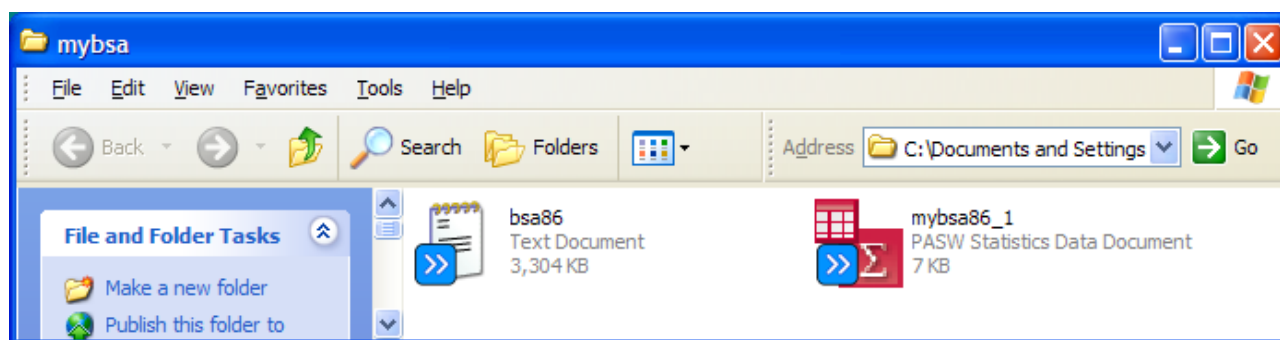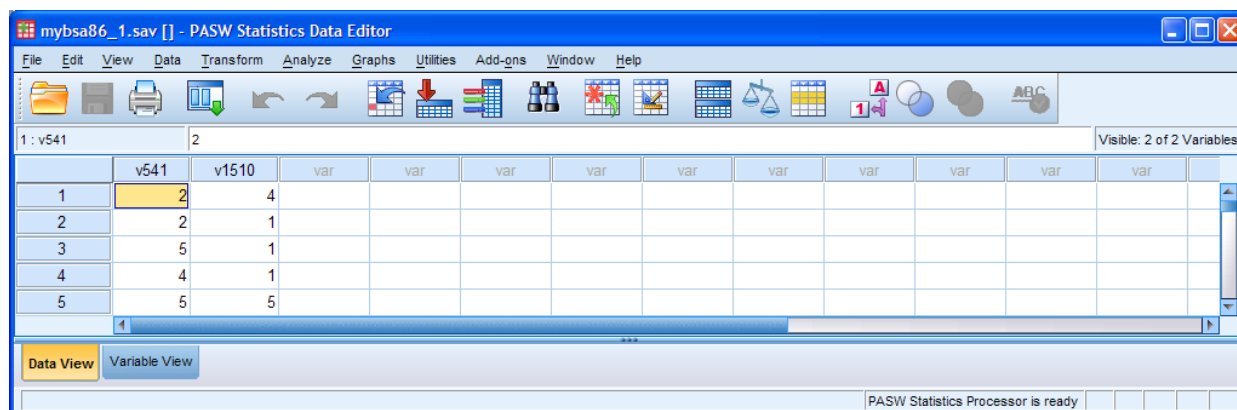Navigate to your **mybsa** folder   . . . type **mybsa86_1** in the File name: box

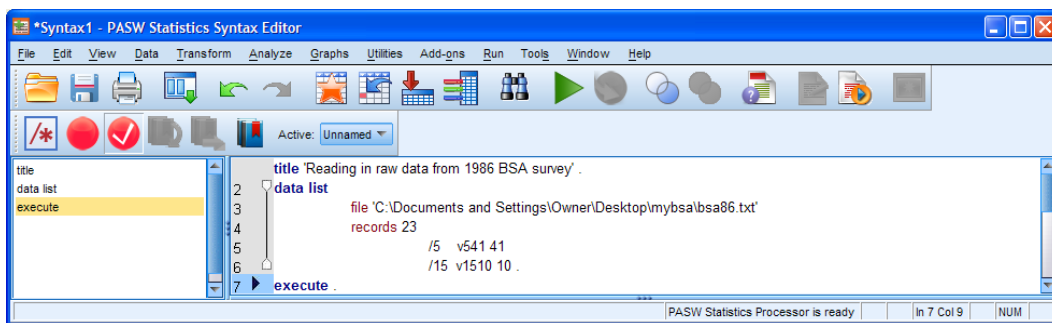. . . and press Save .

Folder **mybsa** will have filled up:

This is a useful step in file-building, but is also a safety precaution against power cuts and computer crashes. Moreover it means that the contents of the data editor have been saved in **mybsa86_1.sav** and all we need to do now is enhance the data dictionary by adding information about missing values and inserting variable and value labels. From now on all you need to do is click on the "save" icon in the toolbar, or press **[CTRL}+S**, to save successive amendments to the file.

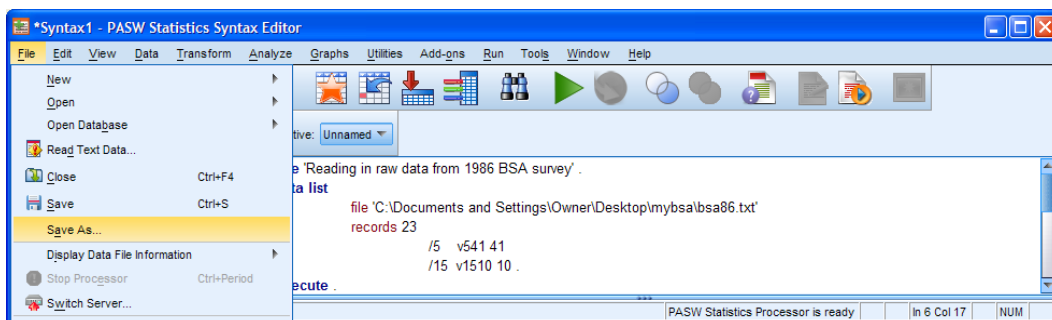The data editor name will have changed from *Untitled... to mybsa86_1

Well done! You now have your first SPSS saved file from a real survey!

Hang on! We haven't quite finished yet. We now need to save the syntax editor as well. Go back to your syntax editor:
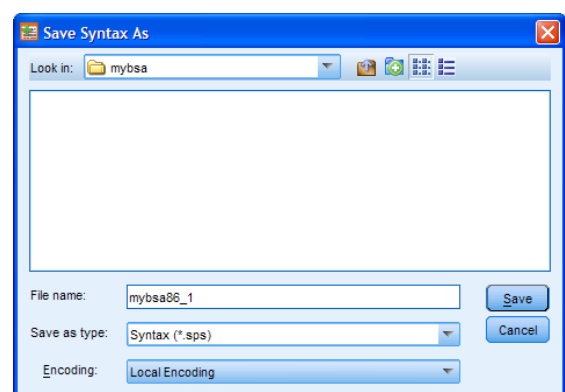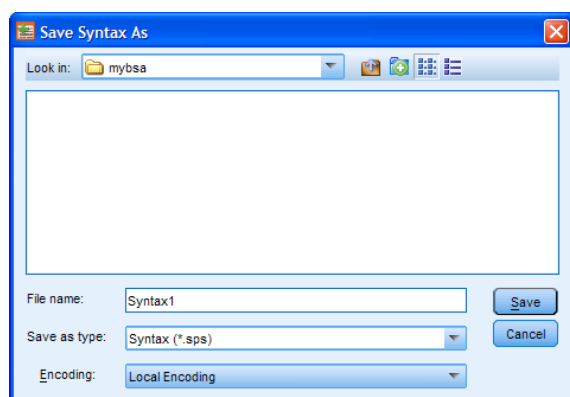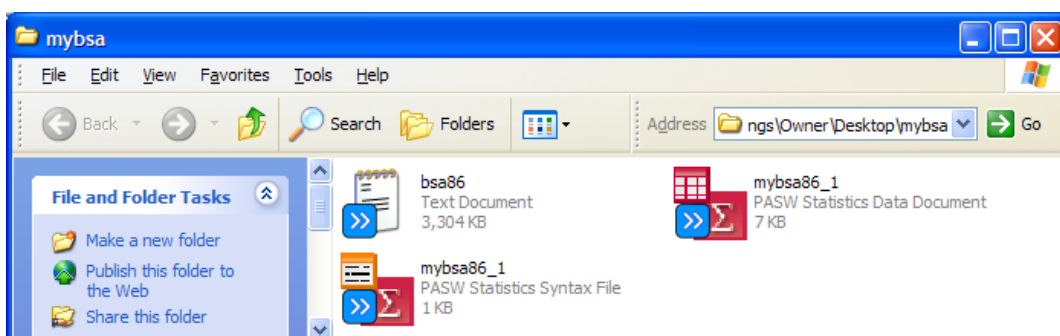

Click on File **>** Save As ...

Navigate to your **mybsa** folder: . . . type **mybsa86_1** in the File name: box

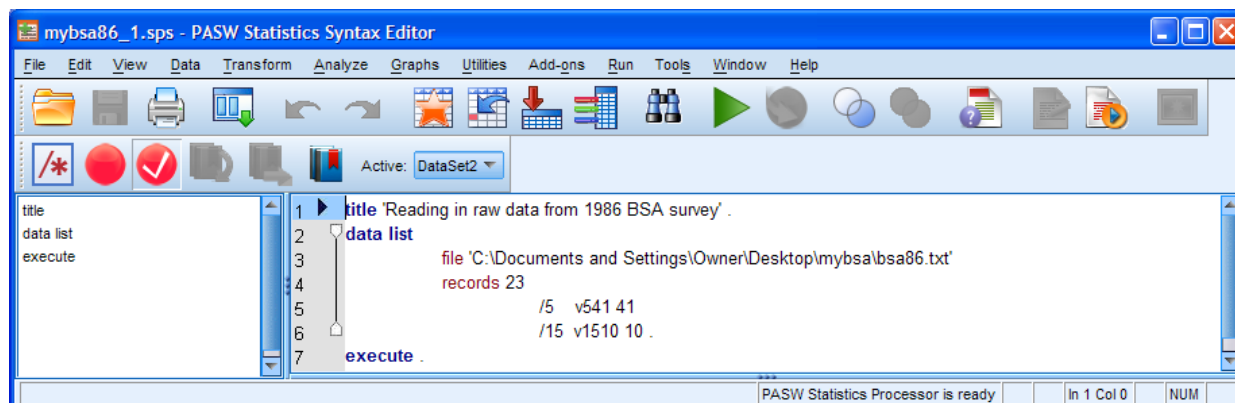*[Don't worry if the filename **mybsa86_1.sav** pops up, just make sure Syntax (*.sps) is displayed in the Save as type: box]*

. . . and press Save . Folder **mybsa** will have filled up:

The header in the syntax editor will change to mybsa86_1.sps.

You don't really need to save the output file, which may well be full of warnings and error messages. You can always run the SPSS jobs again, but if you do save the output file, make sure you call it **mybsa86_1.spo** so the name tallies with the related files from this session.

Before going to the next session, and based on the earlier exercises using the pre-course questionnaire [1.4.1 Labelling your variables in SPSS 1.4.2 Labelling your values in SPSS 1.4.3 Missing values - a note] try writing out the full syntax yourself on the template below for the following commands: **MISSING VALUES   VARIABLE LABELS   VALUE LABELS**

mi_____   v_____

                  _____ (____)

                  _____ (____) .

var_____   la_____

                  _____ ' _____ '

       / _____ ' _____ ' .

val_____   la_____

       v_____   ____ ' _____ '

                  ____ ' _____ '

                  ____ ' _____ '

                  ____ ' _____ '

                  ____ ' _____ '

  / v_____   ____ ' _____ '

                  ____ ' _____ '

                  ____ ' _____ '

                  ____ ' _____ '

                  ____ ' _____ ' .

End of session:

Next session: 2.1.2.5 Extending your data dictionary

[Back to Block 2 menu]