

The objective of this assignment is to run a MULTIPLE regression analysis with selected diagnostics. I have modified the data set by adding the city to the observations. You may use the following input statements.

```
data Pace_of_Life; length city $ 18;
  infile input1 missover DSD dlm="," firstobs=2;
  input City $ BANK WALK TALK HEART;
```

- a) The homework is based on problem 9.14 which has detailed explanations of the variables. The dataset is ex0914b.csv.
- b) Arrange for the usual comments and title, and HTML output dataset to the C:\temp\ directory.
- c) Create a scatter plot where the plotted observations are represented by the first letter of each city.
- d) Run a regression for the SAS model “`MODEL HEART = BANK WALK TALK`”.
- e) Output the residuals and do a residual plot (residual on predicted value) and test the residuals for normality.
- f) Three simple questions you may answer at the bottom of the program you send me:
  - (1) which variables appear to be significantly related to heart disease death rates,
  - (2) is the data normally distributed and
  - (3) does there appear to be a departure from homogeneity of variance?

### Some Interactive SAS

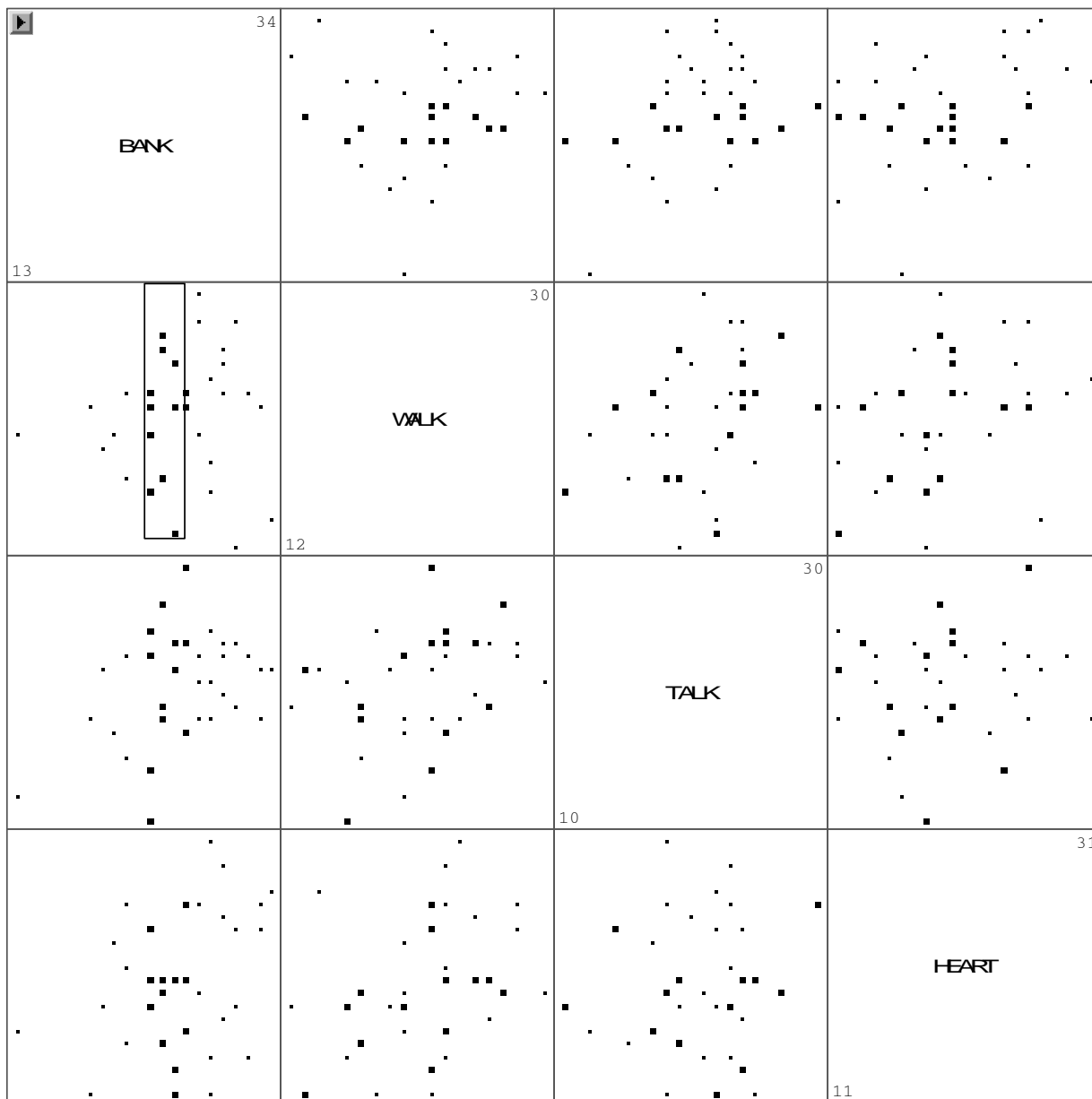
If you have some time, try the following. While in SAS, and after having created the dataset for the current problem, enter the following from the SAS menu at the top of the SAS window. Solution > Analysis > Interactive data analysis. From the menu that appears choose the work directory (current active files are here). From the work directory list highlight the file with the “paceoflife” data and select the OPEN button. This opens a spreadsheet like view of the data file.

While holding down the control key you can now highlight selected column headings. Highlight the 4 quantitative variables and from the menu choose Analyze > Scatter plot (Y X). This will open a matrix of scatterplots mentioned by the text.

If you draw a rectangle with the mouse arrow and use the mouse arrow to sweep it across the points in one of the plots you will see the corresponding points in other plots. The corresponding observations in the spread sheet are also highlighted.

To copy this scatterplot to a word file, with the window active choose EDIT > COPY from the SAS menu. The window contents will be copied to the clipboard and can be pasted into a word document (see below)

**OVER**



There are many other interactive graphics that you may wish to explore. Distributions of single variables can be examined with Histogram or Box plot, two variables with Line plot and Scatter plot and 3 variables with contour plot and a three dimensional rotating plot. Regression and multivariate analyses can also be done in the interactive mode.

If a window or its contents are too small, both can be resized with the cursor. There are other tools in a tools window (EDIT > WINDOWS > TOOLS). The “hand” tool is useful for some purposes such as modifying graphics like the histogram and for rotating the rotating plot.

**OVER**