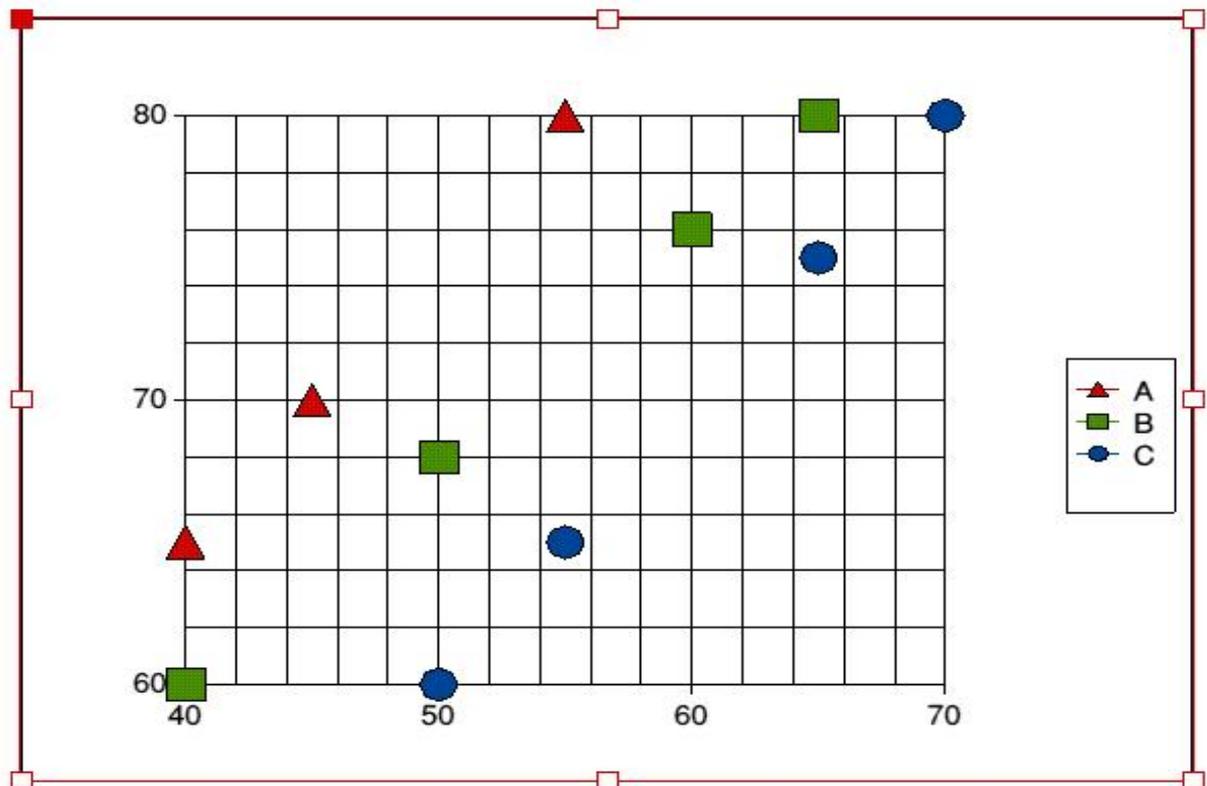


Gerald's Column by Gerald Fitton

Gerald's Column by Gerald Fitton Last month I described how, using Fireworkz, you could create an X-Y chart similar to the one in the screenshot below.



These are graphs for which co-ordinates in the form (x,y) are plotted. The x values do not have to be equally spaced but they do have to be numbers (having values) and not words (such as the names of newspapers). Of course Fireworkz will allow you to plot charts which have words along the X or Y axis but these are not X-Y charts.

Uses of X-Y Charts

An X-Y chart is the correct chart to choose whenever one numerical variable is thought to depend in some way upon another.

It is said that "A picture paints a thousand words". I am not convinced that the numeric ratio (1000:1) is even approximately accurate but there is no doubt that using a chart or graph to illustrate a point during a verbal or in a written presentation is something which is not only attractive to an audience or a reader but also a using illustrative charts will bring home your points much more strongly than the use of words alone.

An interesting application I was asked to help with was to have a single graph showing both the height and weight (with scales on the left and right y axes respectively) of a growing child. Another was the (cumulative) fuel consumption of a car. Both these charts were used by speakers to illustrate their presentations.

Fireworkz is very good for these and many other applications for which a graph or chart is required to enhance the understanding of a set of data. Although Fireworkz is primarily a sophisticated and comprehensive spreadsheet, it has an advantage over many other spreadsheets in that it is seamlessly integrated with an excellent word processor. Also you can see the edges of your pages on screen just as they will be printed (in glorious technicolor - but monochrome in Archive).

Fireworkz Demo Version

For a limited period of time we are making available a demo version of Fireworkz on our website at <http://archive.abacusline.co.uk>. You can use this demo version if you wish to find out whether it is a spreadsheet which suits you. There is a Windows version available. You will need to enter "archive" as your username and "amusement" as your password in order to enter this site.

Also on this website and on the Archive monthly disc you will find copies of the Fireworkz files related to this article. These files will load into the demo version of Fireworkz.

The Data

The data I am using for my example is shown in the screenshot below.

Series 1 Data		Series 2 Data		Series 3 Data	
A Series		B Series		C Series	
40	65	40	60		
45	70				
		50	68	50	60
55	80			55	65
60	85	60	76		
		65	80	65	75
				70	80
A Series		B Series		C Series	

Shape and Size

Look again at my first screenshot. Notice the eight grab handles. With them you can change the size and shape of the chart. If you drag the bottom right handle the aspect ratio of the chart is fixed whilst the size changes. Something which has caused much hair tearing is that if you use any of the other seven handles then the aspect ratio will change!

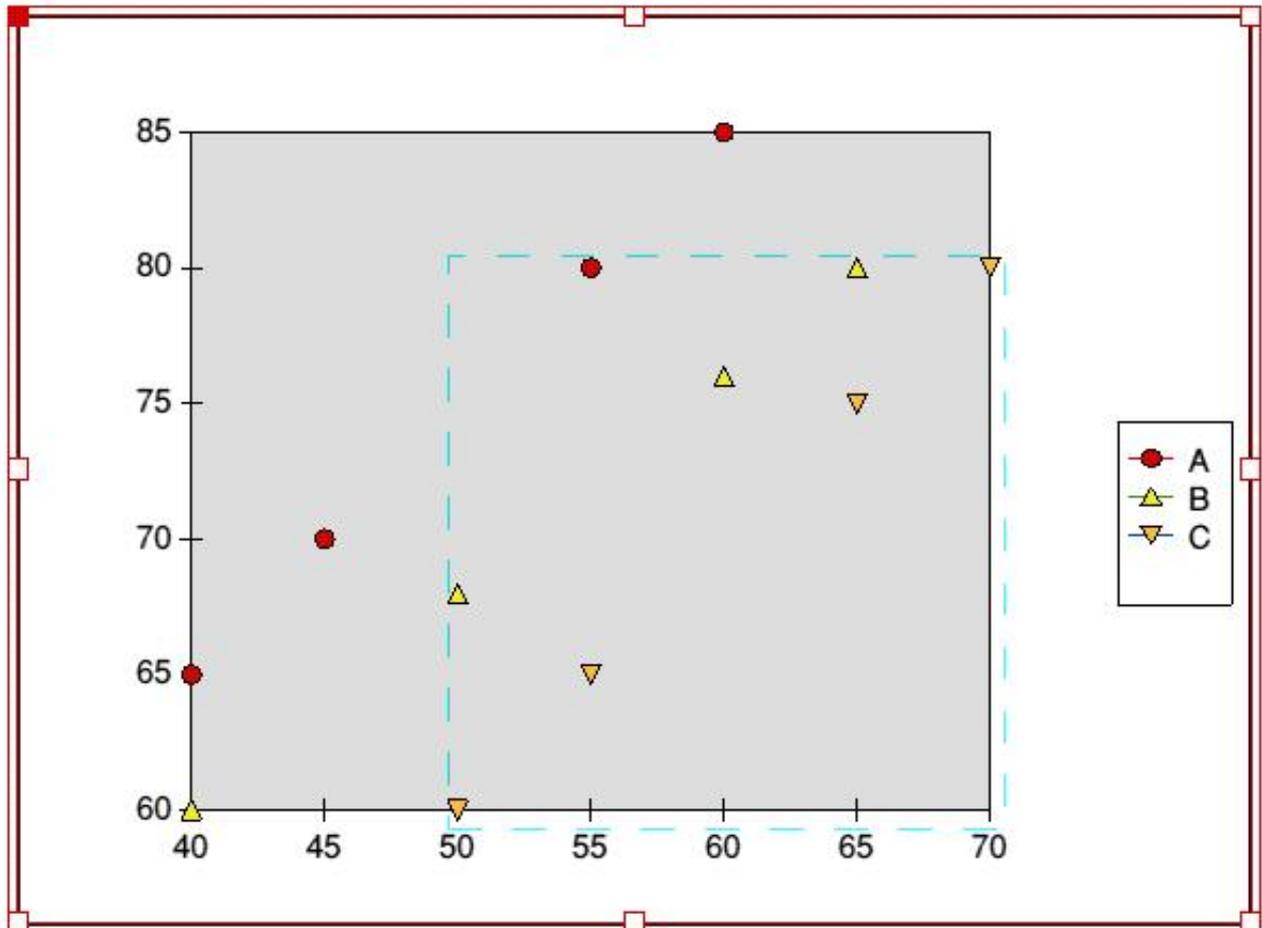
Editing the Chart

When it comes to editing a Fireworkz graph or chart I find that there are many of my correspondents, particularly those familiar with PipeDream, who get lost and complain (loudly) that there is no way of editing the chart.

Of course this is not true!

Rather than just a single mouse click to select the chart (for size and shape adjustment) you must double click on the chart. You can tell when you are in (double click) editing mode because there is a double red line around the chart as shown in the screenshot below.

If you use the data in the file [Data0/fwk] (from the website or the Archive monthly disc) and create an X-Y chart as I described last month then the chart that you will produce, by default (ie before editing), will be look like the one in the screenshot.



In the screenshot you will see that the first data series, A, is small red circles, the second data series, B, are yellow triangles (with the base at the bottom) and the third data series, C, are 'dirty' yellow triangles which I might describe as being 'upside down'.

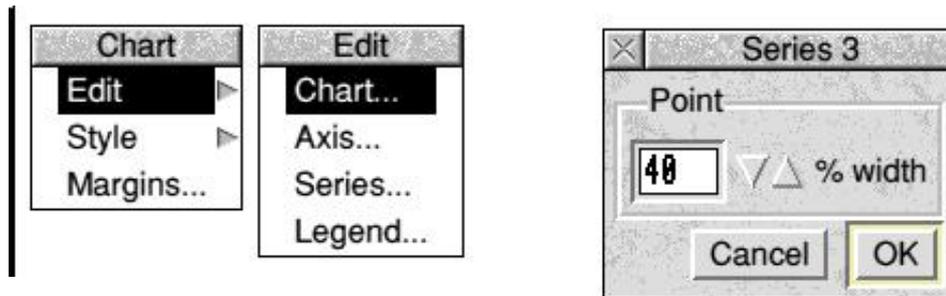
Changing the Small Triangles to Large Circles

The 'Legend' is the block to the right of the graph containing three lines with the markers (red circles, etc) and the names of the series, A, B and C.

Click the mouse <select> button on the 'upside down' triangle next to the C and, the whole of the third series of points (in our example there are four points) will be selected and displayed within a blue dotted line. This blue dotted line shows in the screenshot above.

The file [circle/aff] on the monthly disc or website is a drawfile of a red circle. This is the shape we want for the series three, the C, points. Drag the file [circle/aff] to the chart and you'll find that the 'upside down' triangles change to circles - but small ones.

Click the mouse <menu> (middle) button over the chart (remember that the chart must be surrounded by a double red line) and the Chart menu (shown in the screenshot below) will appear. Run the pointer through the Edit option and click on Chart... to call up the menu which, in this case, is headed Series 3. It is this Series 3 sub menu which is used to increase the diameter of the circles. I have increased the Point size from the default of 20% to 40%.

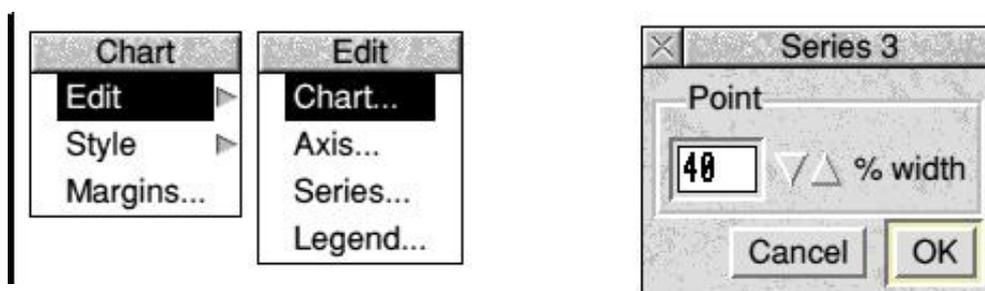


Using the same technique, click on one of the Series 2 data points (the 'right way up' triangles) and then drag the file [square/aff] to the chart. This will change the triangles to small circles. Increase the size of the circles to 40%.

For the Series 1 data points use the file [tri/aff].

Changing the Colour of the Points

The chart must be surrounded by a double red line. If it isn't then double click on the chart. Click on one of the third series points (the ones which were the 'upside down' triangles). The (two) points of this series will be enclosed by a dotted blue line. Click the mouse <menu> button over the chart and run the pointer through the Chart - Style menu and click on the Fill... option. The Series 3 sub menu will open.



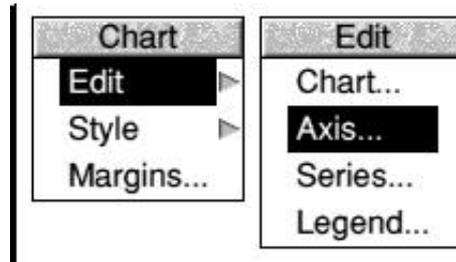
Click on the dark blue (the blue on the left and not the light blue on the right). Click on OK. The (four) points will change colour; they will become dark blue.

Repeat this sequence of commands with the second series of points. Make them dark green. The first series is red.

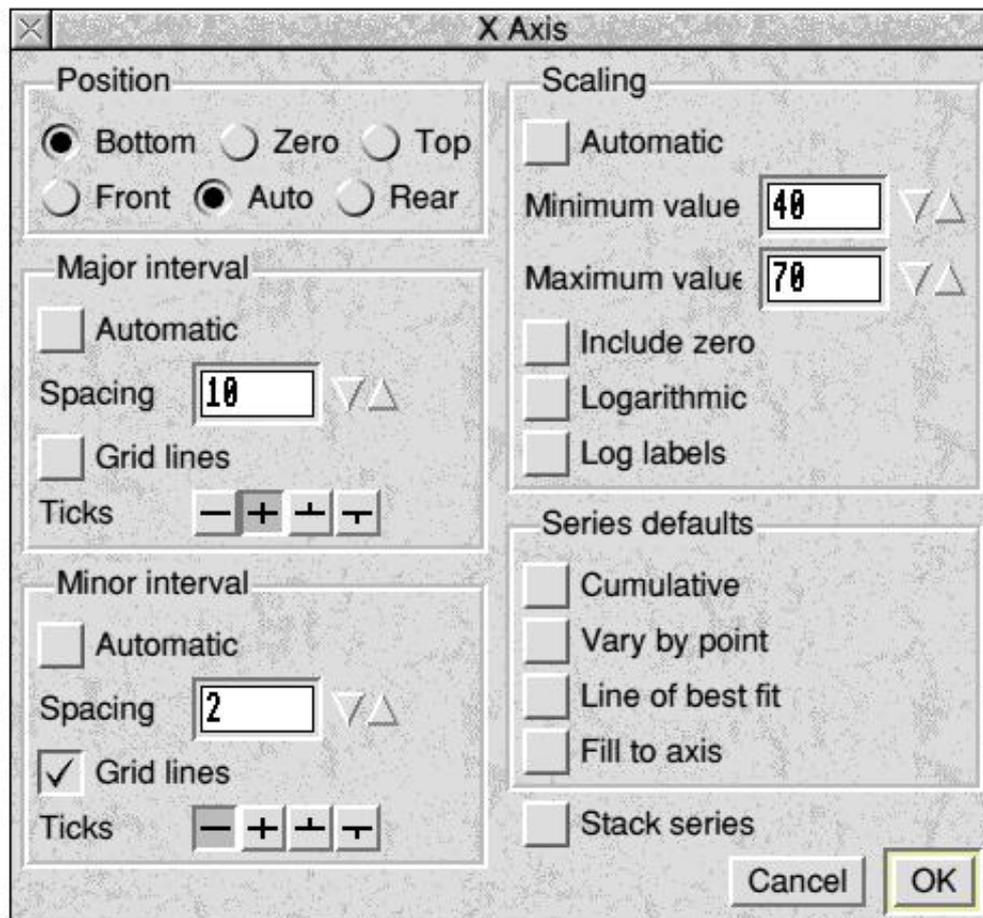
Customising the X Axis

I shall continue to repeat "The chart must be surrounded by a double red line in order to edit it". If it is not surrounded by a double red line then double click on the chart.

Select the X Axis by clicking on it in the chart. Click the mouse <menu> button and access the X Axis sub menu through Chart - Edit - Axis... as shown in the screenshot.



The X Axis sub menu will open. I have shown the selections you must make from this sub menu in the screenshot. Let's have a look at the options available from this sub menu.



Position is the position that the X axis appears on the chart. Generally you want this to be where the Y value is Zero; this is the default. We don't have a Y value of zero (and, in this case, we don't want one) so we position the X axis at the Bottom of the chart.

The Major interval settings determine which values will appear along the axis. You will see that in our chart the values appear at 40, 50, 60 and 70; the spacing is 10. The Minor interval usually defines the grid lines but without values on the axis.

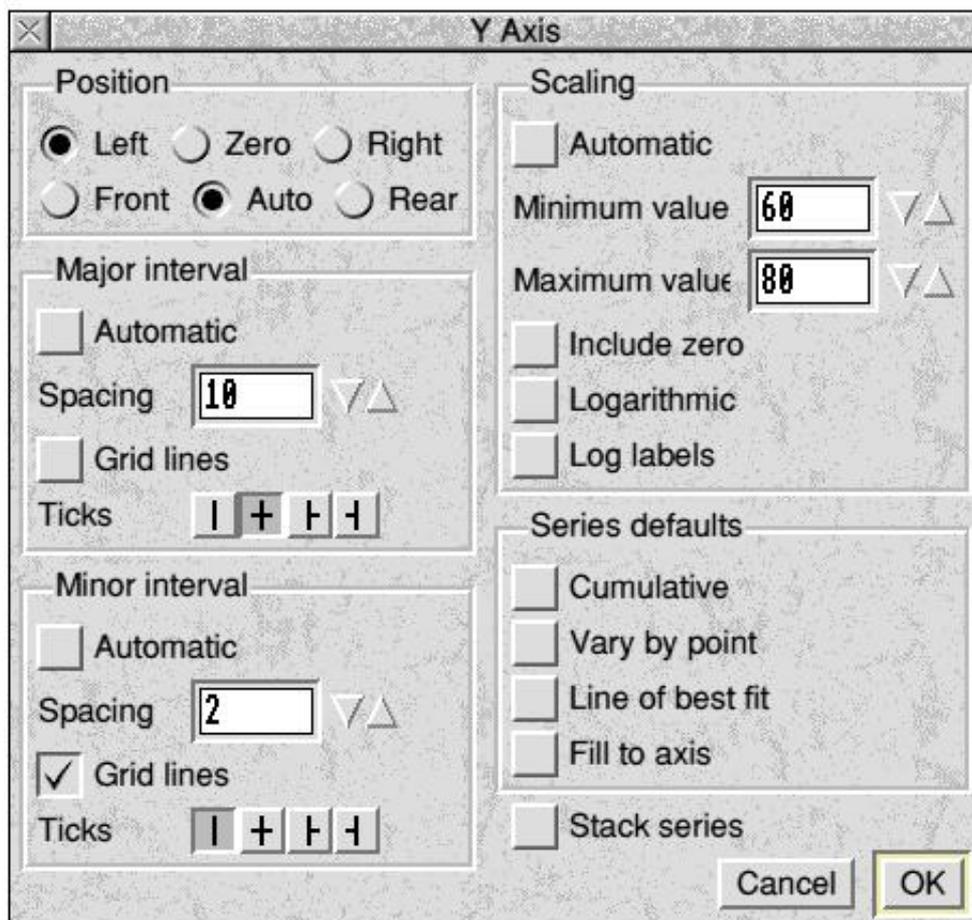
In this example the Scaling section of the X axis sub menu is used to set Minimum and Maximum values of the chart. I have chosen 40 and 70.

For this example we do not use the Series defaults section of this menu nor do we wish to 'stack' the series.

Customising the Y Axis

In the screenshot below you will see the settings I have chosen for the Y axis.

I am not sure whether I have made the 'best' choice for the Major interval ticks. The choice I have made does mean that there are little tick lines outside the chart grid alongside the values. With some charts it is difficult to know exactly which grid line corresponds to the value shown in the margin; I tend to use the choice I've made to avoid this difficulty.



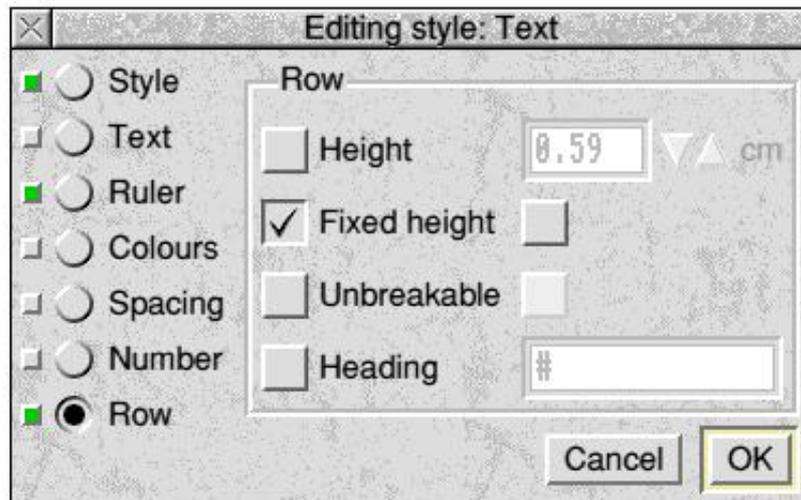
This completes the chart.

Text

The third section of the [Data/fwk] document contains text to which the Text Style has been applied. Fireworkz acts 'intelligently' in its choice of Styles. Even though the base Style is BaseSheet, Fireworkz detects text automatically and applies the Text Style.

Let me say this again. If you enter text (not a number nor a formula) into a cell in a Fireworkz document for which the template is a Sheet (rather than a Text) document then Fireworkz will automatically apply the Style called 'Text' to that cell.

This Style (called 'Text') can be modified. I have done this as shown in the screenshot.



From the screenshot you will see that both the Ruler and Row attributes of the Text Style have been highlighted (the small green squares).

By default only the Ruler attribute is highlighted. This Ruler sub menu is used to align the text to the Left. It modifies the BaseSheet Style. The BaseSheet Style aligns everything Right (because it is usual to align numbers to the Right) so, when Fireworkz detects that text has been entered this text is aligned Left.

The Row - Fixed height for the Style BaseSheet

By default in a sheet document (as opposed to a text document) the 'Fixed height' setting is ON. This fixed height is not appropriate for cell B29 which contains three lines of text.

I have modified this in the Style called Text by using the Editing style: Text - Row Style sub menu. You will see that Fixed height has been selected but the box to the right of the word "height" is not selected.

This combination ("Fixed height" selected but not the box to the right of "Fixed height") removes the Fixed height (of the BaseSheet Style) and allows the height of each (textual) row to vary.

Merging Cells

I have applied the Style Col Wdth 0 (zero width) to the block C29I29. I find it better to shorten cell widths using a zero width Style before lengthening others. This technique avoids spilling over onto the page to the right (creating a new page or set of pages with all the delay that implies).

The Style Col Wdth 16 has been applied to the cell B29. It makes the cell 16 cm wide so that it covers the width usually occupied by columns B to I inclusive (you will remember that the BaseSheet Style has a column width of 2 cm and $8 * 2 \text{ cm} = 16 \text{ cm}$).

As I said earlier in this article (and in other articles) after a great deal of 'learning by experience' I have concluded that for all but the simplest documents it is much better to 'merge' cells by using a couple of Styles (as above) rather than by using the various mouse drags. Mouse drags do work and they can be quickly executed but, if you don't get it right first time, then you are in for a long haul getting it back the way it was.

Summary

There is a lot to assimilate in these last couple of articles. Topics I have touched on include selecting the block of data so that it includes Protected first and last lines; the creation of coloured Boxes so that the lines do not move as the data is moved; merging cells using a couple of Styles; using the Text style to allow variable row height; chart selection; changing the size and shape of the points; and customising the axes.

I suggest that you experiment until you are familiar with each of these. However, if you have a document which is giving you trouble and you think that I might be able to help then please contact me at goldline@abacusline.co.uk. I would like you to include an example showing how far you have got because that way I can avoid misunderstanding you. Furthermore it saves me a lot of time since I don't have to create a dummy file.

On the Abacusline Website If you go to <http://archive.abacusline.co.uk> (Username "archive", Password "amusement") you will find a demo version of Fireworkz32 for RISC OS available for download.

This demo version has its limitations but, with it, you will be able to load and read (in colour) all the Fireworkz format versions of Gerald's Column which I have made available on that website. I have divided the articles into blocks.

One block contains these last two articles about Fireworkz Charts.

Another block contains all my discussions (with pictures in colour) about buying a domain name such as fitton.co.uk and abacusline.co.uk, third level domains such as the one you can access at <http://archive.abacusline.co.uk> (note that there is no "www"), setting up personal email accounts such as gerald@fitton.co.uk and using either a webmail browser (such as Internet Explorer) or an email client (such as Outlook Express) to send and receive emails via any ISP (such as NTL, AoL, BT, etc).

Currently we are working on another block (in Fireworkz format) which will contain my Gerald's Column articles about media such as pictures, sound and video. Many of the picture, sound and video files of these articles (plus others) are already on our 'archive' website and can be accessed now.

Fireworkz for Windows

Recently we have released for sale a 32 bit version of Fireworkz for Windows. Of course all the Fireworkz format files on our 'archive' website will load into this Windows program and will look and behave exactly as they do using Fireworkz for RISC OS.

We are in the process of creating a demo version of Fireworkz for Windows so that those of you who wish to try it out can do so. When we have it ready it will appear on our website at <http://archive.abacusline.co.uk> along with the RISC OS demo version.