analyse your living costs, you might well wish to group together all expenses relating to the house — rent or mortgage repayments, rates, insurance, etc. and then use the result of that calculation in a larger table within the same sheet. You must be careful to sum all the household expenses before carrying forward any figure into the larger table.

Each individual location of the spreadsheet, known as a cell, is addressed and located by its X and Y coordinates. Horizontally they use the letters A – Z, AA – AZ, and perhaps BA – BM, to allow for the total possible width of the sheet — 65 cells in popular versions. Vertically, numbers 0 – 256 might be used. Each cell may contain a label (such as 'Sales' or 'Profit'), a value that is either entered or derived from a calculation (such as 1,000) or the formula for that calculation, such as B4+B6*B5. Formulae, because they often exceed the displayed size of the box, are usually displayed on a separate line at the top of the screen. On starting a fresh spreadsheet, the size of the cell will be preset, perhaps to eight or nine digits or characters. This is known as the default size. You are normally allowed to shorten or lengthen the cells to suit the type of calculation you are doing. Some packages will allow the leftmost column (usually your titles or descriptions) to be wider than the others. And you don't have to decide immediately how big you want your cells to be. Most versions allow you to expand or contract them even when you've got data in them. Should you reduce the size below that of the length of the contents, the non-displayed part is not erased, but only lost from view.

The last major component of the sheet is the command line, which appears at the top or bottom of the screen in response to the 'command' key: / for example. These commands are for use in formatting and manipulating the layout of the piece itself, not the data, although they may well affect how it appears. Most popular versions of spreadsheet software allow a wide variety of operations on the database. You can, for instance, clear, move or copy whole rows or columns. You can split the window to display together parts of

the sheet that are normally too far apart for the window to cover, and you can then scroll (move across) these windows separately.

Normally, movement between cells is by means of the cursor control key, but yet another command key allows a jump to a specified cell. Loading and saving, clearing, protecting are all performed by the use of command keys, and while on this subject it is worth stressing yet again the importance of regularly saving one's work. It takes a longish time to set up a spreadsheet — normally a lot longer than it does to enter the data. As a general rule, *always* save a sheet before you start to enter into it. Then, if you do make some ghastly mistake, you will have minimised your loss.

Results are transmitted to the printer on a command key, but care must be taken to define which part of the sheet one wants printed by use of the parameters. Just as the screen is a window, or portion of the whole sheet, so, of course, will be the printed page from an output printer. If you need to print a sheet that is wider than your printer, the recommended course is to do two print runs and then stick the pages together.

The use of windows, as we have noted, allows one to have two different parts of the sheet displayed at the same time. A sheet with a split window can also be printed. This is particularly useful when entering information, as one can refer back to any earlier entry. Most packages allow the user to 'hold' either or both the top and first lines, useful for the same reason, as these usually contain the titles or labels.

Up until now, we have considered the sheet as a table, which one could access only serially (one item after the next, along a row or column), but if one were to dispense with the luxury of summing rows or columns, there is little reason why the sheet should not be laid out in any pattern, if that pattern helped ease the user's thought paths. Bear in mind, though, that such sophistication within the database will require an even more thorough job of systems analysis than ordinarily.

The business-oriented spreadsheets, like Visicalc, Supercalc and Masterplan, all offer the

What If . . . ?
If the contents of any field are changed, the spreadsheet will automatically recalculate all other fields which in some way depend on that figure. The speed and ease of this process, encourages the user to test out the validity of his budgets, forecasts and projections to see what happens to, say, the overall profit if certain conditions change. Take this example of a fruit seller...
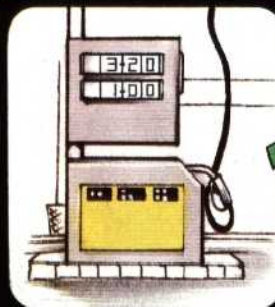
If the price of petrol were to rise by X%...
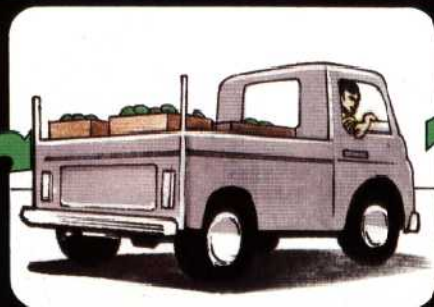
Then the monthly transport costs would go up by Y%...

This in turn would increase the wholesale cost of apples...

Which would be passed on to the customer in the form of higher prices...