Planning Ahead

	A			B			N	
1	JANUARY			FEBRUARY	1		TOTALS	
2	42.41			18.75	2		388.4	
3	160.35			149.89	3		1732.7	
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Fields Of Play
A spreadsheet is divided into rows and columns, and the intersection of a row and column is called a 'field' or 'cell' that can be addressed by its coordinates (A1, B3 etc.). Each field may contain a title (e.g. JANUARY), a number (e.g. 149.89) or a formula. Field N2 contains the formula 'SUM(A2:M2)', which is the sum of the top row of figures from January to December. The result of this calculation is displayed: 388.4. Note that the spreadsheet has been divided into two windows so that March to December are not currently visible

A 'spreadsheet' program can help you put your computer to profitable use. Planning , budgeting and forecasting are its main applications

It has been estimated that managers spend anything up to 30 per cent of their time preparing budgets – an activity that always calls for many 'what if…' questions to be asked. Traditionally, a sheet of paper, usually the size of a whole double-page spread in THE HOME COMPUTER COURSE, was used. This was ruled vertically into a dozen or more columns, each of these columns was headed with a month number, and all the types of expenditure entered down one side. In each column the month's expenditure in the various categories was entered. By this means, one could sum the columns to arrive at a total expenditure by month, and add up the rows to find the total spending under one heading for the whole year.

The problem came when one had planned to spend too much — or worse still, too little — and had to go back and alter a large number of figures, and re-calculate the row and column totals accordingly.

By using a spreadsheet program, one is able to re-calculate the entire page of figures every time a single basic element is altered. If, for example, the cost of Transport in January is changed, this alteration will cause the total expenditure for that month to change, and the whole of the expenditure under that heading to change with it — at the touch of a key. No wonder that spreadsheet packages are the world's largest selling type of software!

In common with most pieces of commercial software, spreadsheets are normally written with 'overlays' — that is not all of the program is actually resident in the machine all the time. If you think of the program as being divided into sub-routines (see page 77), a subroutine that is not required in the current operation will not be called up from backing storage (disk, or perhaps tape) until a 'call' is made into it. The operating system will then *lay* that subroutine *over* one that has become redundant (hence, overlay). As you can imagine, this method of stretching available memory is very useful indeed, but it does mean that one is often waiting while the back-up storage medium is transferring information into main memory.

Spreadsheet packages — you can usually spot them by their name, which more often than not ends in 'calc' — are available for a wide variety of home and business computers. Most popular, in terms of the number sold, is Visicalc, originally written for the Apple II and made available in mid-1979. The world of microcomputer software is never slow to react to the success of one of its members, and here was no exception. Before you could say 'spreadsheet' they were everywhere, for every type of machine, appropriate to the purpose or not.

To be of any real use a spreadsheet has to have two attributes — size (not necessarily what you see on the screen, because, as we will see later, what you see is just a 'window' on the whole), and a good range of formatting and control commands.

This means that there are severe limitations on the sorts of machine that could hope to run a spreadsheet program to its best advantage. As a rule of thumb, 32 Kbytes of RAM and an 80-character screen are minimum requirements for a business application, though a 40-character screen would probably suffice for domestic purposes.

Home computer users will find that many of the packages available for cassette-based machines like the Spectrum or Vic-20, while naturally being limited in size and power, will prove very useful.

Because spreadsheets have the ability to answer 'what if…?' questions, they can obviously be used to set up simple computerised models (see page 101). We gave there an example of the work of a systems analyst, and should you use a spreadsheet package yourself, the need for similar careful planning will soon become obvious. Databases, we have noted, consist of a mass of raw information that is ordered according to the user's requirements when the data is retrieved. Word processors, the other big-selling type of software, exist to allow the user to shift around single words or whole blocks of text at run time. But spreadsheets are a little different, in that they really do require the user to go through a planning process.

For instance, if you are using a spreadsheet to

The Bottom Line
The cursor is the rectangular block currently occupying field N2. If something is typed it will appear in the field where the cursor has been positioned. The full contents of that field will also be displayed on the command line of the spreadsheet, which in this case is at the bottom of the page

FORM:SUM(A2:M2)