-The calculation section involves totalling the numbers and hence determining what share of the $360^{\circ}$ making up the 'pie' segment will have.
$\bullet$ Drawing and filling in the slices of the pie is simple enough, but on the Commodore 64, at least, you will have some problems because of the way the colours run into each other. It's a good idea to use 'double colour' mode - just use DOUBLECOLOR instead of DRAW in the procedure that draws the chart. If you are still having problems then leave a 'hole' of 10 units in the centre of the pie chart.
The actual labelling can be done in the same way as for the barchart, although problems may arise when you position the turtle before doing the writing.

Once you've achieved this, why not try writing a program that draws both a pie chart and a barchart for the same data side by side?

## Logo Flavours

Many LOGO versions do not have an equivalent to STAMPCHAR, which makes printing characters on the graphics screen very difficult.
The colour numbers and the size of the barchart will need to be altered to suit different machines. All of these details are gathered together in INIT, so that they can be dealt with at once.
For all LCSI versions:
Use TYPE for PRINT1
Use EMPTYP for EMPTY?
You may need to use EQUALP in place of the equals $\operatorname{sign}(=)$
SETXY must be followed by a list
IF has a different syntax - e.g: IF EMPTYP:DATALIST [STOP]

## Good Graph !

Both barcharts and pie charts are useful ways of displaying information graphically, though LOGO is not really ideal for the purpose because of its slow speed

DATA INPUT

| London York |  |  |
| :--- | :--- | :--- |
|  |  | New |
| JAN | 53 | 94 |
| FEB | 40 | 97 |
| MAR | 37 | 91 |
| APR | 38 | 81 |
| MAY | 46 | 81 |
| JUN | 46 | 84 |
| JUL | 56 | 107 |
| AUG | 59 | 109 |
| SEP | 50 | 86 |
| OCT | 57 | 89 |
| NOU | 64 | 76 |
| DEC | 48 | 91 |

Rainfall Data (in
millimetres)




