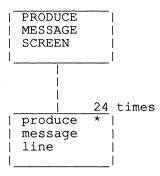
26. Program Design using Structure Diagrams (Iteration)

If a main job can be broken down into a single simple task repeated a number of times - this is called an *iteration* (means repetition) and it can be shown on a Structure Diagram.

Example 1 - Display a screen of 24 'hello's (in a column).

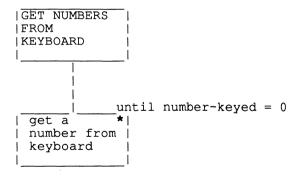
Displaying a whole screen of 'hello's breaks down into the simpler task of displaying the message line 'Hello' - repeated 24 times. On a structure diagram this is shown as:



The asterisk in the top right corner of the lower rectangle indicates that the smaller task is repeated - and the number of times is shown above the rectangle.

Example 2 - Ask for a stream of numbers to be keyed in - stop when zero is typed.

This task will break down into the simpler task of programming the computer to ask for a single number - repeated until a zero is keyed.



Exercises

Produce Structure Diagrams for each of the following tasks.

- 1. Clearing the screen consists of displaying 24 blank lines.
- Homework consists of writing 100 lines saying 'I must work harder in class'.