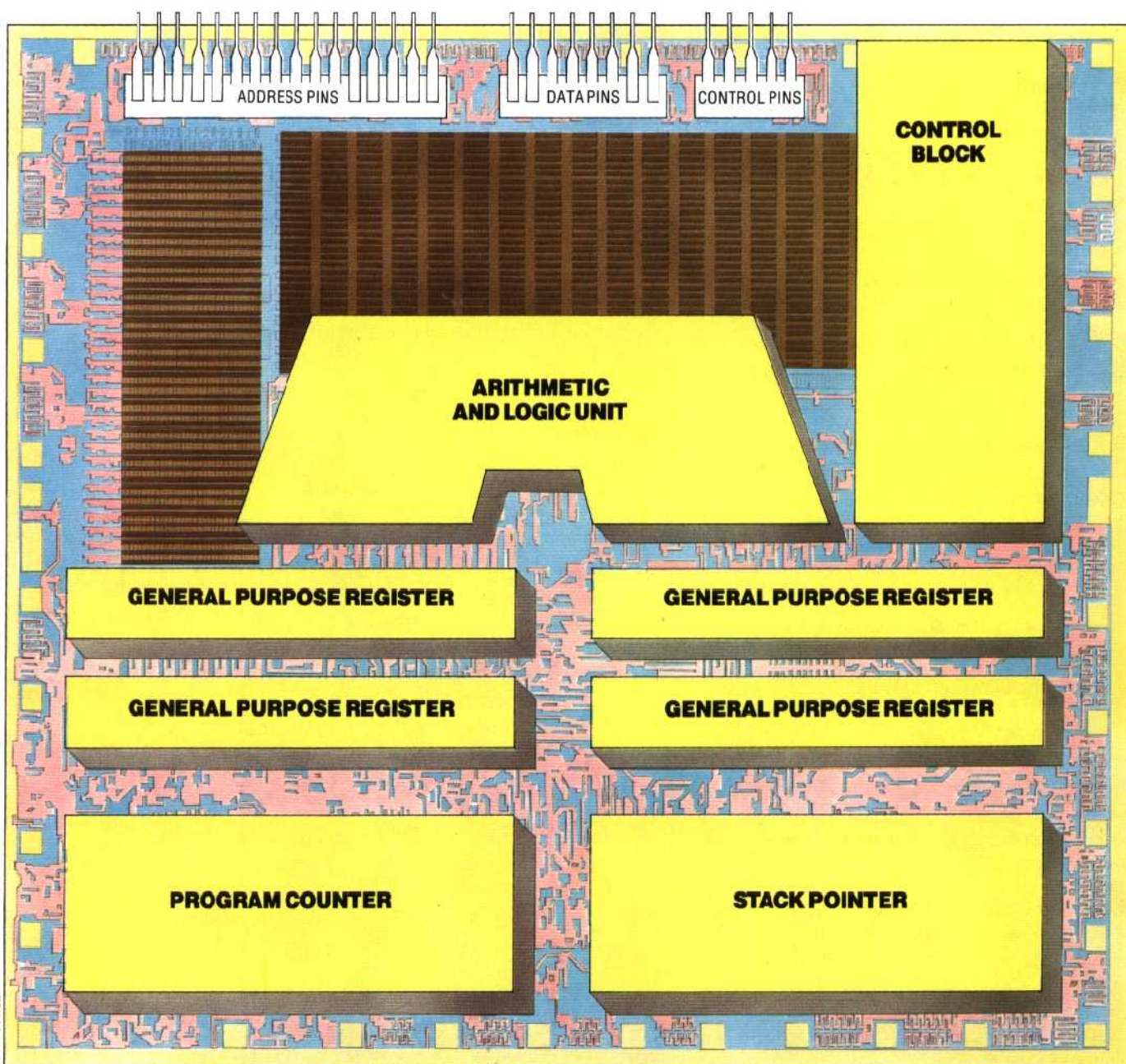


The Nerve Centre

All paths of activity lead in and out of the computer's 'Central Processing Unit'



KEVIN JONES

The computer's function is controlled by the CPU — the Central Processing Unit. The words can be interpreted fairly literally: Central — at the heart of the computer; Processing — it does the work; Unit — it stands alone. A very simple computer (see illustration) could consist of nothing more than a CPU, some memory and some I/O (input/output) circuitry.

The I/O is needed for the computer to communicate with the outside world. In a very simple application, a computer in a washing machine would need I/O in order to turn on

motors and heaters. The memory is needed to store instructions for the CPU and data for the CPU to process. The data processed by the CPU may include numbers and binary codes that represent characters (letters, digits and signs such as @ and !).

If some of the memory locations contain instructions to the CPU, and some are data for the CPU to process, how does it know which ones are instructions and which ones are data? To answer this question, we need to take a look inside the microcomputer.