Sabyrzhan Iliyas ISU-US-23-2a

Little Man Computer (LMC) - My short retelling

The Little Man Computer (LMC) model was created as a simplified computer abstraction that helps to understand the key principles of the functioning of the central processing unit (CPU). This model is based on the concept of a "little man" who executes instructions inside a computer. This metaphor makes it easy to imagine the internal processes taking place in a computer as a sequence of simple actions.The main components of the LMC are mailboxes (memory), a battery (calculator), a program counter and a set of instructions. Mailboxes are memory cells, each of which has its own address, from 00 to 99. They store three-digit numbers, which can be either instructions or data. The accumulator is used to perform arithmetic operations such as addition and subtraction, and to store intermediate results. The program counter points to the address of the next instruction and increases after each command is executed.The LMC operation process can be divided into three stages: downloading the instruction, decrypting it, and executing it. The little man looks at the program counter, extracts the instruction from the corresponding mailbox and decrypts it. The first digit indicates an action (for example, addition), and the remaining two digits indicate the mailbox address. Next, the little man performs the appropriate action, for example, loads data into the battery (LOAD), stores it in memory (STORE) or performs arithmetic operations (ADD, SUBTRACT). After executing the command, the program counter increases and the cycle repeats.In this way, LMC clearly demonstrates how computers execute instructions and control the flow of data. This model is an

excellent tutorial that allows you to better understand the principles of real processors, which is the basis for further study of more complex architectures.