**[A Program counter (4bit)](https://www.youtube.com/watch?v=SFzbYKfyu8w&list=PLk4sSigu0N0W4v755N_O6Jk1WWrfWIGgm&index=3)**

A diagram of a program counter

Description automatically generated

A diagram of a circuit

Description automatically generated

The Program Counter, typically shortened to PC, serves as a register intended to store the memory address of the upcoming instruction that needs to be retrieved and executed within the program. It functions to monitor and indicate the current location in the program's sequence of instructions.

Following the retrieval and execution of each instruction, the Program Counter undergoes an automatic increment. This incremental action guarantees the CPU's progression to the subsequent instruction in memory, thereby establishing the orderly sequence of program execution.

The SAP-1 computer's control logic is responsible for managing the Program Counter. It has the capability to load the Program Counter with particular addresses, enabling the computer to jump to various sections of the program. This functionality supports the creation of branching and looping structures within the program.