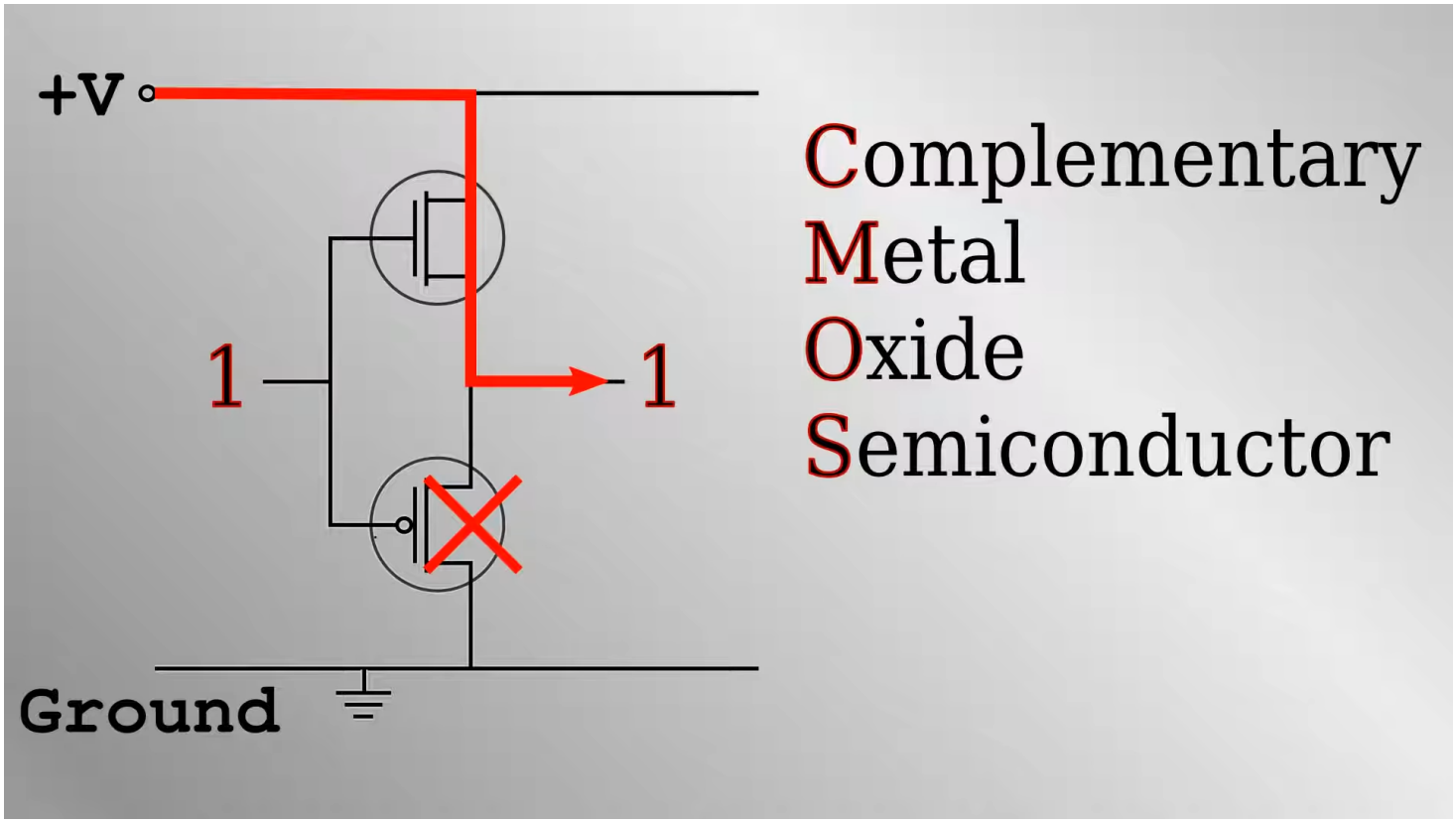
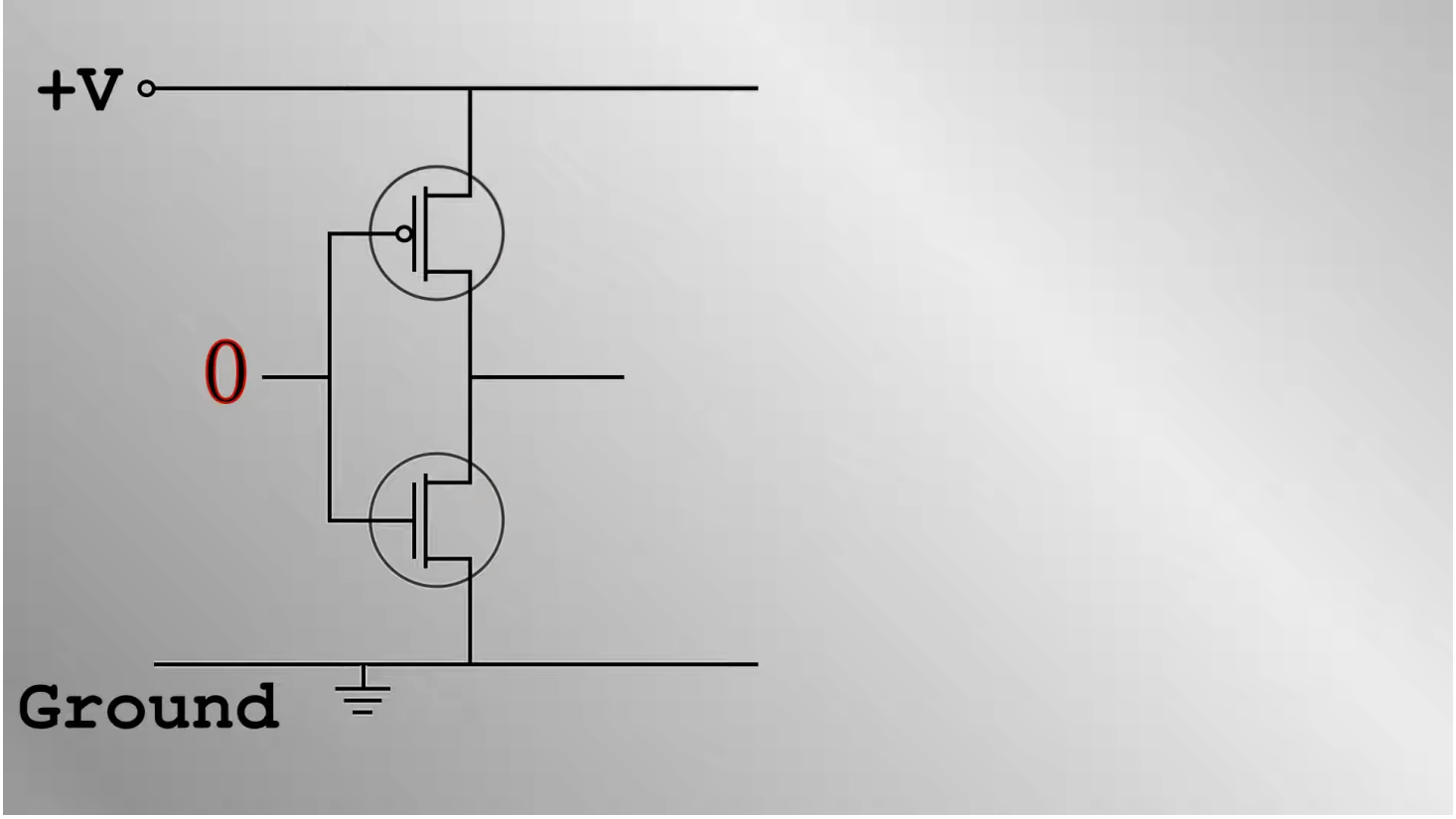
Computers



First is n type channel(N P N) (Visit Transistors)
Second is p type channel(P N P) (the one with ***X***)

When it is in the above order,
Input | Output
1 | 1
0 | 0



When the order is reversed as above,

Input | Output

1 | 0

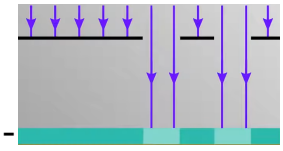
0 | 1

As we can infer above in the 1st input is given as it is, in the 2nd input is reversed for the output

Lithography

-photoresist-

-light on mask-

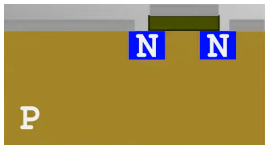


-

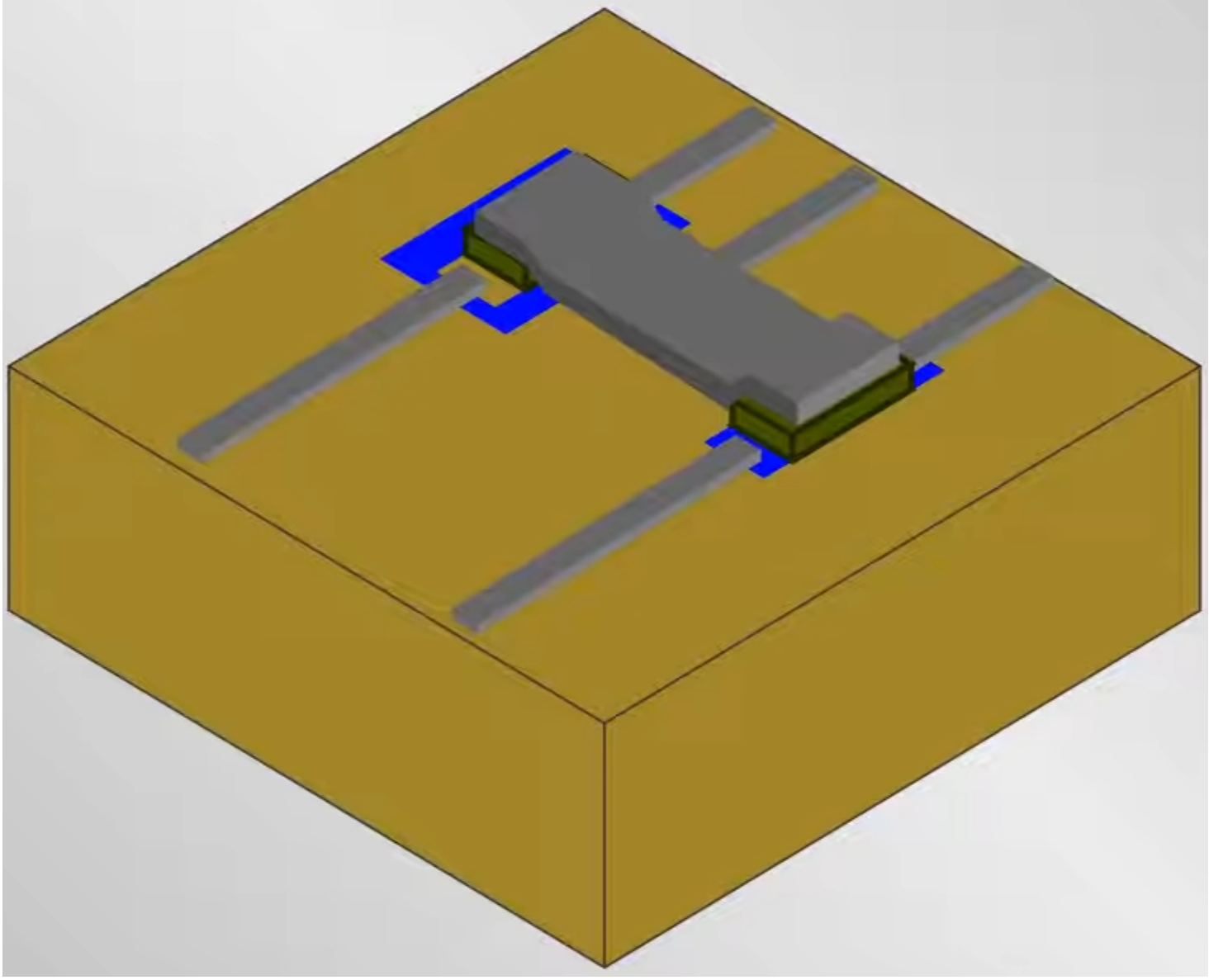
etching-

-adding n type-

-etching n type(NPN)-



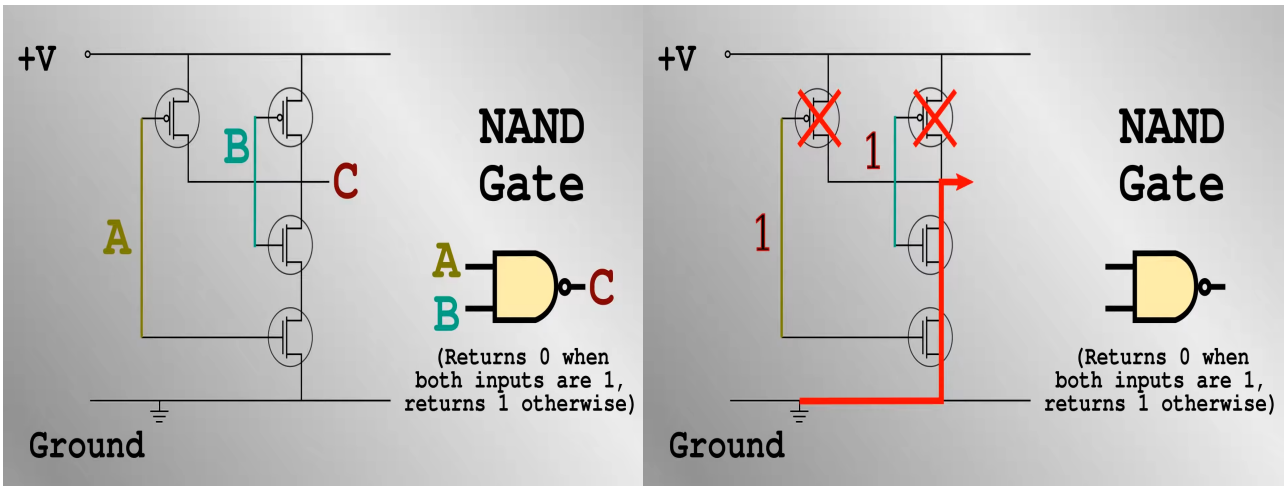
-adding metal(Gate)--> Finally



1 or 0 is represented by high or low voltage Transistors in pairs acts as the switch.

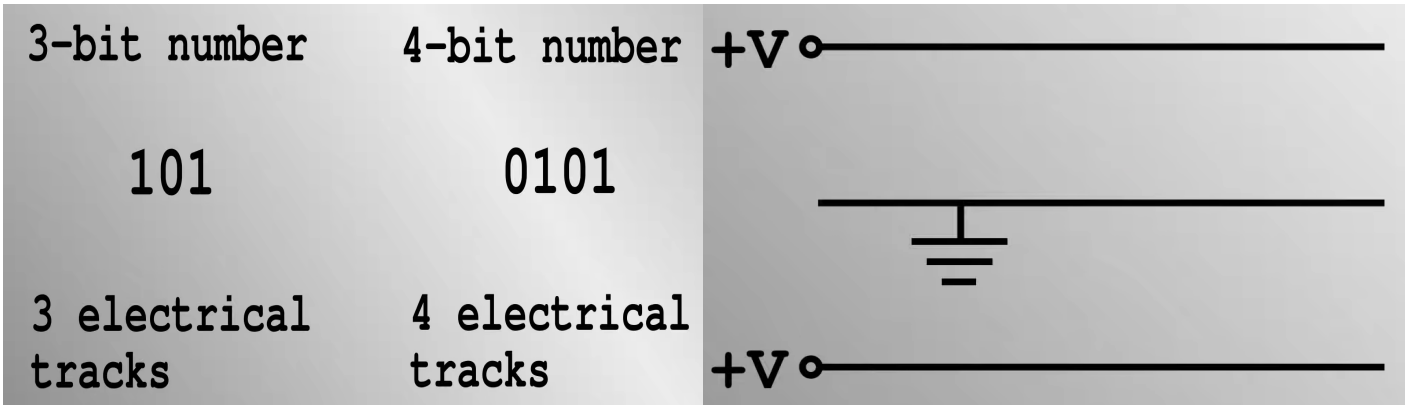
Logic Gates:

NAND gates with CMOSs



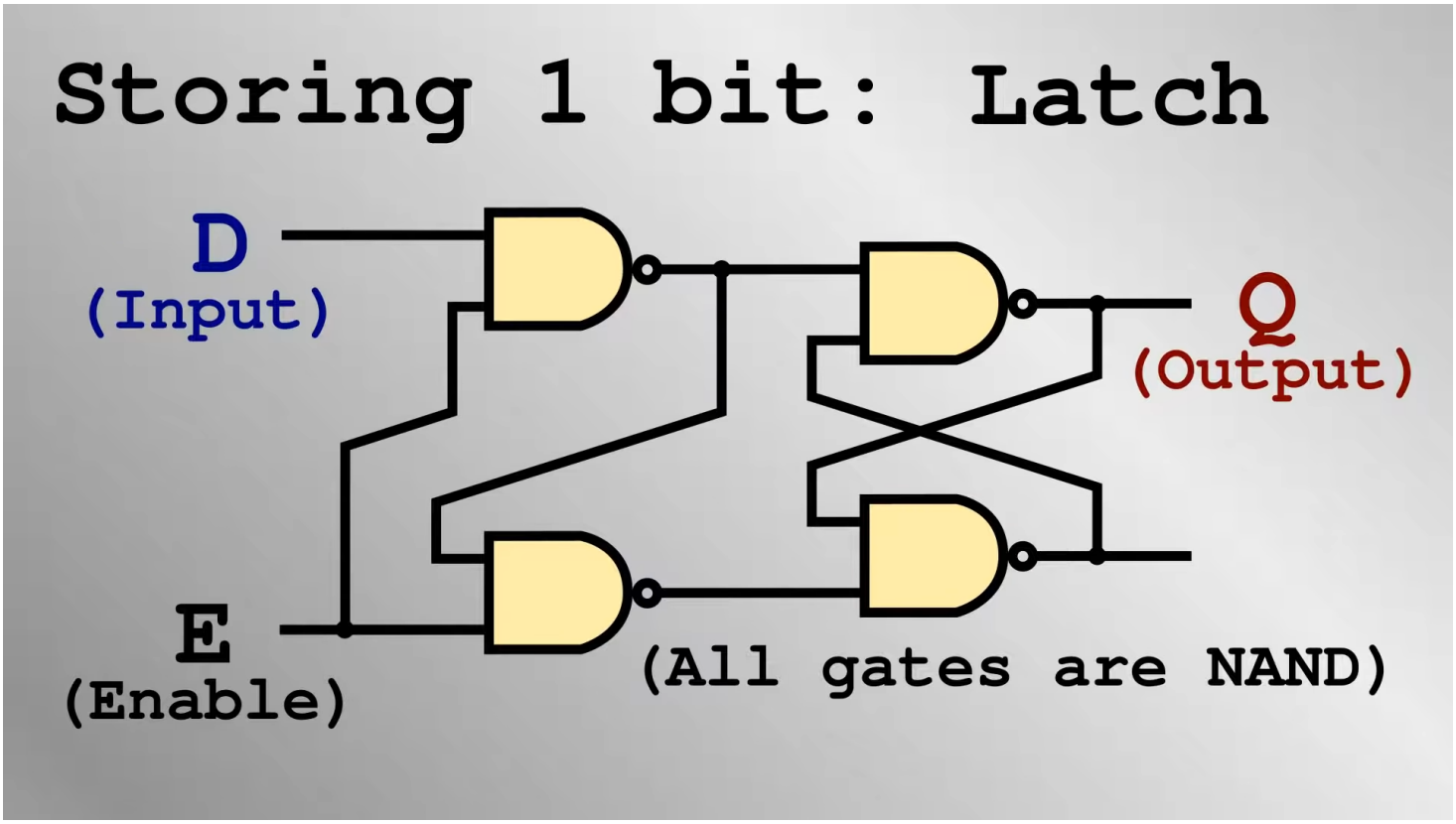
Nand gates are called "Universal Gates" as they can make up any other logic gates if there are enough of them, not necessarily

efficient.



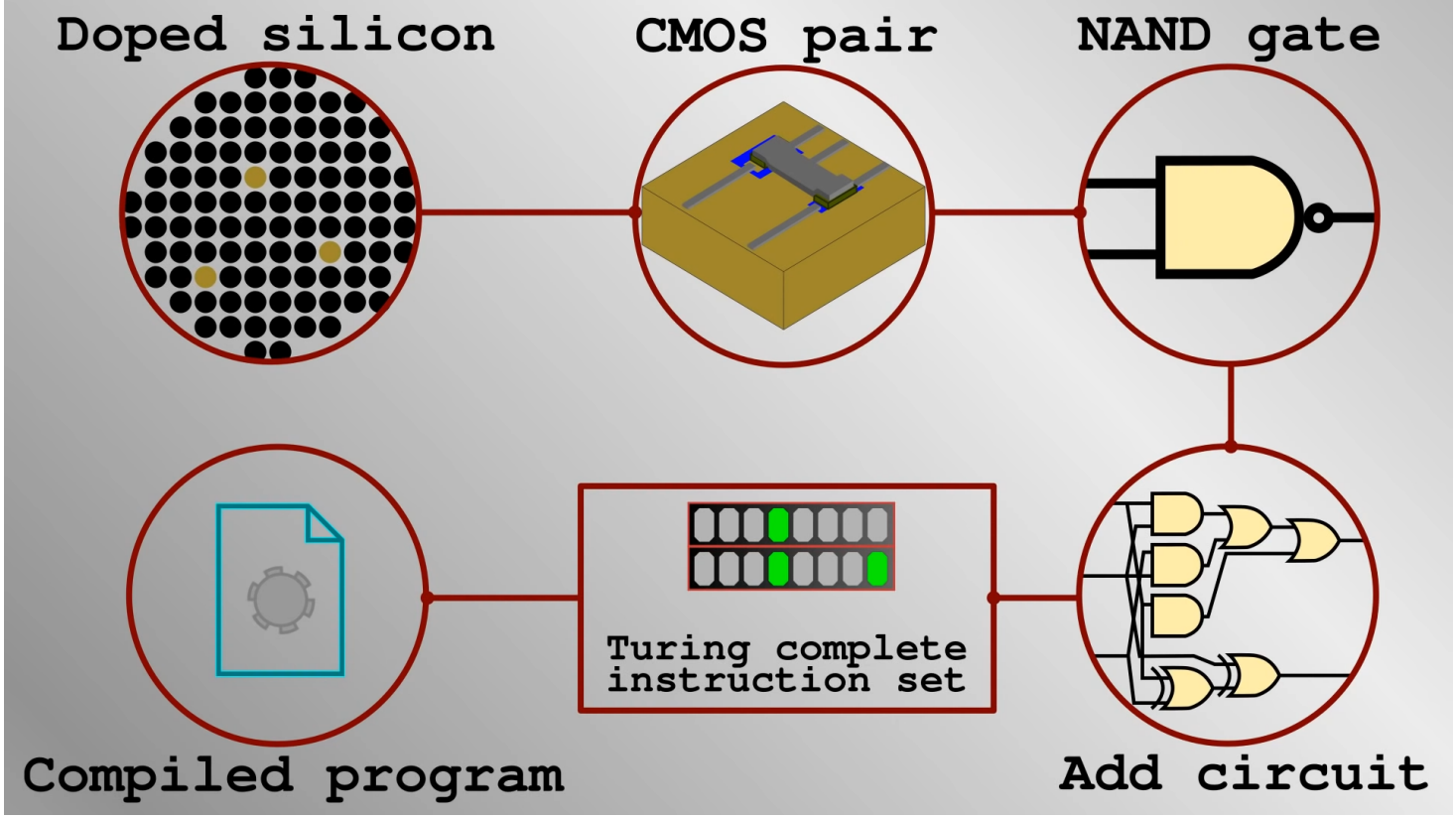
A track is the portion that stretches in the final output of lithography, it is like the pathway for current with 1s and 0s or in electrical terms, voltage and ground.

Memory and Clock



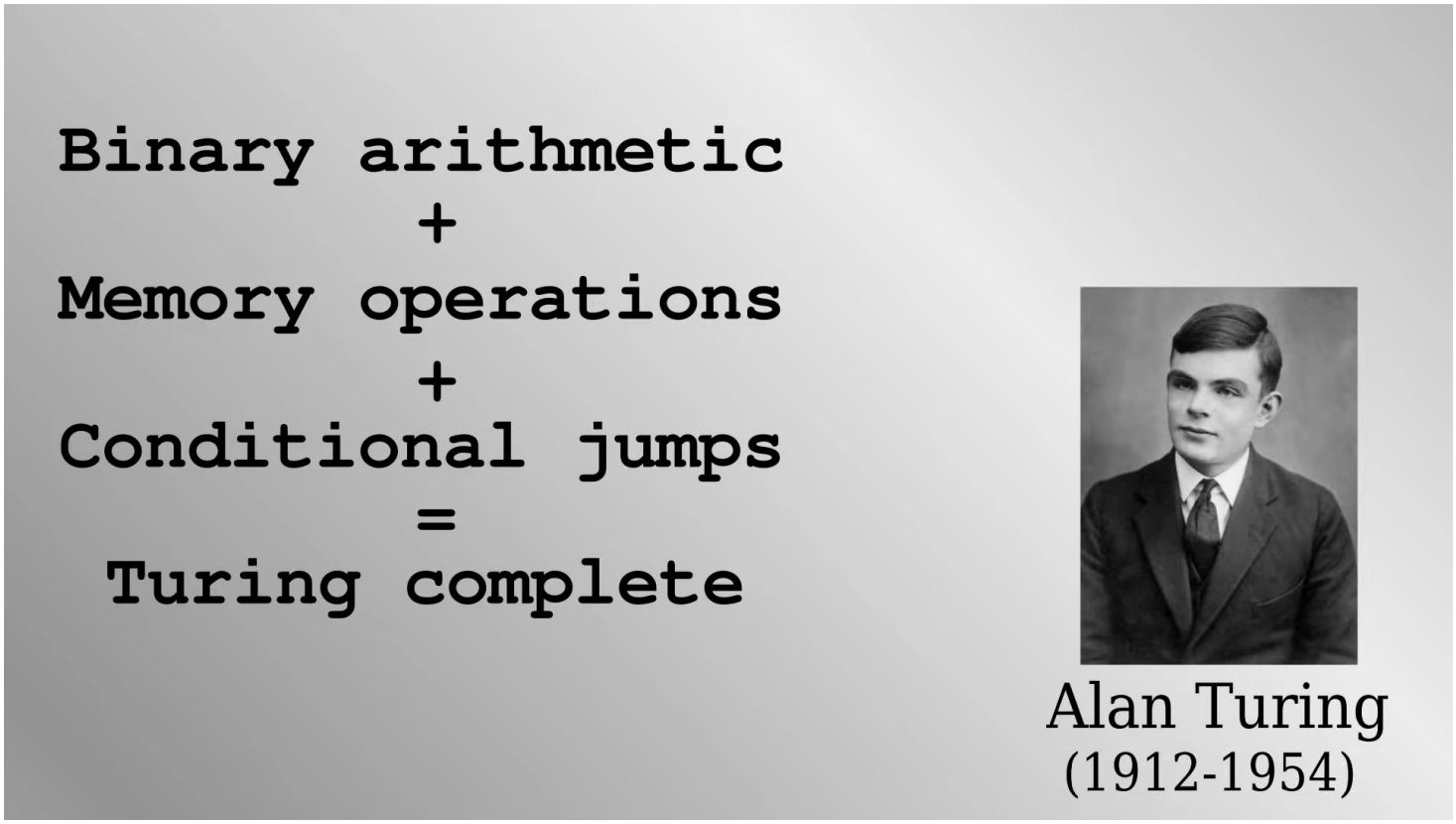
This latch here is what stores data for us, 8 latches form a register and that can store a byte. When Enable is 1 it stores the operation whatever is going on.

And then there's Clock, Instruction set and Loops that we read in EOC..



THE END..

This is something to spend some energy on..



It would be great if we make an AI Agent learn how to use computers by giving it a simulated control of the logic gates in there.

References

1. How a Computer Works - from silicon to apps
2. How Does a Transistor Work?