

Manav Bilakhia LAB 1

Or gate



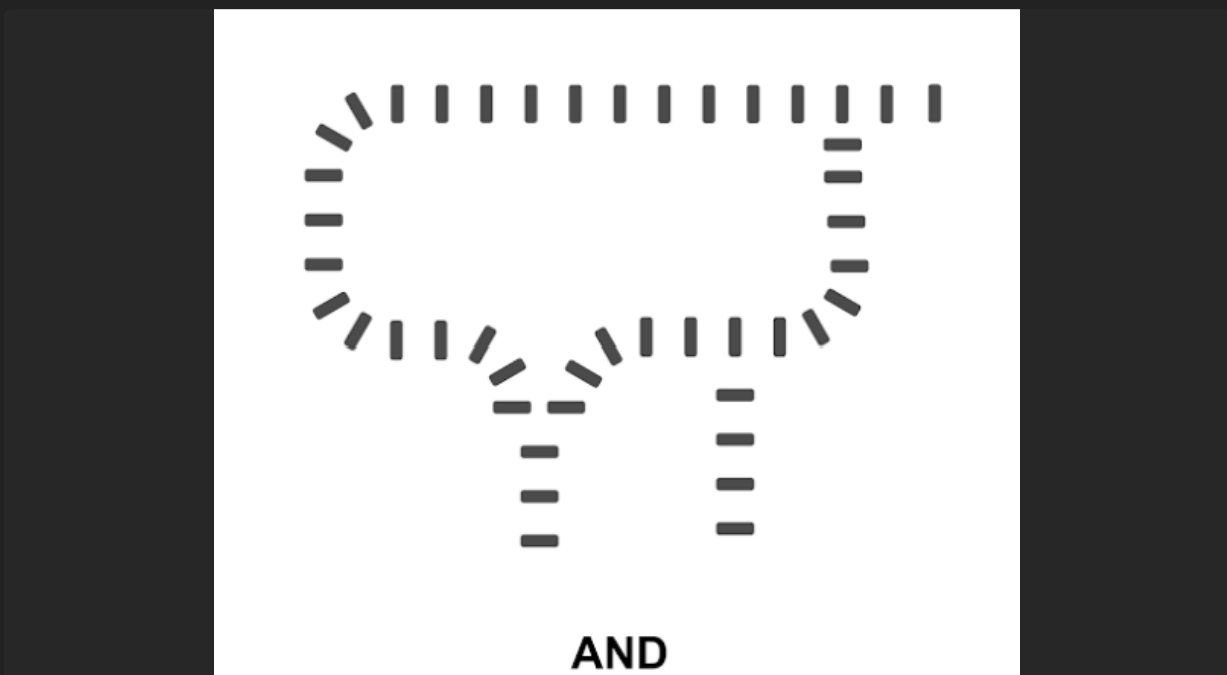
The implementation:

https://drive.google.com/file/d/11agt4oT9x0ObNSAI3m_miFzToCDtw0Qj/view?usp=sharing

It took us under a second to get an output after providing input.

It took us under 2 minutes to reconstruct this gate

And Gate



An interesting implementation: <https://drive.google.com/file/d/1yuoi8WC39oH9JnIxN8BtQPKoCsDqCwtU/view?usp=sharing>

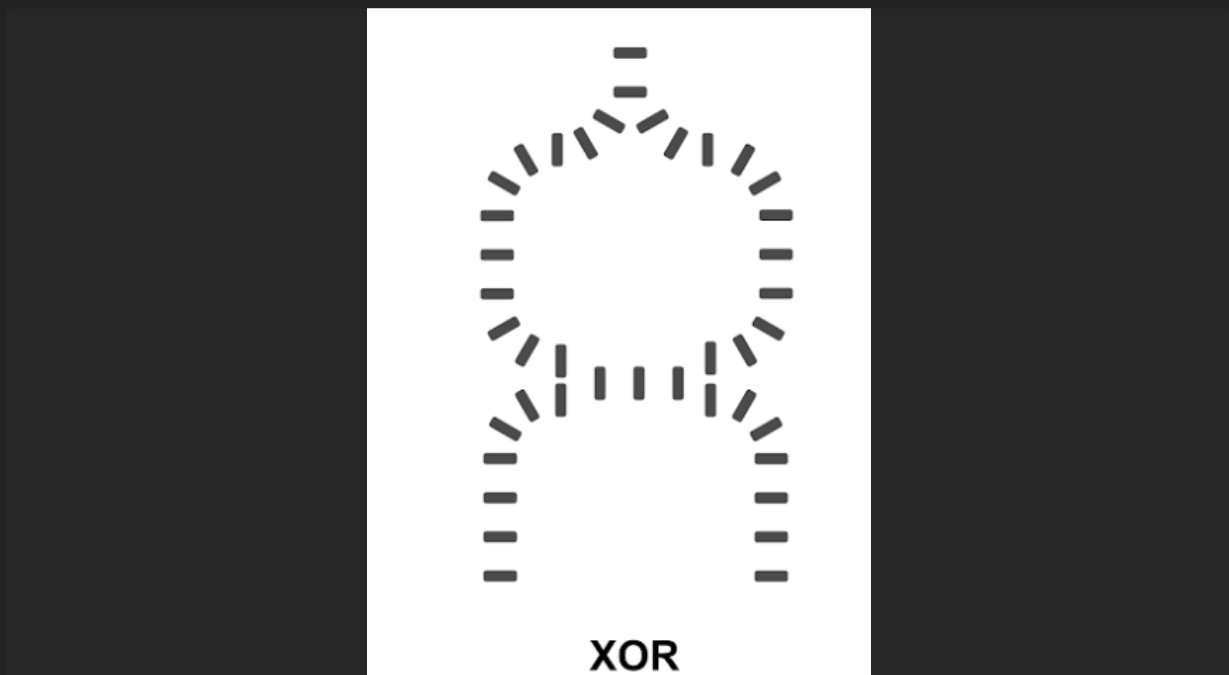
The actual implementation:

<https://drive.google.com/file/d/1MqEwHTjj2xvINye6Ys4pH-8hholKJfyr/view?usp=sharing>

It took us under a second to get an output after providing input.

It took us under 4 minutes to reconstruct this gate

XOR Gate



The implementation:

<https://drive.google.com/file/d/19HsyQAIHsV-OJqYN32infJLt-jbxV9V5/view?usp=sharing>

It took us a second to get an output after providing input.

It took us under 7 minutes to reconstruct this gate

Half Adder

Half adder



Implementation Explanation: <https://drive.google.com/file/d/1GcDT9aKNkqFByKcLHGtJ8Km2uqWd3a3D/view?usp=sharing>

This is the truth table for a 1-bit half adder

It took us approximately 10 mins to to rebuild the gate

It took approximately 2 seconds to get an output

A	B	Cout	sum
0	0	0	0
1	0	0	1
0	1	0	1
1	1	1	0

Full Adder

Full adder



Implementation Explanation:

https://drive.google.com/file/d/1Cx5XpT87BivFYT3WXCnZtBdiK_hC-qDT/view?usp=sharing

This is the truth table for a full adder

It took us approximately 24 mins to to rebuild the gate

It took approximately 10 seconds to get an output

Cin	A	B	Cout	sum
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

As of now, I have approximated the current time for these complex circuits by multiplying the time it takes for a less complex gate to give an output and the number of time that particular gate was used. If we were to actually make these gates using our dominos, It would be safe to assume that there would be a time discrepancy. This is because of all the extra dominos that need to be added to the circuit that are not a part of one of the simple gates that we physically built with dominos.

