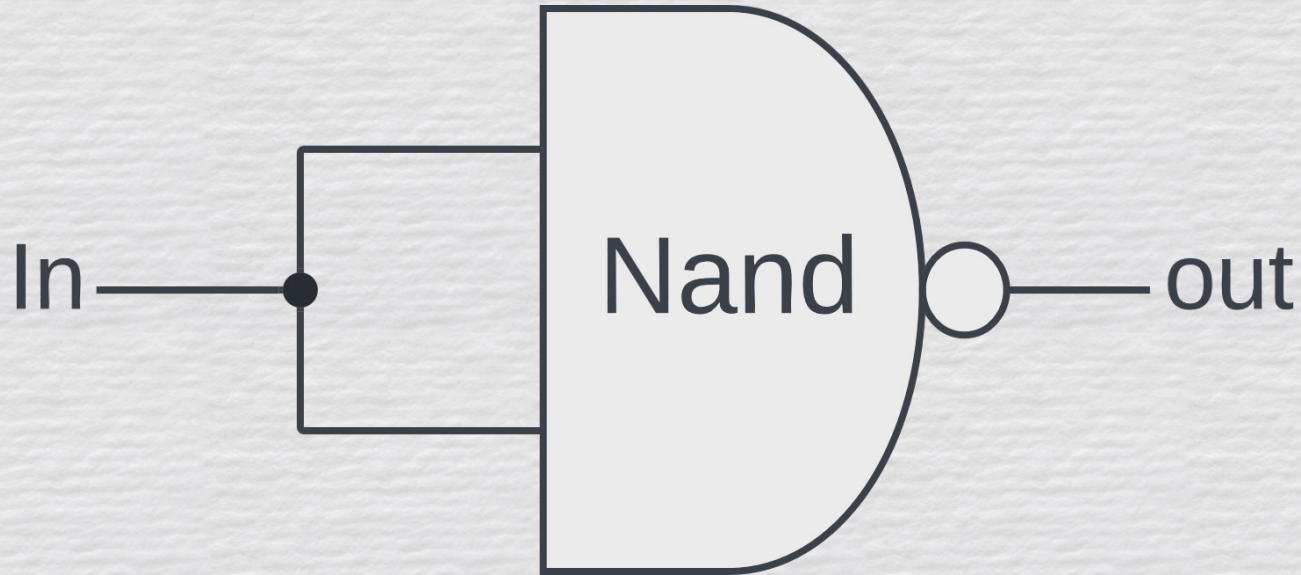


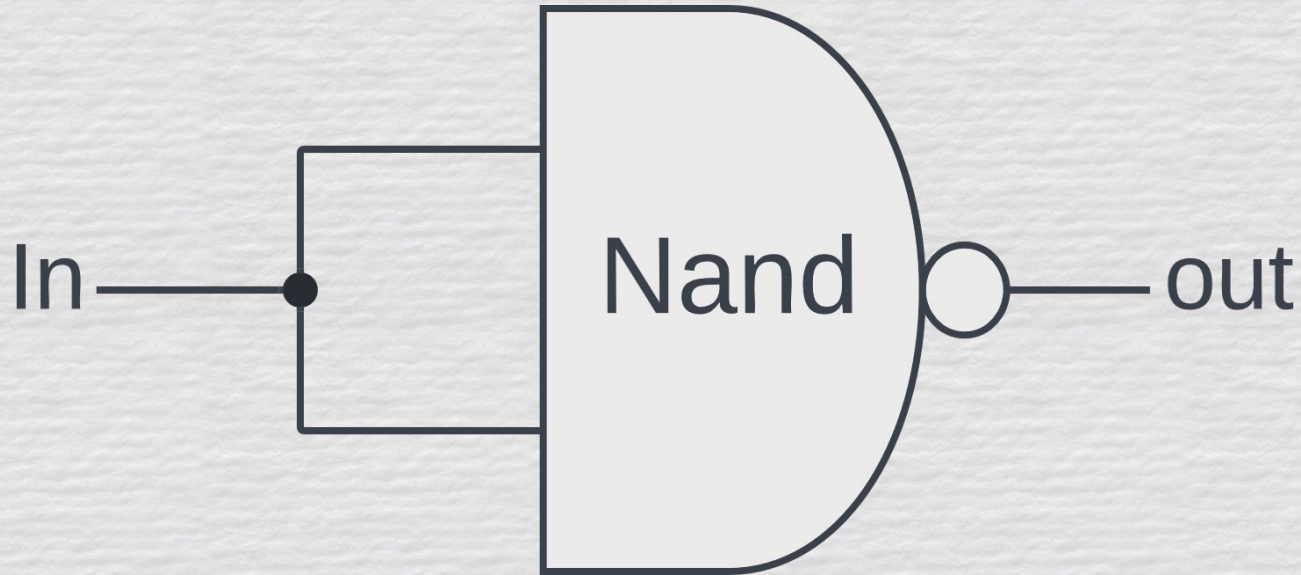
Computer Organization

Basic Logic Gates

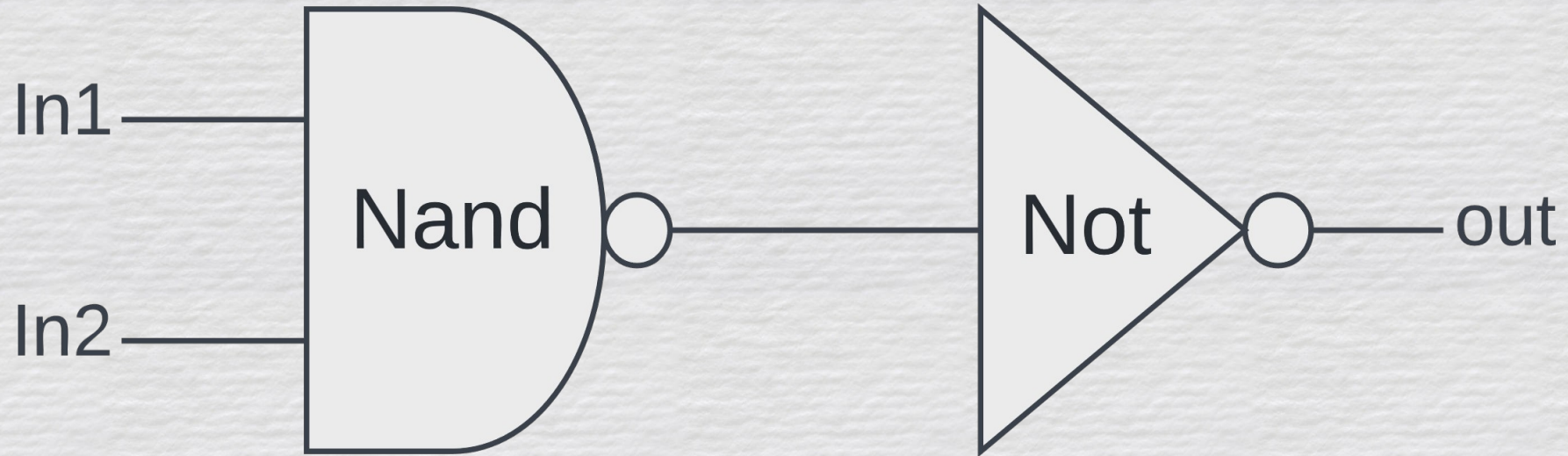
Elementary Gate – ?



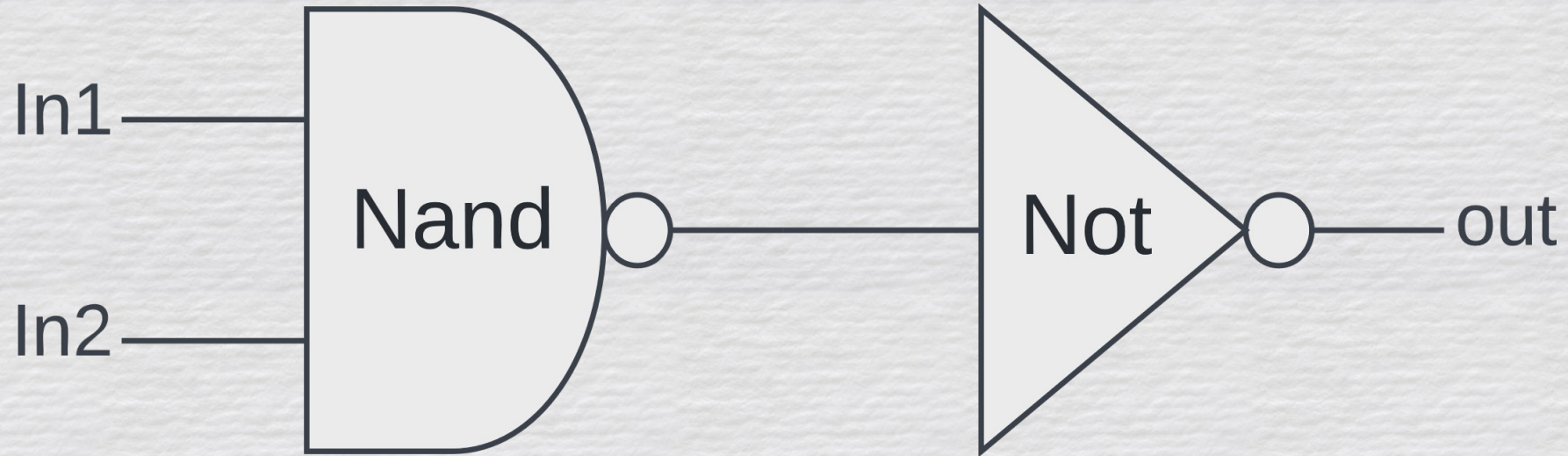
Elementary Gate – Not



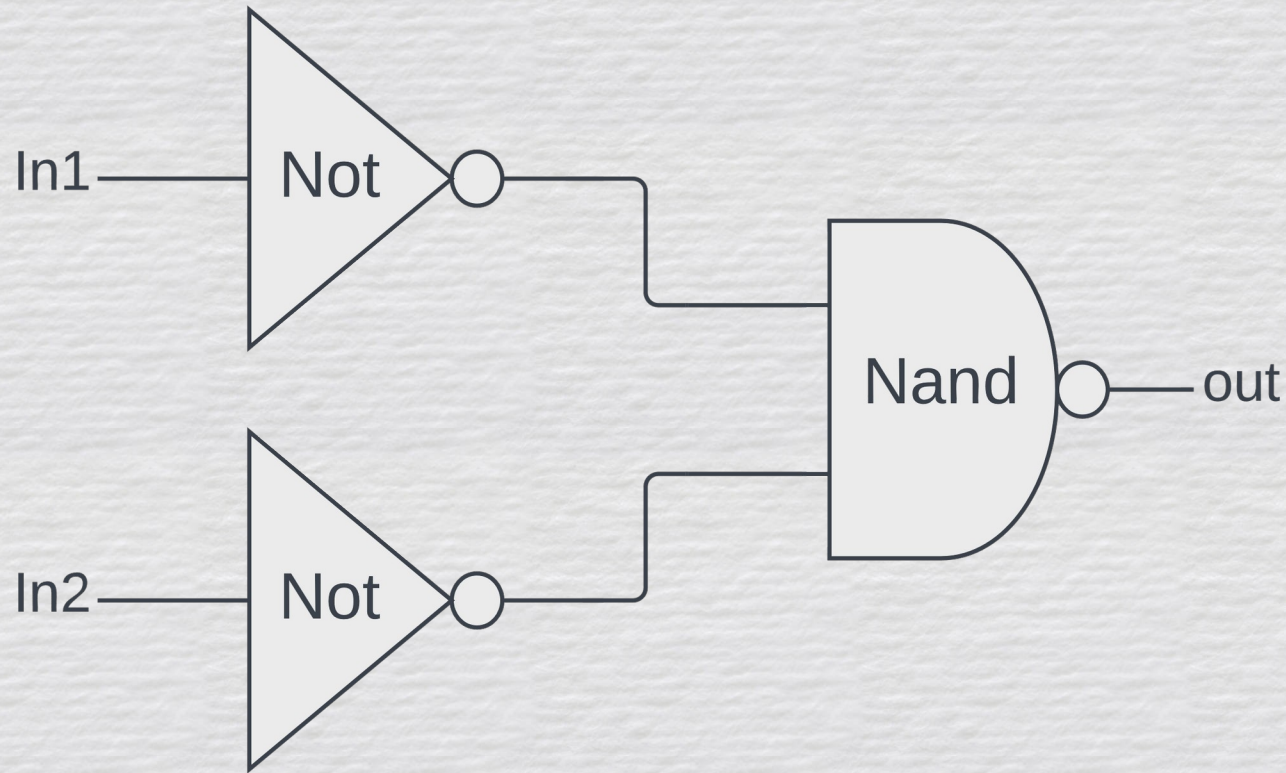
Elementary Gate – ?



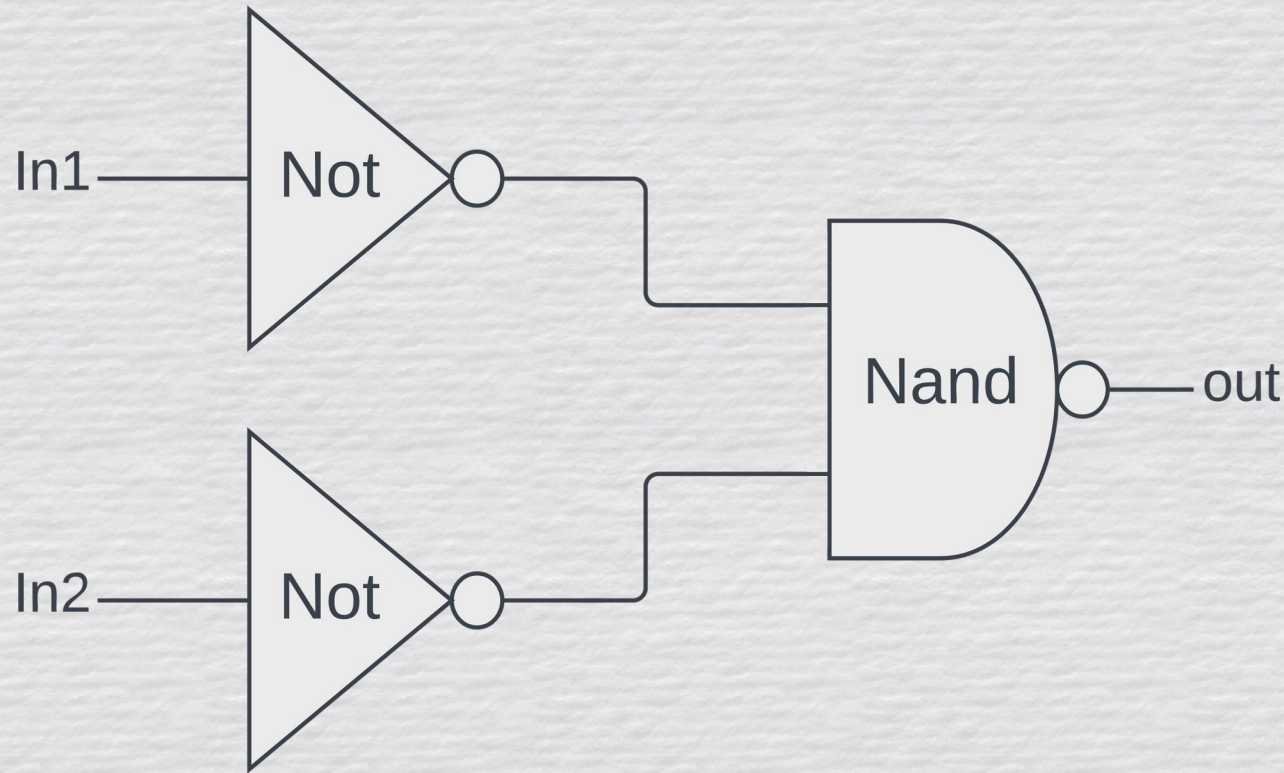
Elementary Gate – And



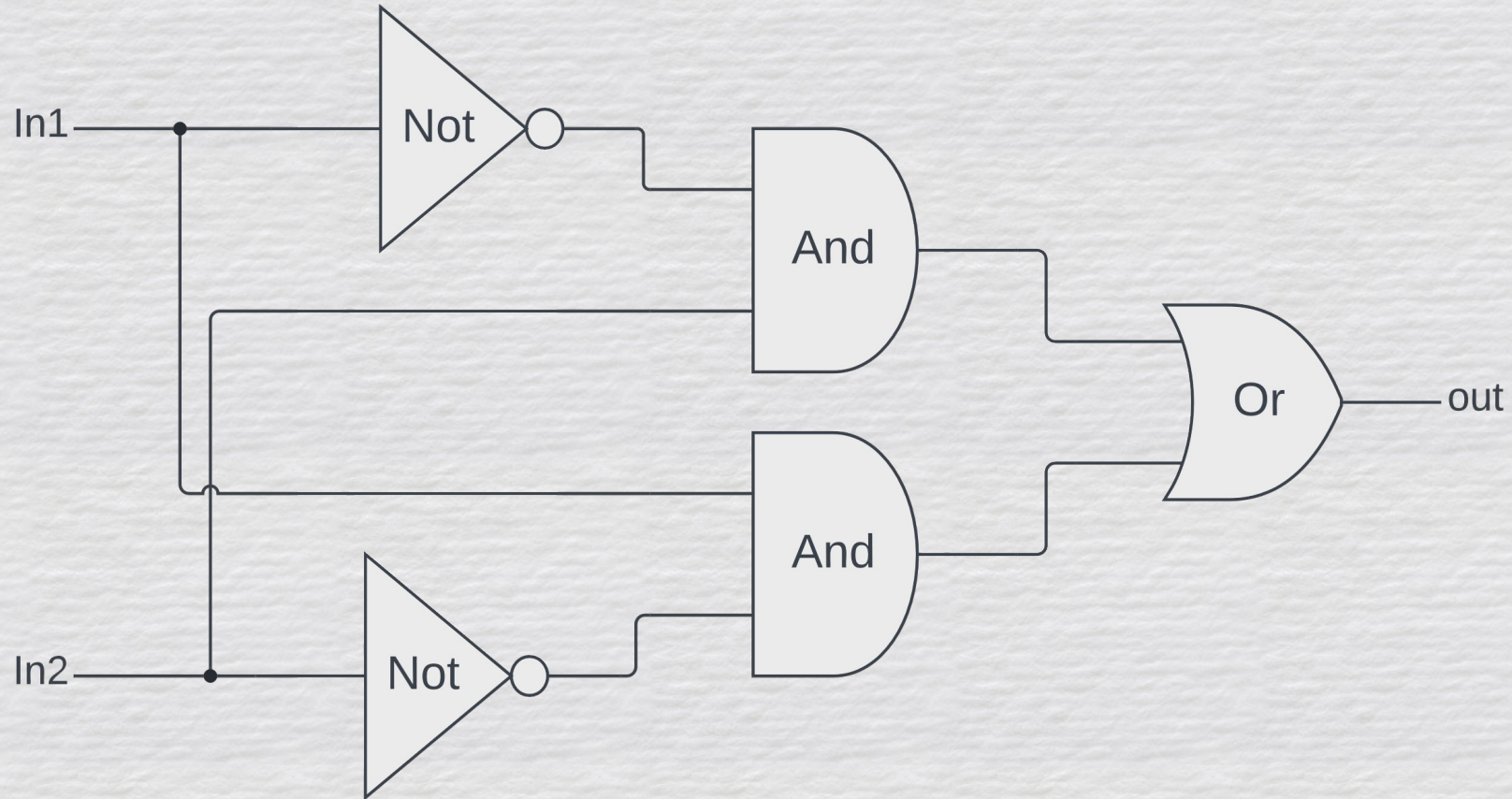
Elementary Gate – ?



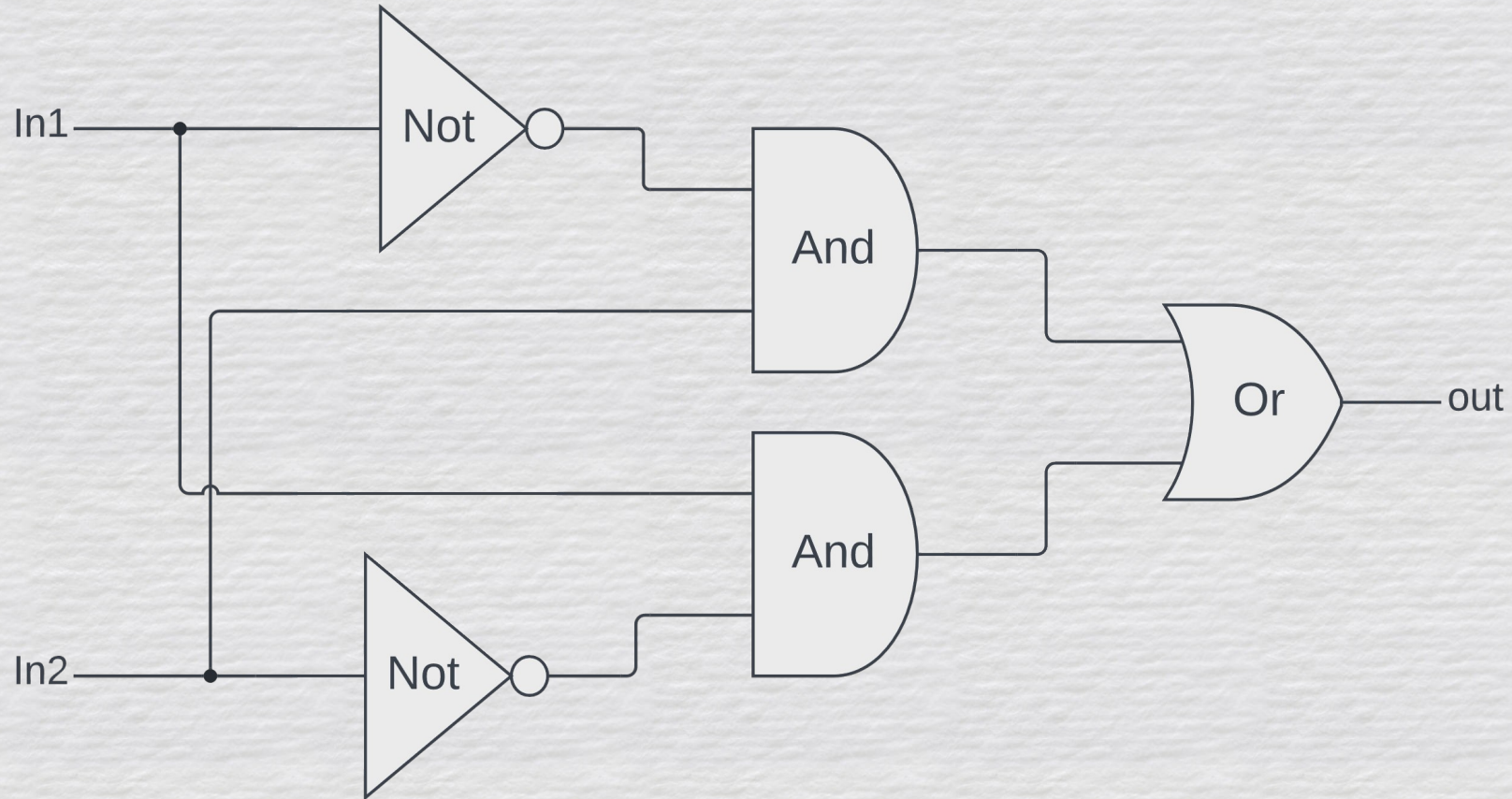
Elementary Gate – Or



Elementary Gate – ?

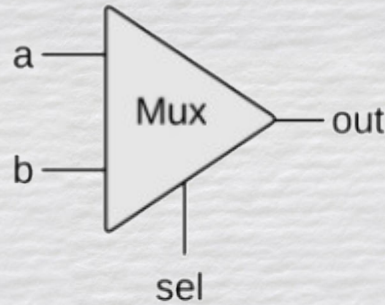


Elementary Gate – Xor

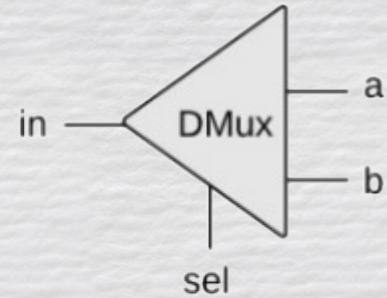


Multiplexers & Demultiplexers

- Commonly used in:
 - Hardware Design
 - Communications Networks
- Mux
 - 3 inputs (1 select)
 - 1 output
- DMux
 - 2 inputs (1 select)
 - 2 outputs

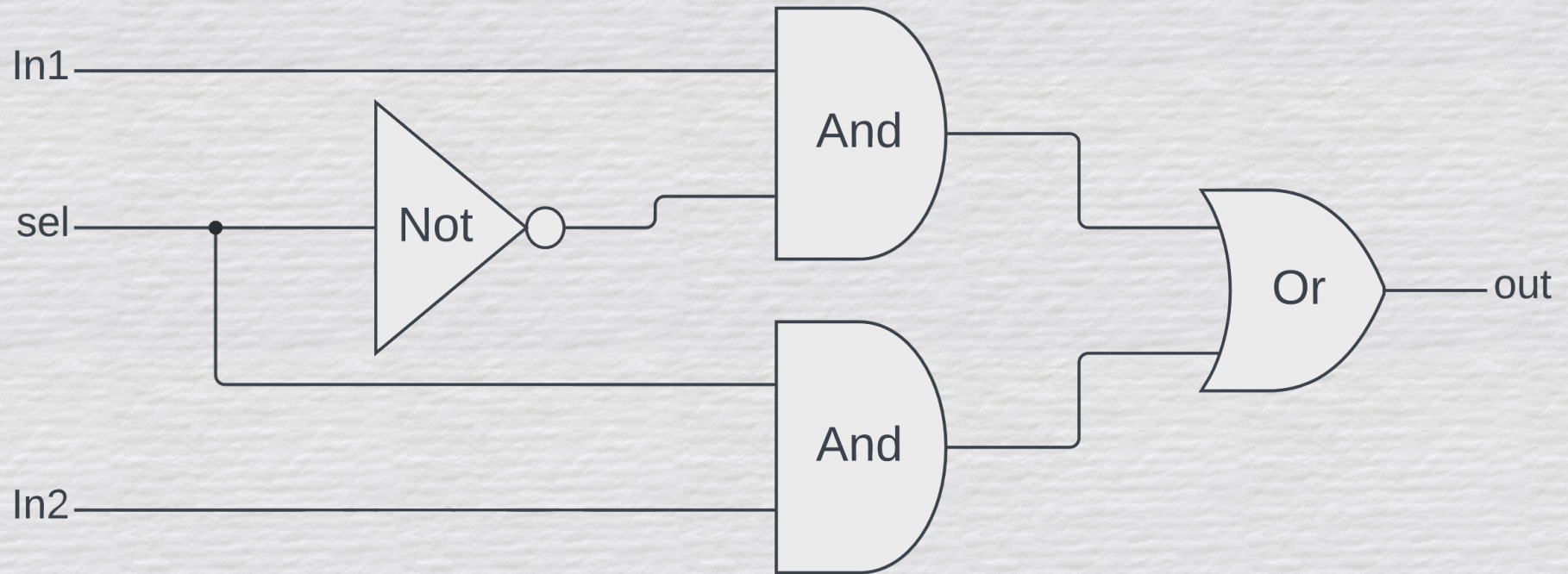


```
if (sel == 0)
    out = a
else
    out = b
```

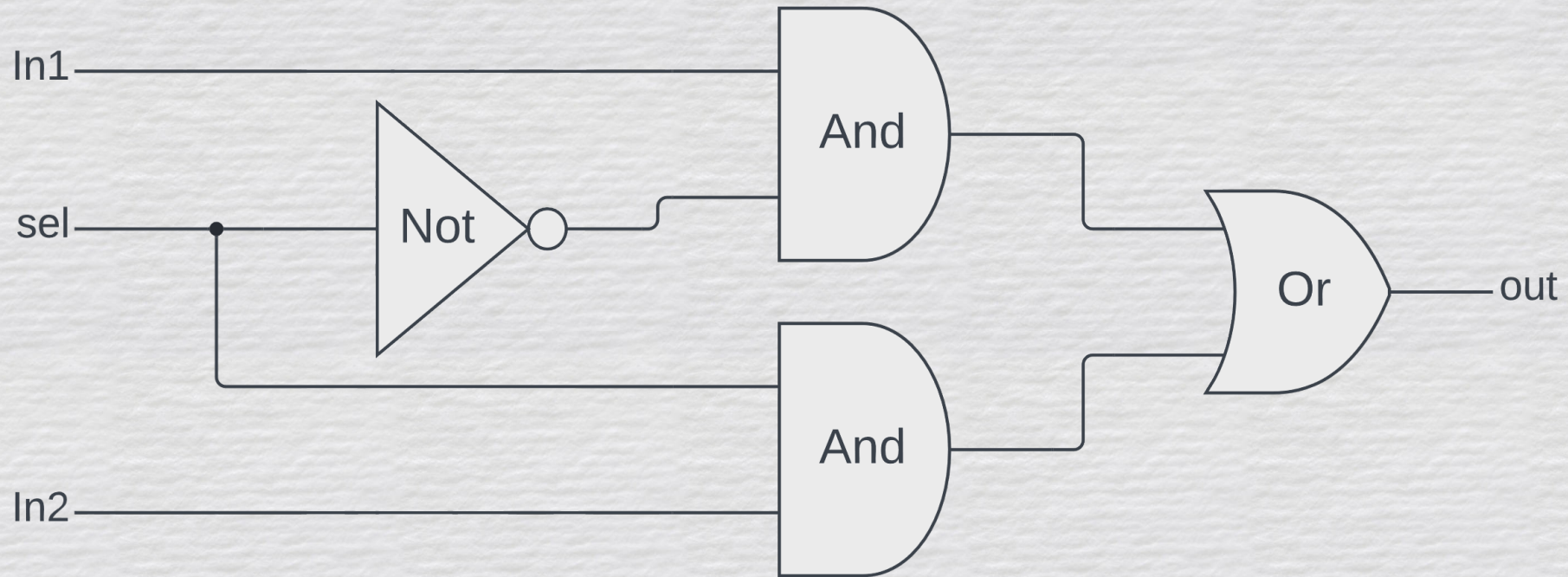


```
if (sel == 0)
    {a, b} = {in, 0}
else
    {a, b} = {0, in}
```

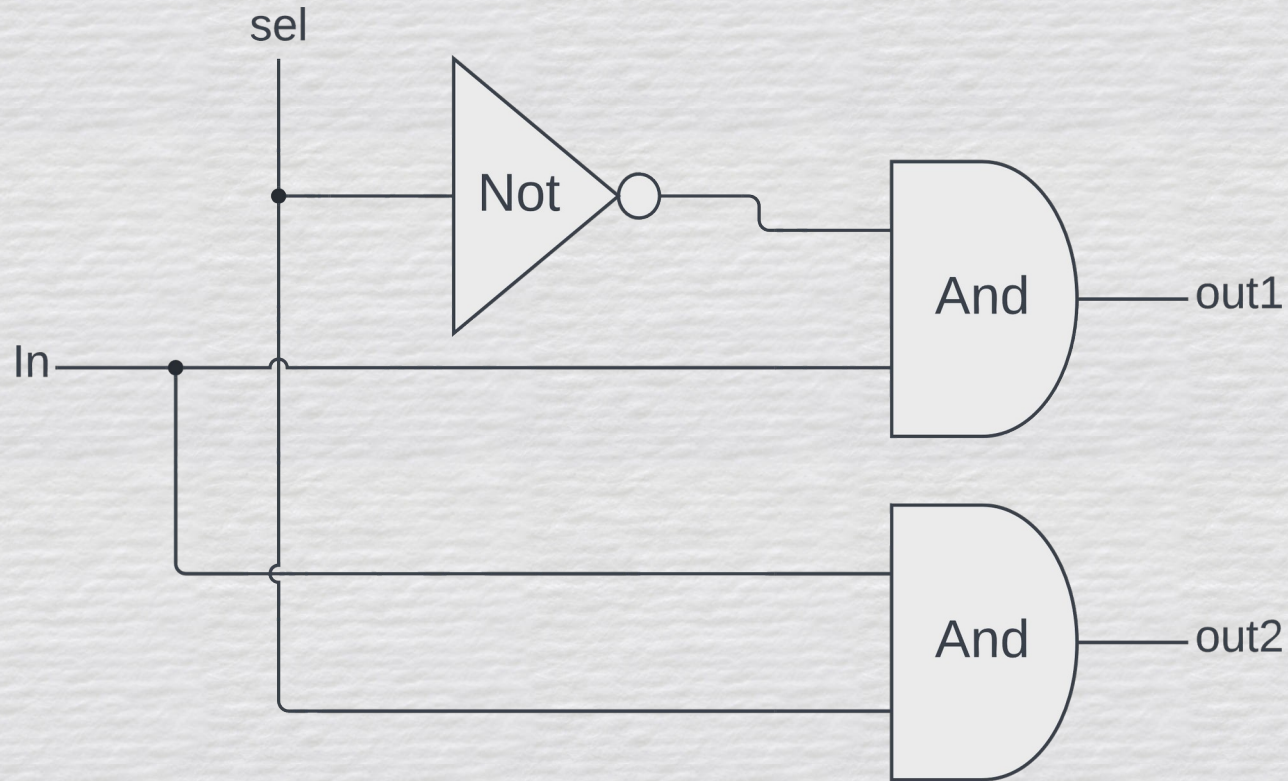
Composite Gate – ?



Composite Gate – Mux



Composite Gate – ?



Composite Gate – DMux

