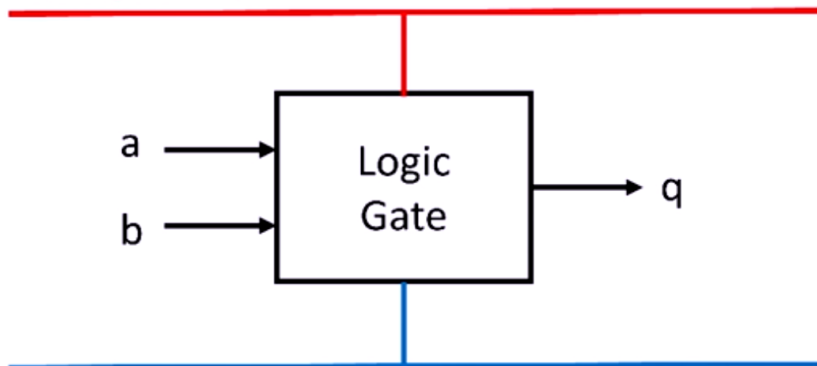


## Logic Gates

- smallest functional unit
  - combination of [[Transistors]] for [[Logische Verknüpfungen]]
  - functional completeness can be achieved with NAND only
- input and outputs resembled by voltage
  - comparable to [[Funktionen]]

("Vdd", "high", "1")

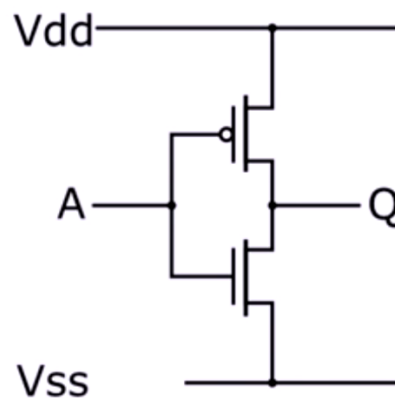


- ("GND", "Vss", "low", "0")
- design principle
  - complementary pull up and pull down networks
  - pulled either up or down

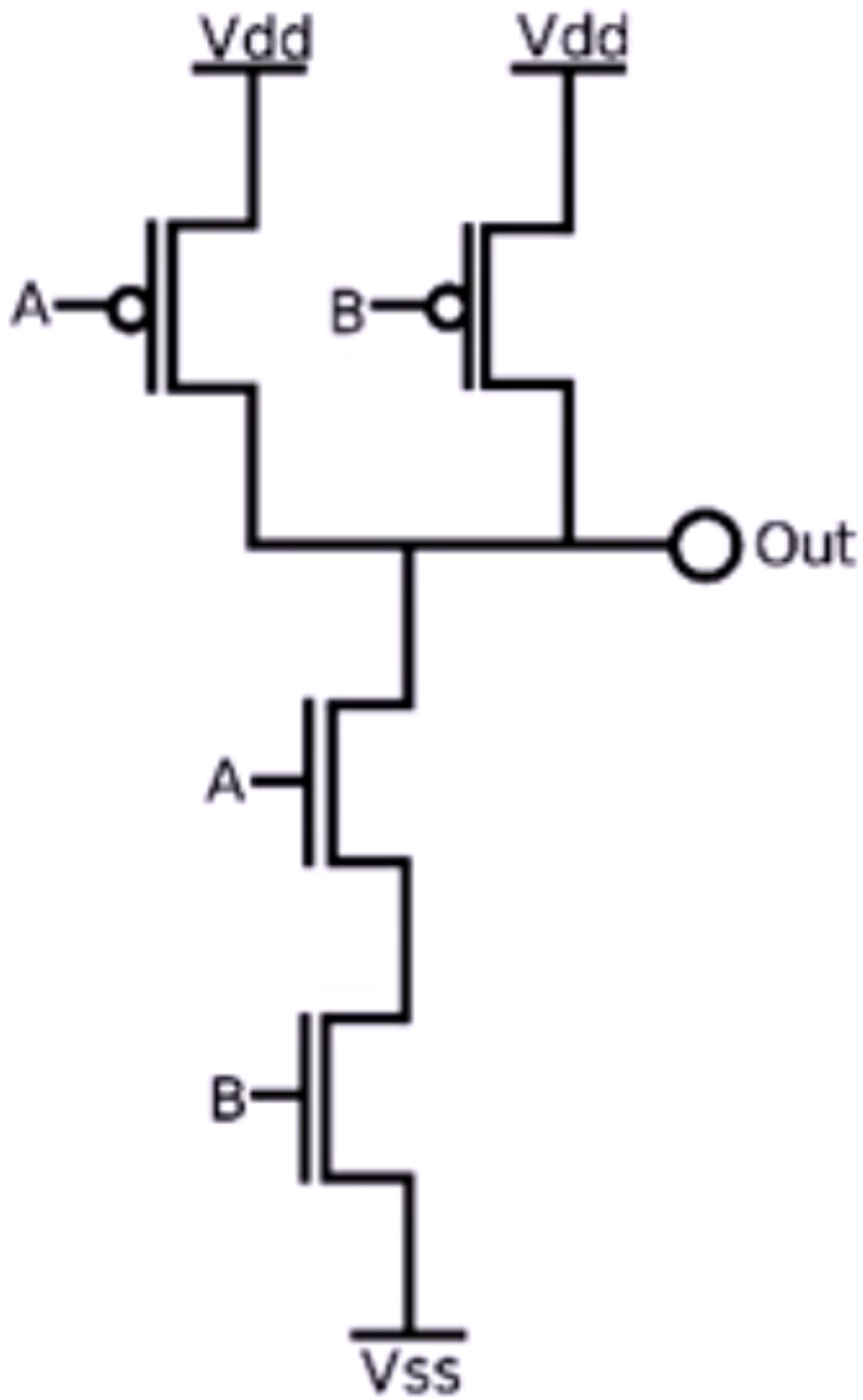
## Common functions

- CMOS inverter

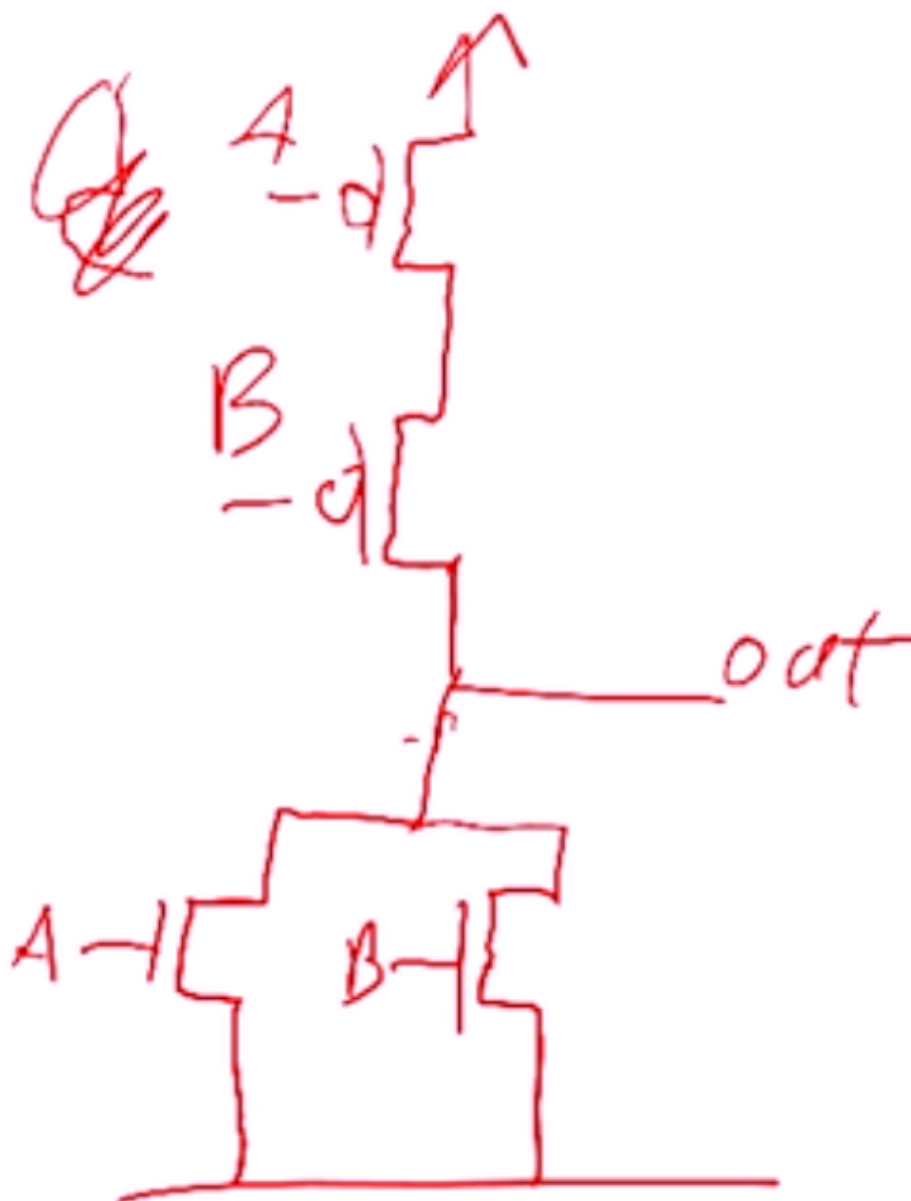
A	Q
High (1)	Low (0)
Low (0)	High (1)



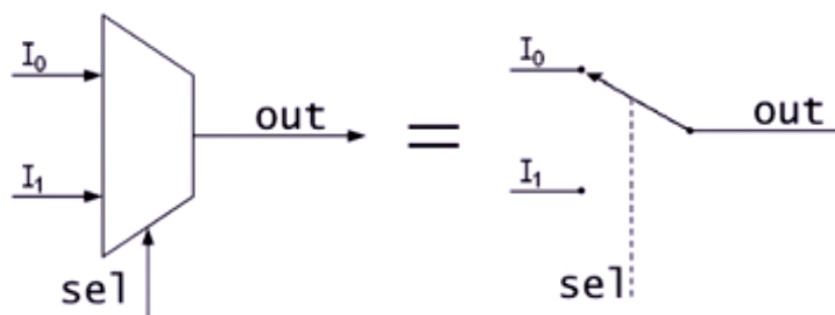
- NAND



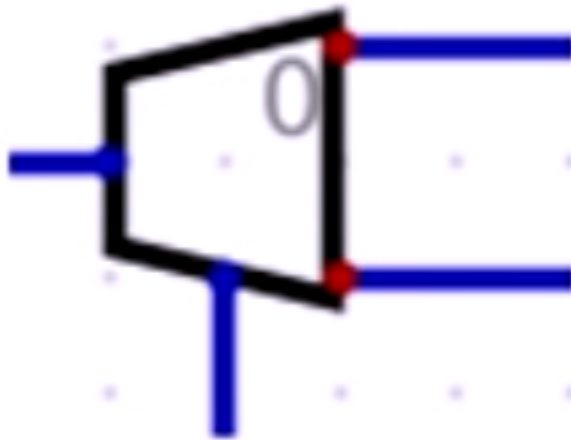
- NOR



- Multiplexer MUX

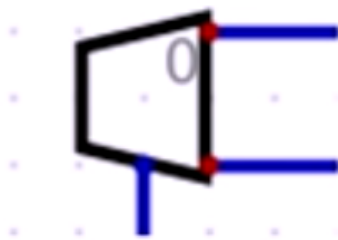


- Demultiplexer DEMUX

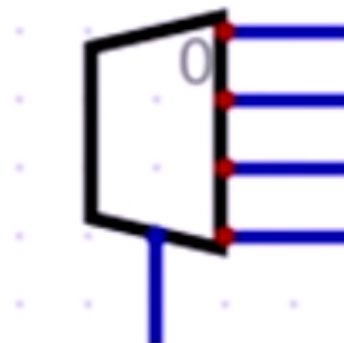


1to2 DEMUX

- Decoder



1to2 Decoder



1to4 Decoder