

# Lecture 007

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**ELECTRONIC SWITCHES** are the foundation upon which all modern computers are built. They are switches controlled electrically instead of mechanical action (e.g. a light switch requires someone to physically move the switch).

**TRANSISTORS** are electronic switches made of a semiconductor material, such as a metal oxide. (MOS stands for metal oxide semiconductor)

Transistors use a voltage at their "gate" to control electronic switches (e.g. they require a certain amount of voltage to open their gate)

N-type and P-type MOS transistors are both used to form CMOS logic gates. To create a NOT gate, we can simply use both an n-type and p-type transistor. N-Type doesn't allow 0's and P-type doesn't allow 1's. The logic symbol for a NOT gate is a horizontal line, sideways triangle, circle, horizontalline.

MAKE SURE TO CHECK WHAT THE SYMBOLS ARE FOR N- AND P-TYPE RESISTORS