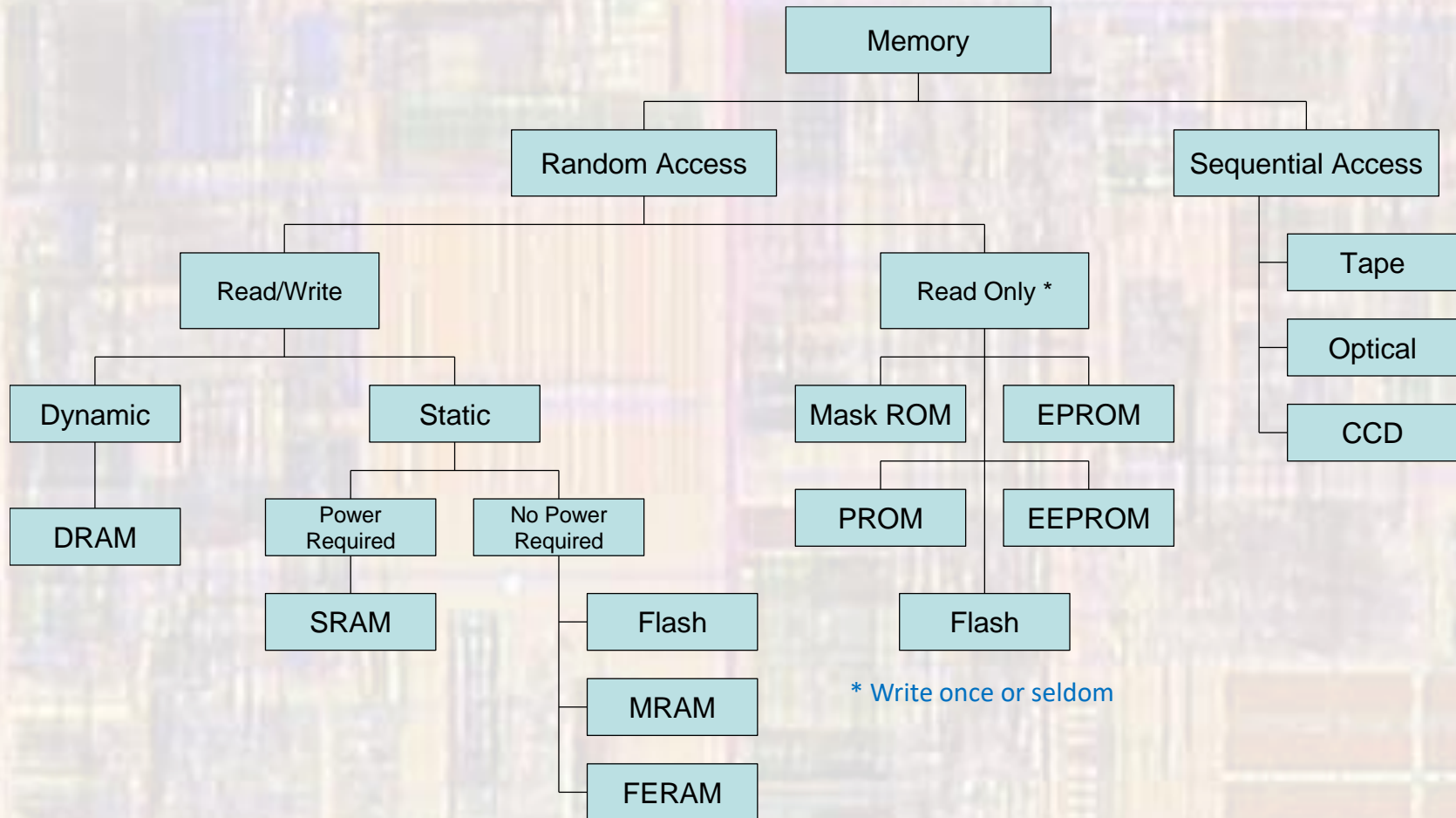


ROM

Last updated 4/28/22

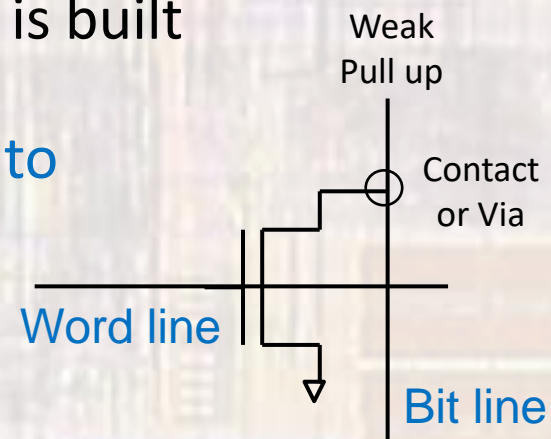
Memory - ROM

- Memory Taxonomy



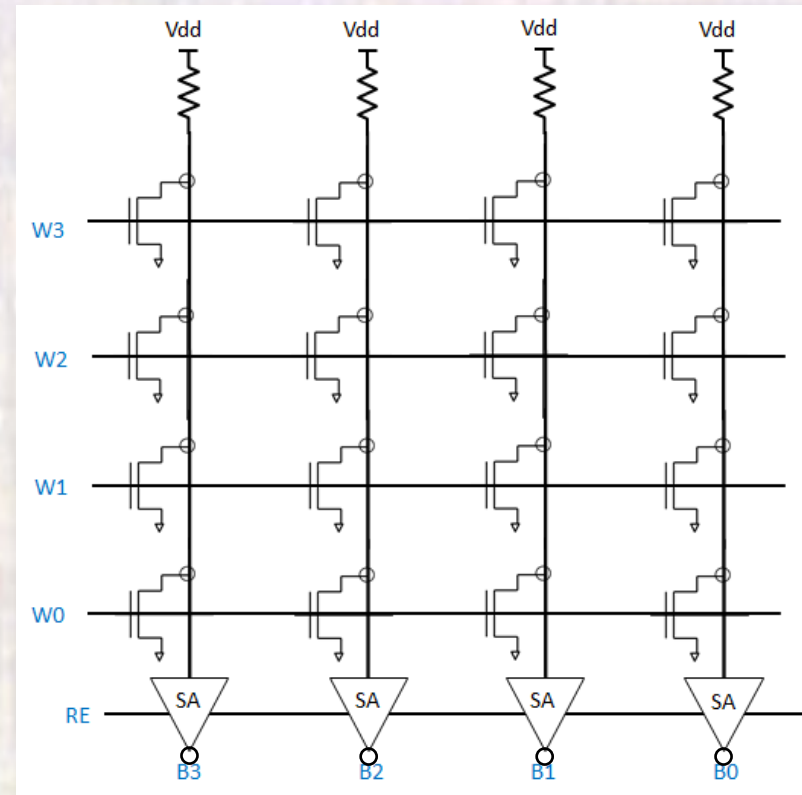
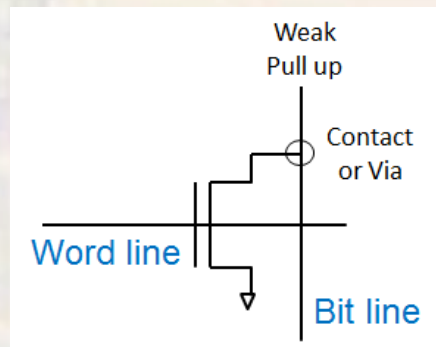
Memory - ROM

- ROM – Read Only Memory
 - Memory cell (1 bit) is based on whether a MOSFET is or is not connected between the bit line and word line
 - The MOSFET structure is always part of the bit cell
 - It can be connected to the bit line through a contact or via (via ROM)
 - It can be disabled by removing the S/D diffusion (diffusion ROM)
 - Cannot be modified once the part is built
 - Typically used as Boot memory or to hold chip configuration data



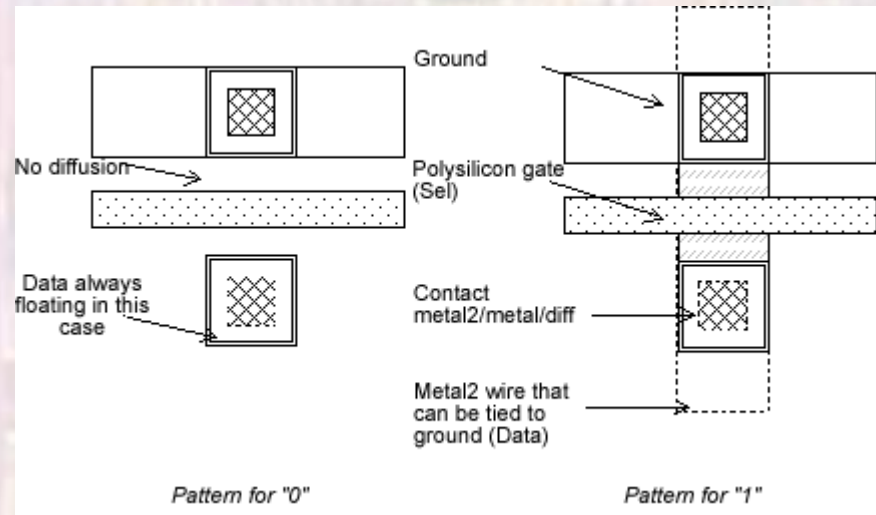
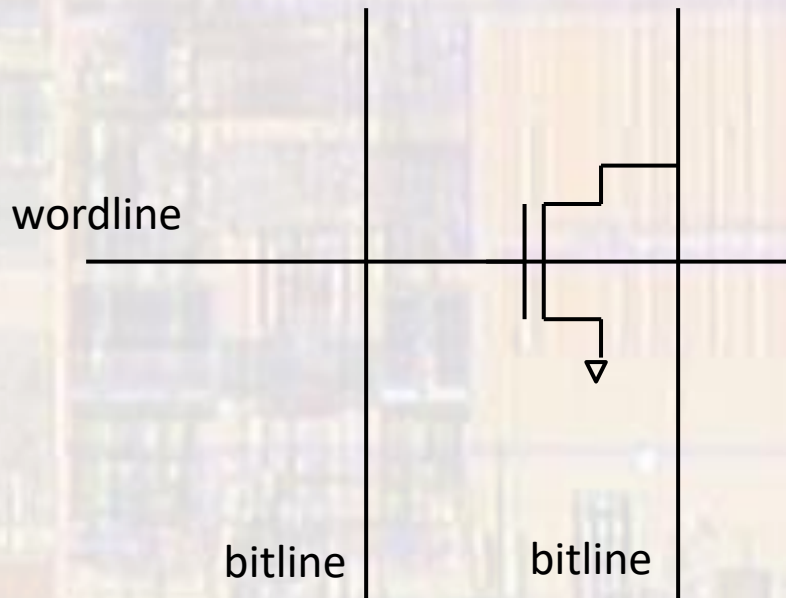
Memory - ROM

- ROM – Read Only Memory
 - Read
 - All Word lines low
 - Read Enable (RE) high
 - Strobe the desired word line high
 - Sense amplifiers read the value of the bit lines
 - If connected – will read a “0”
 - If not connected – will read a “1”



Memory - ROM

- ROM – Read Only Memory – Diffusion ROM



Memory - ROM

- ROM – Read Only Memory – Via (contact) ROM

