

Virtual address →



→ Physical address

→ Permissions

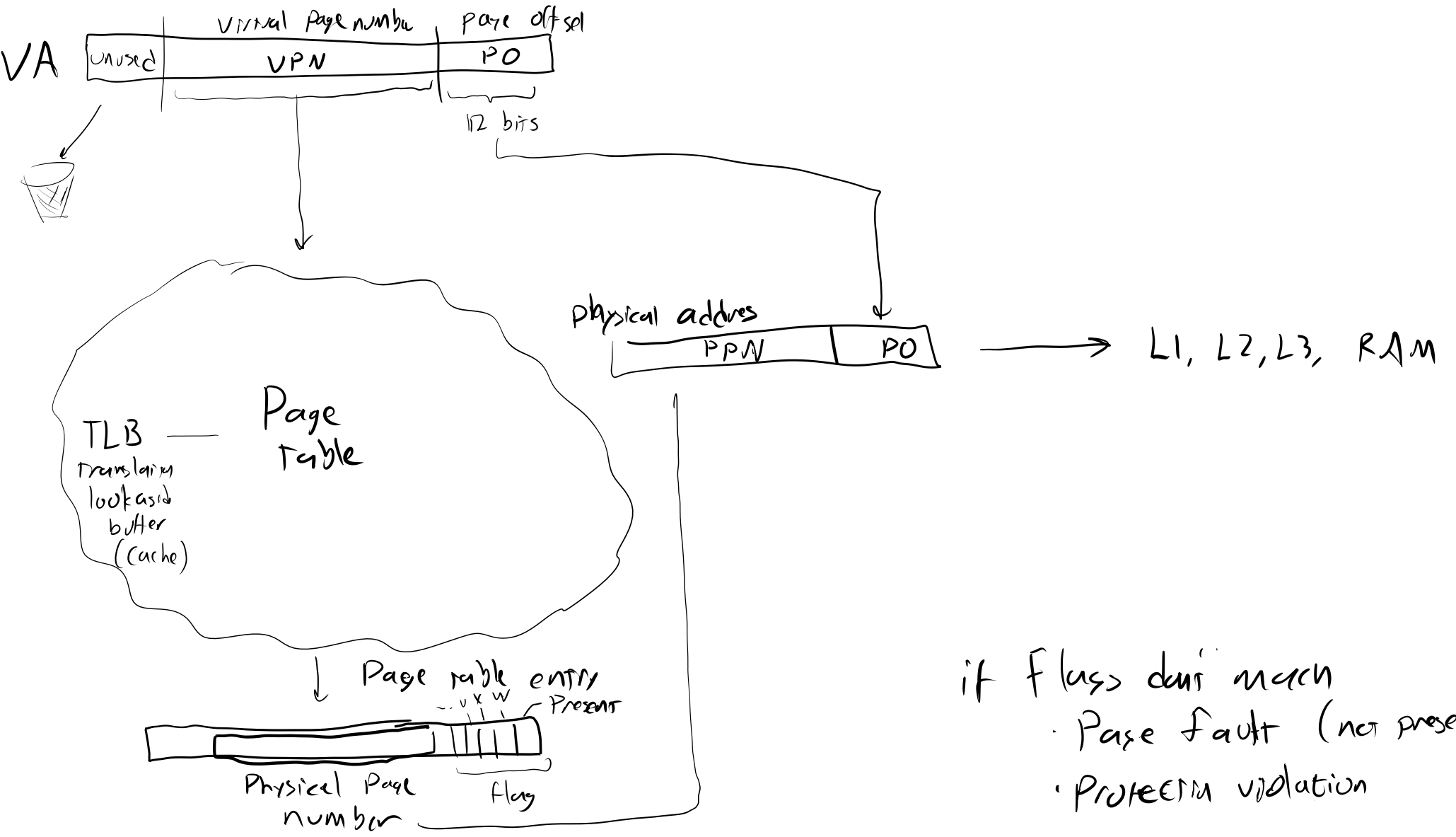
- User/kernel

- executable

- writable

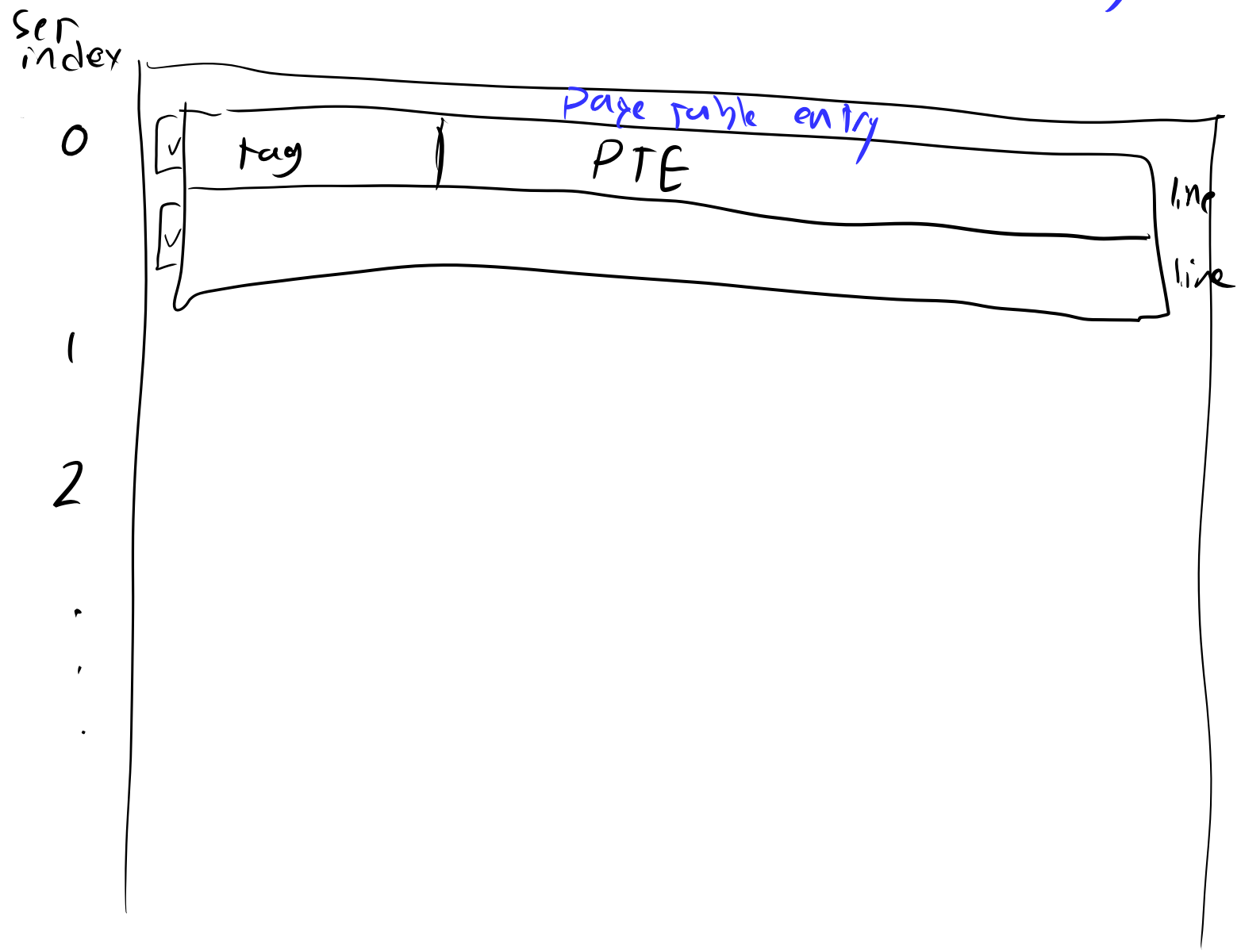
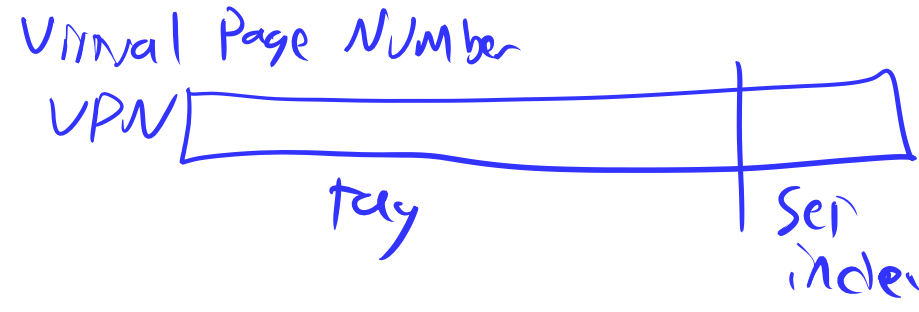
- present

jmp addr →
 mov %r10, addr →
 all →



- if flags don't match
- Page fault (not present)
 - Protection violation

translation Lookaside Buffer
TLB



Intel/AMD

64-bit address

48 used

4KIB pages

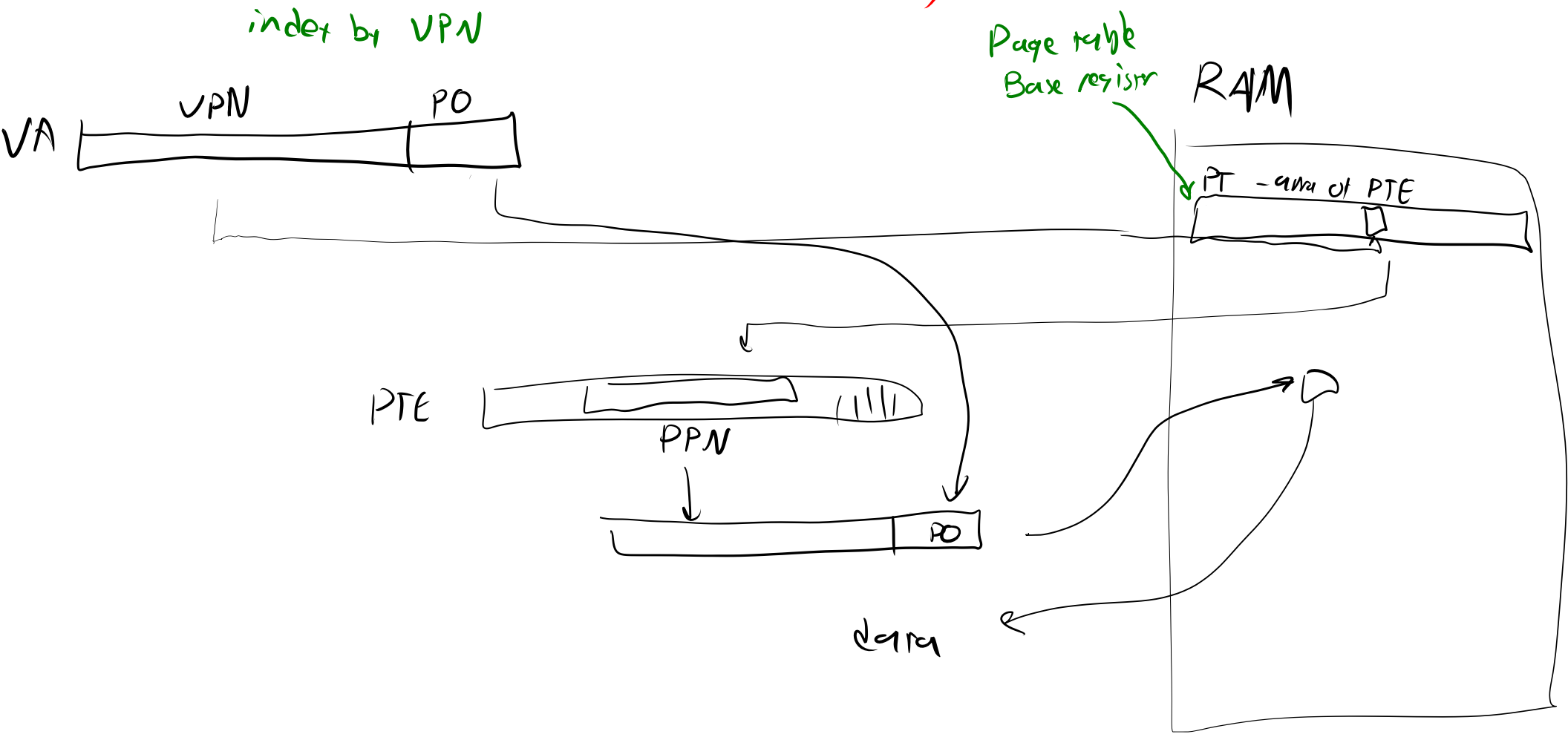
36 bits of VPN

2^{36} VPNs

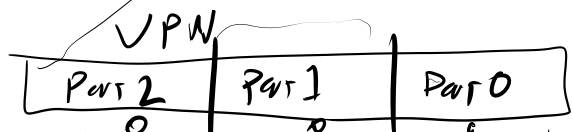
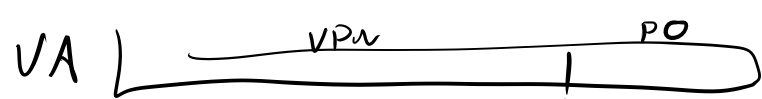
64 GVPN

Single-level page table (only good for small address.)

= an array of PTEs (stored in RAM)
index by VPN

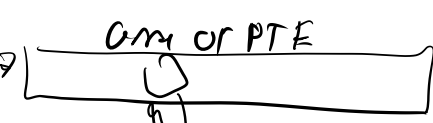
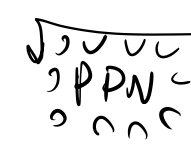


Multi-level Page table



PTBR

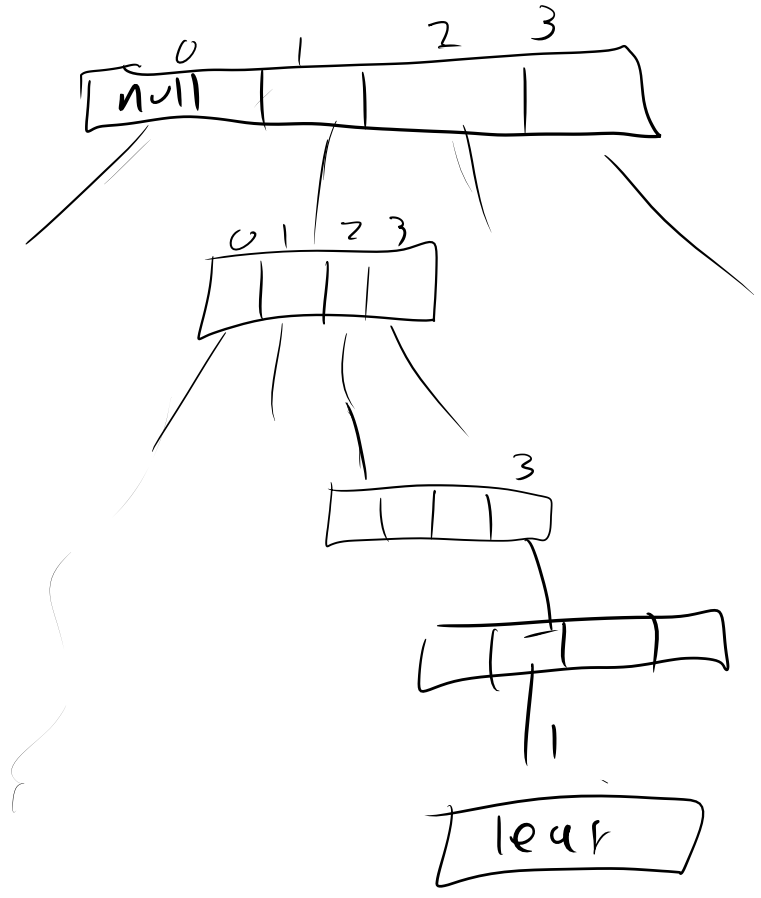
RAM



data

A long horizontal arrow pointing to the right, labeled 'data', representing the data bus.

children []



array of 256 things

