Relocation using Base-and-Limit registers

Each process has an address space starting at 0.

- Logical address < Limit register
  - Yes
  - Physical address
  - Memory
- Logical address ≥ Limit register
  - No
  - Trap: addressing error

Limit register loaded by the OS on a context switch.

Physical address for a process are contiguous.
Segment addressing

- Each process may have multiple base/limit registers
- Segment can be shared between processes

- Might be per-process or global

CPU \( \rightarrow \text{segment table} \) \( \rightarrow \) Memory

- Trap: addressing error

\( s \), \( d \)

- limit
- base

Physical address

\(<\)  \(\rightarrow\) yes

\(\rightarrow\) no

Saturday, December 22, 2018  11:54 AM
Two-level page table

Logical address:

(this is from a 32-bit x86 processor)
Hashed page table

Saturday, December 22, 2018  11:57 AM

[Diagram of hashed page table]

Alternative to a tree index!
Inverted page table

CPU → logical address → page table

page table

search → i → id

physical address

Physical memory

Implement with a hashed page table.