CSc 360
Operating Systems
Page Table

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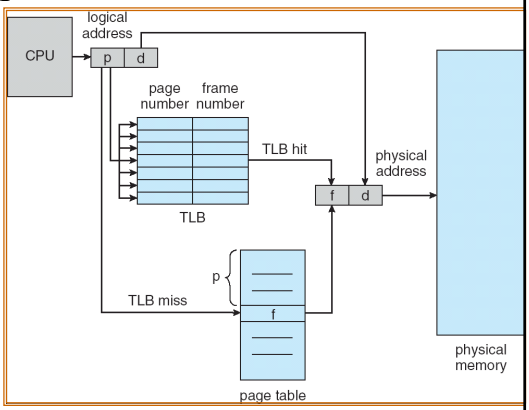
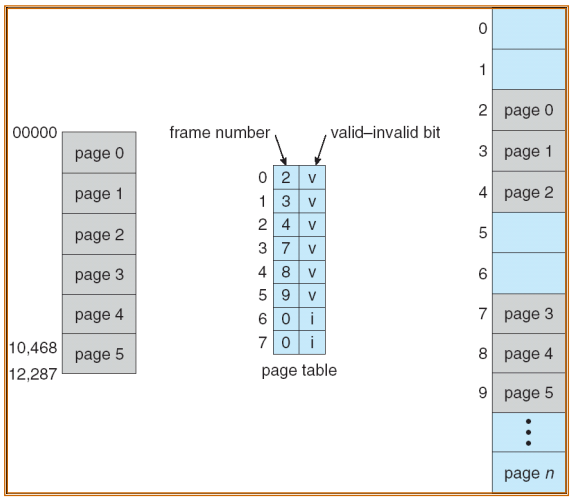
Review

- Memory allocation
  - partition
  - paging
    - page table

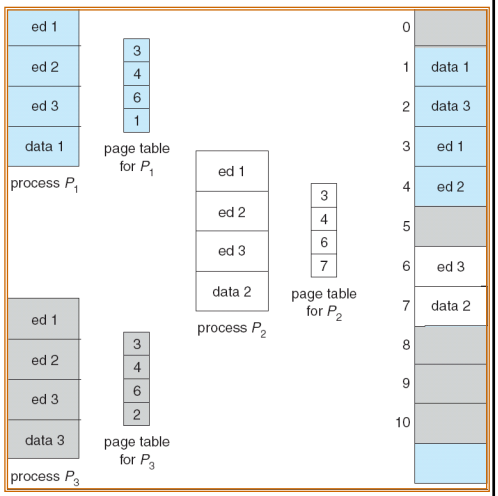


Page table: valid bit



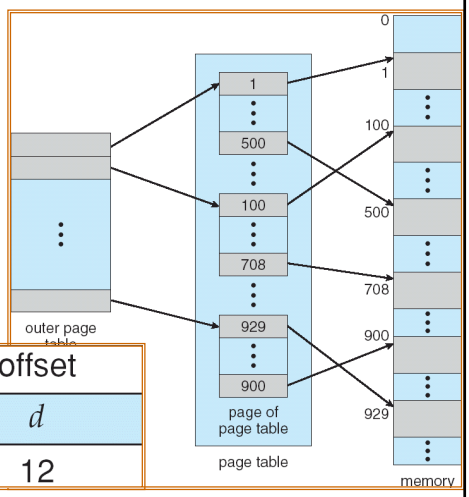
Shared pages

- Shared code
  - one read-only code
  - same address in logical space
- Private code + data
  - one copy per process



Hierarchical page table

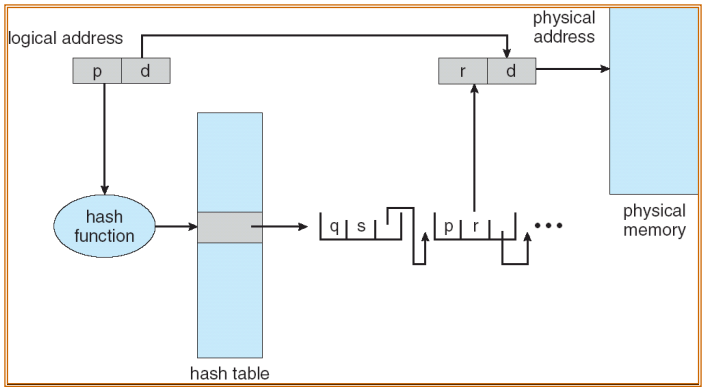
- Difficulty with a table of too many entries
  - where to keep the table
  - how to lookup efficiently
- Solution
  - e.g., 2-level table



outer page	inner page	offset
p_1	p_2	d
42	10	12

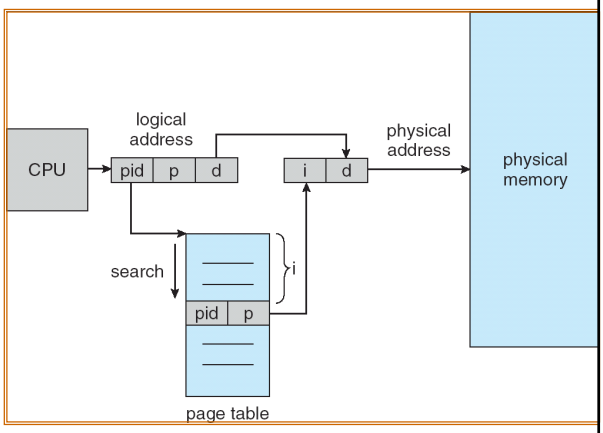
Hash page table

- Hash + linked list

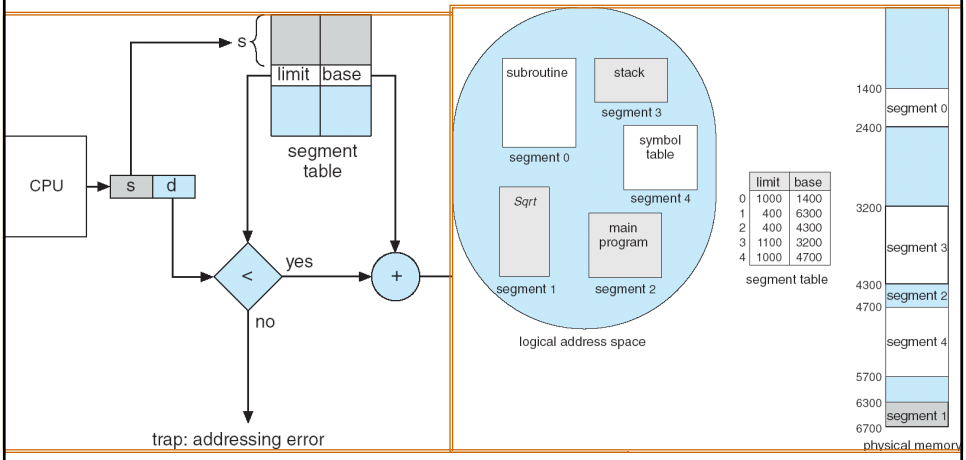


Inverted page table

- Often
  - physical space << logical space
- Tradeoff
  - time
  - space



Segmentation



This lecture

- Page table
  - protection
  - shared pages
  - hierarchical, hash, inverted
- Segmentation
- Explore further
  - Intel Pentium (OSC7Ch8.7)

Next lecture

- Virtual memory
  - read OSC7Ch9