VM Exercise

Virtual PageNumber
Physical PageNumber

PPN = 16 bit = 2byte
VPN = 19bit
page offset = 13

➤ A computer has 512MB main memory. Assumed that the address used by the processor is 32-bit wide. Assumed that the page size is 8KB and the time to access main memory is 100ns/word, the time to access disk is 1000ns/word

- How wide is the VPN, PPN, Page offset
- How large is the Page table (number of entry, the size of table) if it uses barely enough bytes to store address
- How long does it take to access 1 word?
  - ✓ If the word is in memory
  - ✓ If the word is not in memory

Entry=524288
size=2MB

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VM Exercise

➤ Assumed that a TLB is used, TLB access time is 10ns

- How long does it take to access 1 word
  - ✓ TLB hit
  - ✓ TLB miss/ page table hit
  - ✓ TLB miss/ page table miss

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