Abdurrahman Bulut 150104 2258 CSE 331 - 503 Final Examination Fall

I hereby pledge that I will strictly adhere to academic integrity codes and the work done on this examination is solely my own and I will not receive/give any help from/to anybody or source during this examination.

Q4)

32 bit - Physical address / size of VM = 2GB

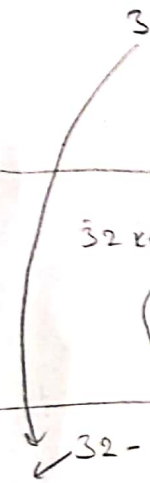
A page → 32 KB

A page table → physical page number + 16 bits information

32 KB → $2^5 \times 2^{10} = 2^{15}$ = 15 is page offset

2GB Memory → 2^{31}

a) bits in VM



b)

32 KB → 2^{15} = 15 is page offset

15 x 16 bits = 240 bits information

c)

32 - 15 = 17

Virtual address number

number of entities = 2^{17}

// Virtual Memory bit sayisini bilmediğim için 32-bits alip işleme koydum.

d) size of page table

= Number of entries x bytes/entry

virtual page number = 32 - 15 = 17

Number of entities = number of pages = 2^{17}

$2^{17} \times \frac{2}{\text{byte}/16\text{bit}} = 2^{18} = 0{,}25$ Mbytes

e) TLB

TLB is used to transform virtual address to physical address: it is a cache fast Memory.