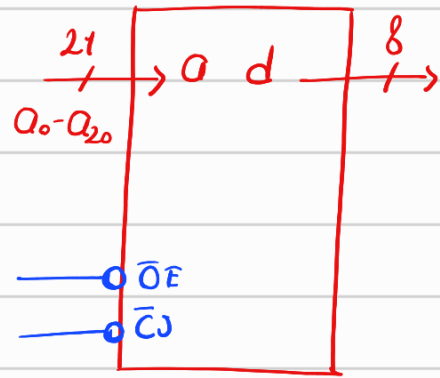
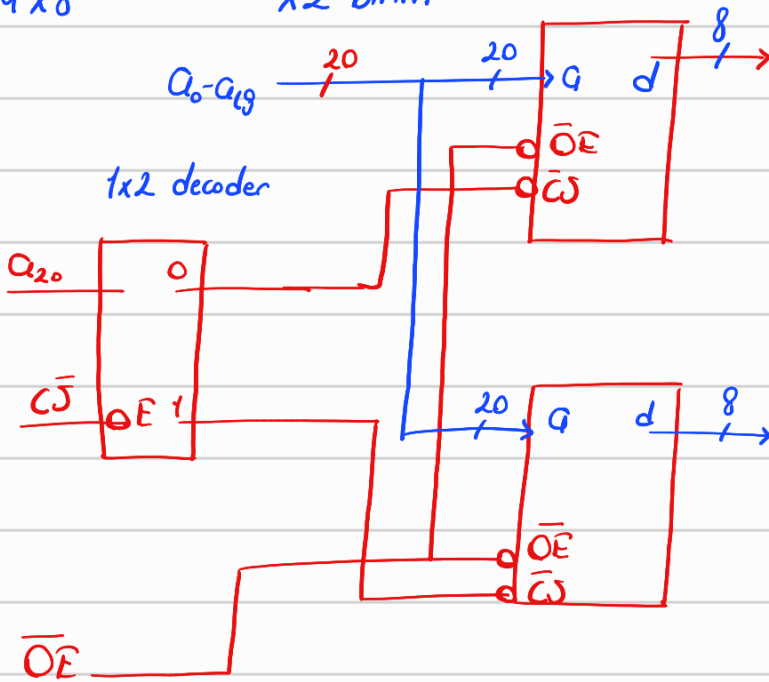


2M x 8'lik bir hafıza arayüzü oluşturma



$\frac{2M \times 8}{1M \times 8} \Rightarrow$  Kapasite genişletmede x2 birim



Hafıza kapasitesi ve veri yolu genişletme

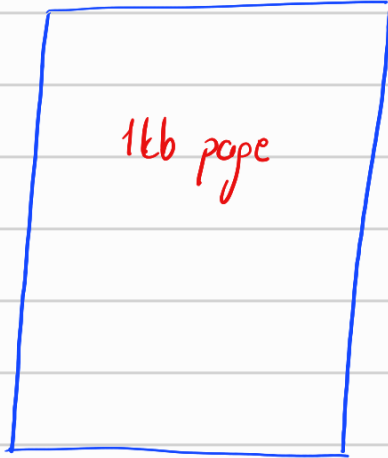
Pape tablosu cache'i TLB (translation lookaside buffer)

PA tablosu (page table)

PA  $\rightarrow$  tag, index,  $V_0, b_0$  (and delete)  
TLB  $\rightarrow$  VPN  $\rightarrow$  tag, index

## Virtual Memory (sanal bellek)

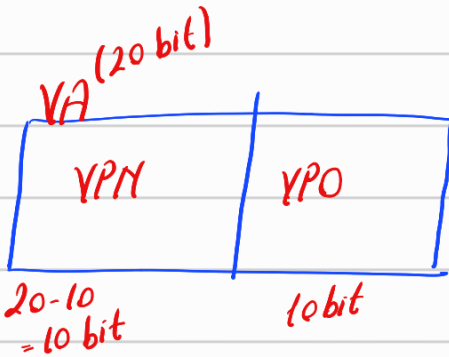
20 bit virtual adres uzayı



VPO: virtual page offset (10 bit)

VPN: virtual page number

$$1k = 2^{10} = 1024$$



## Main Memory (PA: physical address)

16 bit



PPO: physical page offset

PPN: physical page number

$$f(VPN) = PPN$$

$$2^{10} \times 2^3 = 2^{13} = 8k$$

VA  $\rightarrow$  PA  
20 bit  $\rightarrow$  16 bit

