

# Quiz

Wednesday, April 23, 2025 12:21 PM

VM uses 16 BIT

$$2^{16}$$

$$\text{Page size } 2^9 = 512 \text{ bytes}$$

$$\text{offset} = 9 \text{ bit}$$

$$\text{VPN} = 16 - 9 = 7 \text{ bit}$$

$$\begin{array}{c} 2^7 \times 2^2 = \\ \uparrow \\ \text{VPN} \quad 4 \text{ B} \\ \text{Table entry} \end{array} \quad \boxed{2^9 = 512 \text{ B}} \\ \text{Total PT size}$$

VPN	OFFSET
00000 10000	10 1110

$$\text{Physical } 2^3 \times 2^9 = 2^{12} = 4 \text{ KB}$$

$$0000010 = 2$$

$$2 = 110$$

$$\text{Present bit} = 1$$

PFN    OFFSET

110 | 000101110 IN PHYSICAL MEM

$$\text{PT1} = 2^4 = 4 \text{ bit} = 16 \text{ entries} \times 4 \text{ B}$$

$$\text{PT2} = 2^3 = 3 \text{ bit} = 8 \text{ entries} \times 3 = 24 \times 4 \text{ B}$$

$$(2^4 + 2^3 \times 3) 4 \text{ B} = 16 + 8 \times 3 = 16 + 24 = 40 \times 4 = 160 \text{ B}$$