

Effective Access Time

Ex. 1
Assume: 80% hit ratio

20ns search in associative registers

100ns access to memory

⇒ Effective Access time =

$$0.8 * (100 + 20) + 0.2 (2 * 100 + 20)$$

$$= 140 \text{ ns}$$

⇒ 40% slowdown in memory access time (from 100 ns to 140 ns)

Ex. 2 98% hit ratio

⇒ Ef. Acc. Time =

$$= 0.98 * (120) + 0.02 (220) =$$

$$122 \text{ ns}$$

⇒ 22% slowdown