

CE450
OS/14

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homework: hand written

Book: only read 4 chapters (exam from book)

WSC: warehouse scale computer

SRAM: word for cache.

DRAM: word for main memory.

$$\textcircled{1} \text{ Performance} = \frac{1}{T_{\text{ins}} \times \text{CPI} \times \text{Cycle time}}$$

(i) instructions count

(ii) CPI (Cycles per instruction)

cycle: ↑ how fast the computer: 1MHz, 1kHz...

$$4 \text{ GHz} = 4 \times 10^9 \text{ cycles/sec} \leftarrow \text{hertz}$$

(iii) Cycle time (inverse of frequency).

$$\textcircled{2} \text{ Load} \times \text{Voltage}^2 \times \text{frequency}$$

← capacity

③ Amdah's Law

$$70 = \frac{60}{x} + 40$$

$$30 = \frac{60}{x}$$

$$x = 2$$

Current 100s → Want to become 70s.