

In The Name of God

Computer Architecture Homework 1

Parham Alvani

February 18, 2015

powered by L^AT_EX

Contents

1 Problem 3	2
-------------	---

1 Problem 3

The following is the avrage memory access time equlation for memory with 3 level:

$$\bar{T} = h_1 * t_1 + (1 - h_1) * h_2 * (t_1 + t_2) + (1 - h_1) * (1 - h_2) * h_3 * (t_1 + t_2 + t_3) \quad (1)$$

Substituting $1ns$ for t_1 , 0.1 for h_1 , $10ns$ for t_2 , 0.5 for h_2 , $1000ns$ for t_3 and 0.4 for h_3 in (1) gives us:

$$\bar{T} = 0.1 * 1 + (1 - 0.1) * 0.5 * (1 + 10) + (1 - 0.1) * (1 - 0.5) * 0.4 * (1 + 10 + 1000) \quad (2)$$

$$= 0.1 + 0.9 * 0.5 * 11 + 0.9 * 0.5 * 0.4 * 1011 \quad (3)$$

$$= 0.10 + 0.45 * 11 + 0.18 * 1011 \quad (4)$$

$$= 0.10 + 4.95 + 181.98 \quad (5)$$

$$= 187.03ns \quad (6)$$