

UNIVERSITY OF ASIA PACIFIC

Department of Computer Science & Engineering

Assignment on Division Algorithm

Course Code : CSE 317

Course Title: Computer Architecture

Submitted by: Submitted To:

Name : Sheikh Nafez Sadnan Shammi Akhtar

Reg. No.: 20101106 Assistant Professor

Roll No.: 106 Department of CSE

Section: B University of Asia Pacific

Division Algorithm 3nd version

20101106

Division algorithm and version properties?

- 1) No extra separate quotient register.
- Divison register & ALU is 32-bit with & Remainder register is 64 bit wide.
- (iii) The remainder register is shifted left before the subtraction.

The algorithm is given below:

Start 1. Shift the remainder negister left 16th 2. Subtract the Divisor register from the left half of the reminder register and place the result in the left half of the new inder negister. RemaindaLO Remailda 20 Test Temainder 3b. Restone the original value by adding the division negistan to the helf half of the the sum in the left half of the negroided negrote and the negroted negrote at 5 shift the semainde negrote at 5 he half of the negrote at 5 he half of the negrote at 5 he half of the new shift has been an active most but to sa. shift the Remainder register to the left, setting the new rishmost bit to A 82rd repetition? No: 32 repetetion 405: 32 responsion

one, shift left has of serving right 2 bit

Example of version 3

MY UAPID = 20101106 (even ID Number)

So, Divison = (3) 10 = (0021)2 Divident = (9) 10 = (1001)2

The state of the s			-	
Item tion	steps	Divisor	Remainder	
O	Initialization 1. Ibit Ls of R	0011	0000	1001
1	2. LHR= LHR-Divison 3b. LHR=LHR+Divison LS of the Rand set RMB to 0		1110 0001 0010	0 0 1 0 0 0 1 0 0 1 0 0
2	2. LHR= LHR- Divisor 3b. LHR=LHR+ Divisor Is of the R and set RMB+00		1111 0010 0100	0100
3	2. LHR= LHR-Divisor Za. Loofthe Rand Set RMB101		0001	1000
4	2. LHR=LHR-Divison 3a. Lsofthe Rand sch RMB+01		0000	0001

After the 4th itoration, the left half of the remainder is

We get the Remainder = (0000) = (0) 10

guotient = (0011) 2 = (3)10

Ans,