

UNIVERSITY OF ASIA PACIFIC

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(CSE)

Course Title: Computer Architecture

Course Code: CSE 303

Submitted By,

Submitted To,

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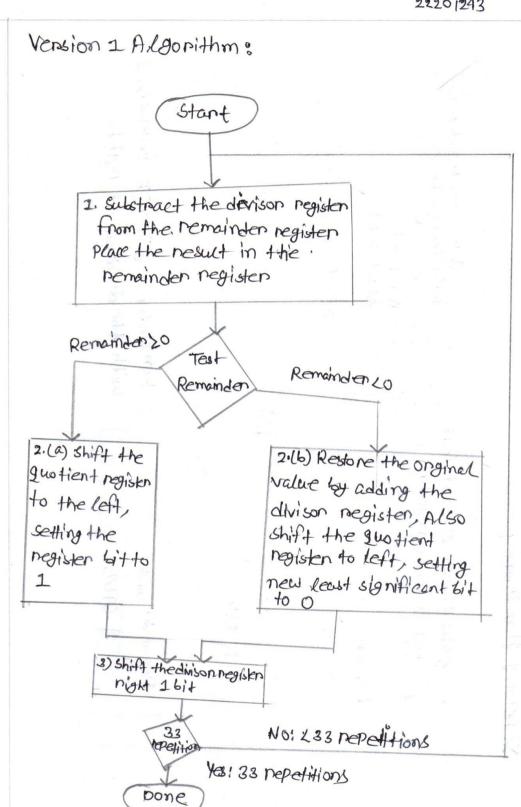
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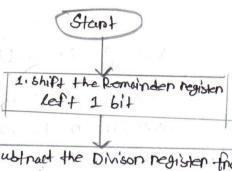
Remainder register is initialized with the dividend at right Quotient registen 15 hittalized to be 0 Quotient shift left 326145 control 326+ divisor stansat left half of divisor register. Version 1 Handware: Remainder write GA ST FLEW Divisor

Version 1 Example:

7:27 0010

Heration	Steps	Quotient (Q)	Divisor (D)	Remainder (R)
0	just.	0000	0000000	0000 0111
	1, R=R-0; ·	0000	0 010 00 00	1110 0111
1	2.160 RZR+D	00 00	0 0 1 0 0 0 0 0	0000 0111
		0000	9 00T 0000	0000 0111
	1, R= R-D 2, RLO	0000	0001.0000	1111 1111
2	26, R=R+D Q+= 15,00 =0	0000	0 0 0 1 0 0 0 0	0000 0111
	3. 03 RS	0000	0000 1000	0000 0111
	1. R= 12-0, 2. PLO	0000	0000 1000	1111 1111
3	26. R ZR+D .Q +3 15/00=0	0000	00001 000	0 000 0111
	3.03.RS	0000	0000 0100	0000 0111
	7. R= R-D. 2. RX	0000	00000100	11000000
4	2a 2 to bit and set \$56 to 1	0001	00000100	00000011
	3, D 1 bit	9001	0000 0010	00000011
5	1. R = R-D 2. RX	0 0 0 01	00000010	1000 0000
	2a. Labit and se	0011	00000010	0000000
	3, 8 1 61+	0011	0000 0000	0 000 0001
		43		1

vonsion 2 Afgorithm:



2. Subtract the Divisor register from the left half of the Remainder register and Place the result in the left half of the Remainder register

Remainder>0

Test Remainder Remainden Lo

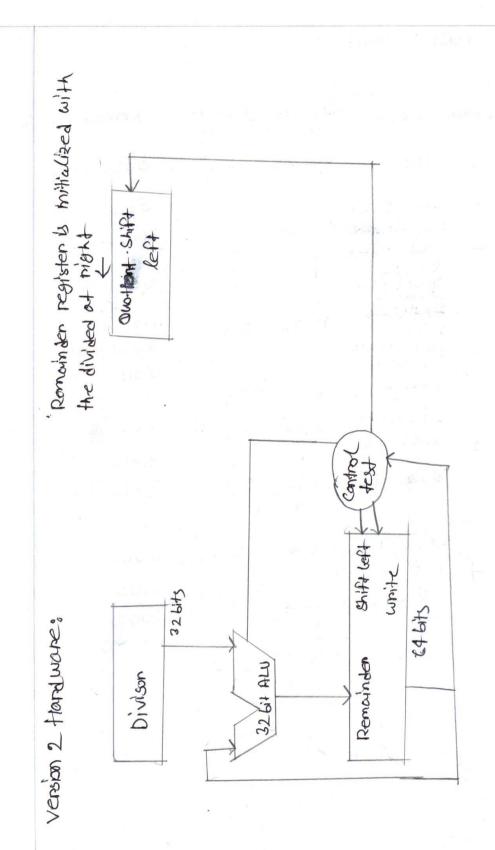
310 Shift the Remainder Meglister to left setting the new might most bit or Also shift the Quotient to left setting new night most 614 to 1

adding the divisor register to
the left half of the Remainder
register and Place the sum in
the left half of Remainder
register to left, setting new right
most bit 0. Also shift quatters to
left setting to new right most bit to 0

No: 232 repetitions

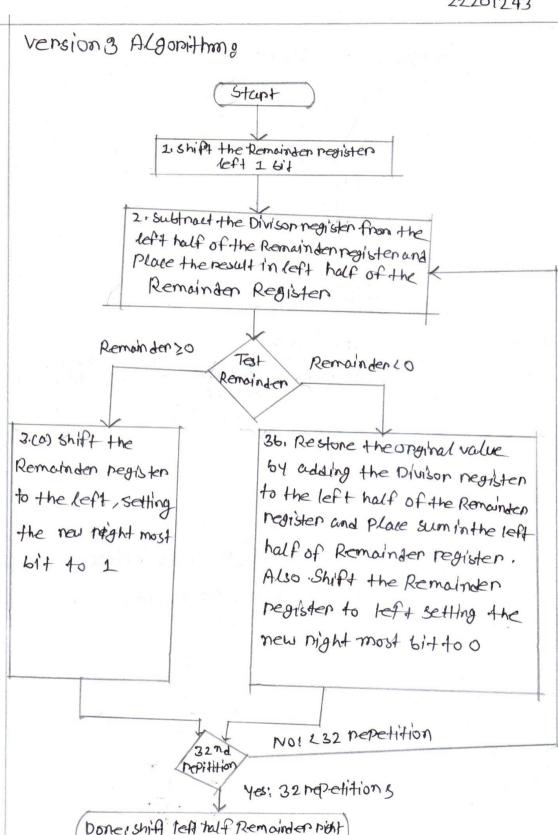
32 POPI HIHOD

Done shift left half of Remaining might 1 bit

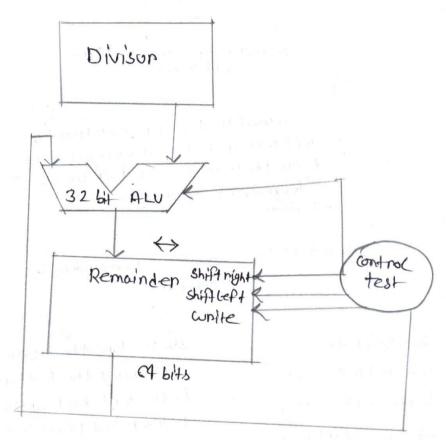


Version 2 Example:

Iteration	Steps	Quotient	Divisor	Remainden R
0	init	0000	0010	0000 0116
1	1. Shift R 1 617 2.6 R (1) = R (1) - P 3 (6) R (1) = R (1) + P 12 Set 15 B 0 10 16 17 Set 156 13 14 most 0	0000	0010	0001 000 0
2	2-PU)=PU)-D 3, RLO 3(b) PU)=PU)+D R+LS/Ro=O Q+LS/Oo=O	00 00	0010	1111 1000 0001 1000 0011 0000
Ż	2.P(1)=P(1)-D 3(1) 12.50+ LSB	0000	0010	0 001 0 000
Appendix and a second a second and a second	6 iQo = 1	0001	0 0 10	0010 0000
	2.R(L) = R(L)-D 3(0) R/R0-20	0001	0010	0000 0000
•	6/2021	0 011		0000 0000



Versions Handware:



Remainder register is initialized with the dividend at right

Version 3 Example:

7011 0010

Herution	Steps	Divisor, D	Remainden, R
D	ini+	0100	0000 0111
1	1.5hip 1261- 2. RU = RLD-D 3. RCO, 36 RCD = RCD+D R14, Ro =0	0010	0000 1110
2	2.R(L) =R(L)-D, 3.R(D) 3b.R(L)=R(L)+D R(16, Ro=0	0010	0001 1100
3	2. R(L)=R(L)-D 3a. 1216, Ro=1	0010	0001 1000
4	2. P(L) = P(L) - D 3 a. [2 L S, Roz]	000	000 0001
	Done: R(L) -> RS	0010	0001 0011