**19CSE303 – EMBEDDED SYSTEMS**

**Lab Eval 2 – 13.09.2021**

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1. **Write an ALP using ISA of ARM7 TDMI to add two 64 bit numbers and show the result in R6 ( LSB 32 bits) and R7 ( MSB 32 bits).**

**Write an ALP using ISA of ARM7 TDMI to do the following**

* A in R0, B in R1, X in R2, Y in R3 ( A, B, X, Y are unsigned 32 bit numbers)
* Find the difference of A and B store in R4 ( R4 = A - B)
* Find the difference of Y and X store in R5 ( R5 = Y – X )
* R6 should contain the lowest of (A-B) and (X-Y)
* R7 should contain the highest of ( A-B) and (X-Y)

**Implement the following conditions:**

* If (A-B) = ( X-Y) => R8 = R0 (XOR) R1
* If (A-B) > ( X-Y) => R8 = R0 (OR) R1

**Code :**

AREA add64, CODE, READONLY

ENTRY

MAIN

LDR R0, =A

LDR R1, [R0]

LDR R2, [R0, #4]

LDR R0, =Bs

LDR R3, [R0]

LDR R4, [R0, #4]

SUB R6, R2, R4

SBC R5, R1, R3

LDR R0, =Result

STR R5, [R0]

STR R6, [R0, #4]

SWI &11

A DCD &122AE640, &2F100123

Bs DCD &001019BF, &40023F51

Result DCD 0

END





