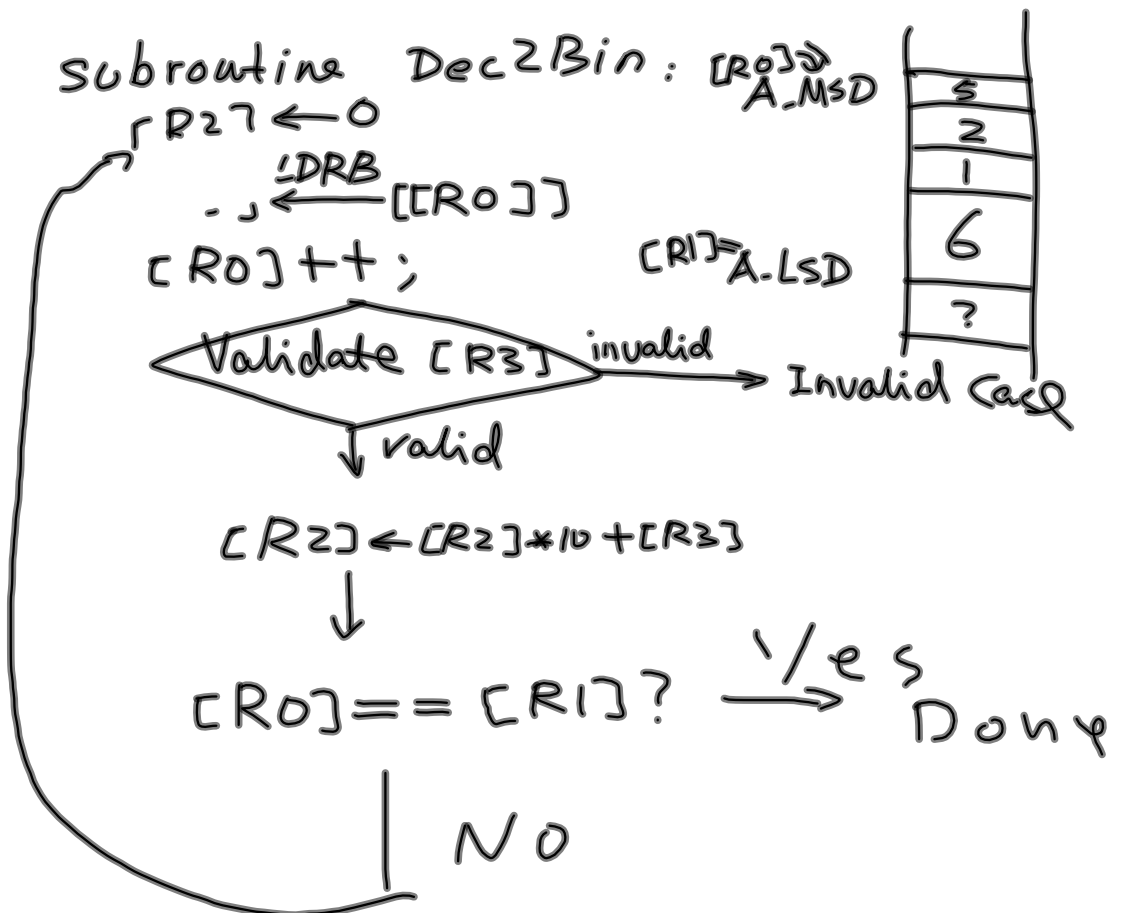


5216 [R3] total or result

 = $5 \times 1000 + 2 \times 100 + 1 \times 10 + 6 \times 1$
 = $((5 \times 10 + 2) \times 10 + 1) \times 10 + 6$

[R2]: 50 → 52 → 520 → 521 → 5210 → 5216



$$\begin{aligned}
 & [R3] * 10 ? \\
 & = [R3] * (8 + 2) \\
 & = [R3] * 8 + [R3] * 2 \\
 & = \underbrace{[R3] * 2^3}_{\substack{\uparrow \\ \text{LSL \#3}}} + \underbrace{[R3] * 2}_{\substack{\uparrow \\ \text{LSL \#1} \\ \text{ADD}}}
 \end{aligned}$$

is [R4]'s MSB zero?

$$[R4] \xrightarrow[\text{AND TST}]{\text{bit-wise}} 10 \dots 0_2$$

TST R4, #0x80000000 ← Does not work

TST R4, #2, Z ← Ok!

#1, 1 ← Does not work

Invalid case: 28-bit
 $[R2] = 0|00x \dots x_2$

LSL #3 ⇒ miss the invalid case

LSL #1 ⇒ Catch the invalid case.

[R0] = 0x80000000
 [R1] = 0x7FFFFFFF

HI: true
 GT: false

Testing:

$$a = 521 \Rightarrow \begin{matrix} 0010 & 0000 & 1001 \\ = 0x00000209 \end{matrix}$$

$$b = 17 \Rightarrow 0x00000011$$

$$-b = 0xFFFFFFFFEF$$

$$a-b = 0x000001F8$$