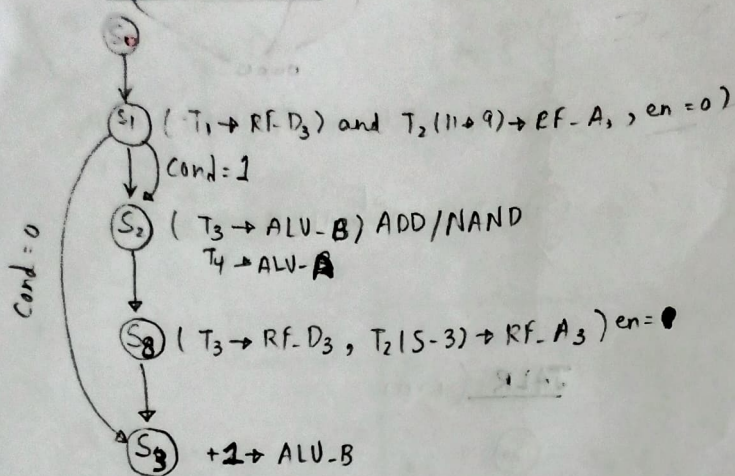


ADD/NAND/ADC/APZ/NANDZ/NANDC (0100)



SW (0101)

S₀

S₁

S₂

$T_2(5 \rightarrow 0) \xrightarrow{SE} ALU-A$
 $T_4 \rightarrow ALU-B$ } ADD

S₃

S₄

LN (0110)

S₀

S₁

$T_4 \cdot \text{len} = 0$

S₂

loop count < 7

else

S₃

+1 \rightarrow ALU-B

SM (0111)

S₀

S₁

S₂

loop count < 7

else

S₃

-1 for ALU-B

S₄

+1 for ALU-B

BEQ (1100)

S₀

S₁

(len = 0)

S₂

$T_3 \rightarrow ALU-A, T_4 \rightarrow ALU-B$, ~~ADD~~ XOR

S₃

$T_1 \rightarrow ALU-A, T_2(Z=1) \Rightarrow T_1(5 \rightarrow 0) \xrightarrow{SE} ALU-B$
else $\Rightarrow T_1 \rightarrow ALU-B$

JAL

(1000)

S₀

S₁

$T_1 \rightarrow RF-D_3$ and $T_2(11 \rightarrow 9) \rightarrow RF-A_3$
len = 1

S₂

$T_2(8 \rightarrow 0) \xrightarrow{SE} ALU-B$

JALR (1001)

S₀

S₁

$T_1 \rightarrow RF-D_3$ and $T_2(11 \rightarrow 9) \rightarrow RF-A_3$
len = 1

S₂

$T_4 \rightarrow RF-D_3$ and $T_3(11 \rightarrow 9) \rightarrow RF-A_3$
len = 1