COMP25111 Lab 1: MU0 Control Signal Chart

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1 Fetch Phase

En_IR	1	(enable write to IR)
En_PC	0	(enable write to PC)
En_ACC	0	(enable write to ACC)
byp	X	(ALU action: bypass)
add	X	(ALU action: add)
sub	X	(ALU action: subtract)
Ren	1	(RAM action: Read)
Wen	0	(RAM action: Write)
addr_Mux	1	(RAM address = PC, otherwise IR.S)

2 Execute Phase

	lda	sta	add	sub	stp	jump	no jump
En_IR	0	0	0	0	0	0	0
En_PC	0	0	0	0	0	1	0
En_ACC	1	0	1	1	0	0	0
byp	1	x	0	0	X	1	0
add	0	x	1	0	X	0	0
sub	0	x	0	1	X	0	0
Ren	1	0	1	1	0	0	0
Wen	0	1	0	0	0	0	0
addr_Mux	0	0	0	0	X	1	0

"jump" means a jmp instruction, or a jge or jne instruction where the condition is true so the jump happens.

"no jump" means a jge or jne instruction where the condition is not true so the jump does not happen.