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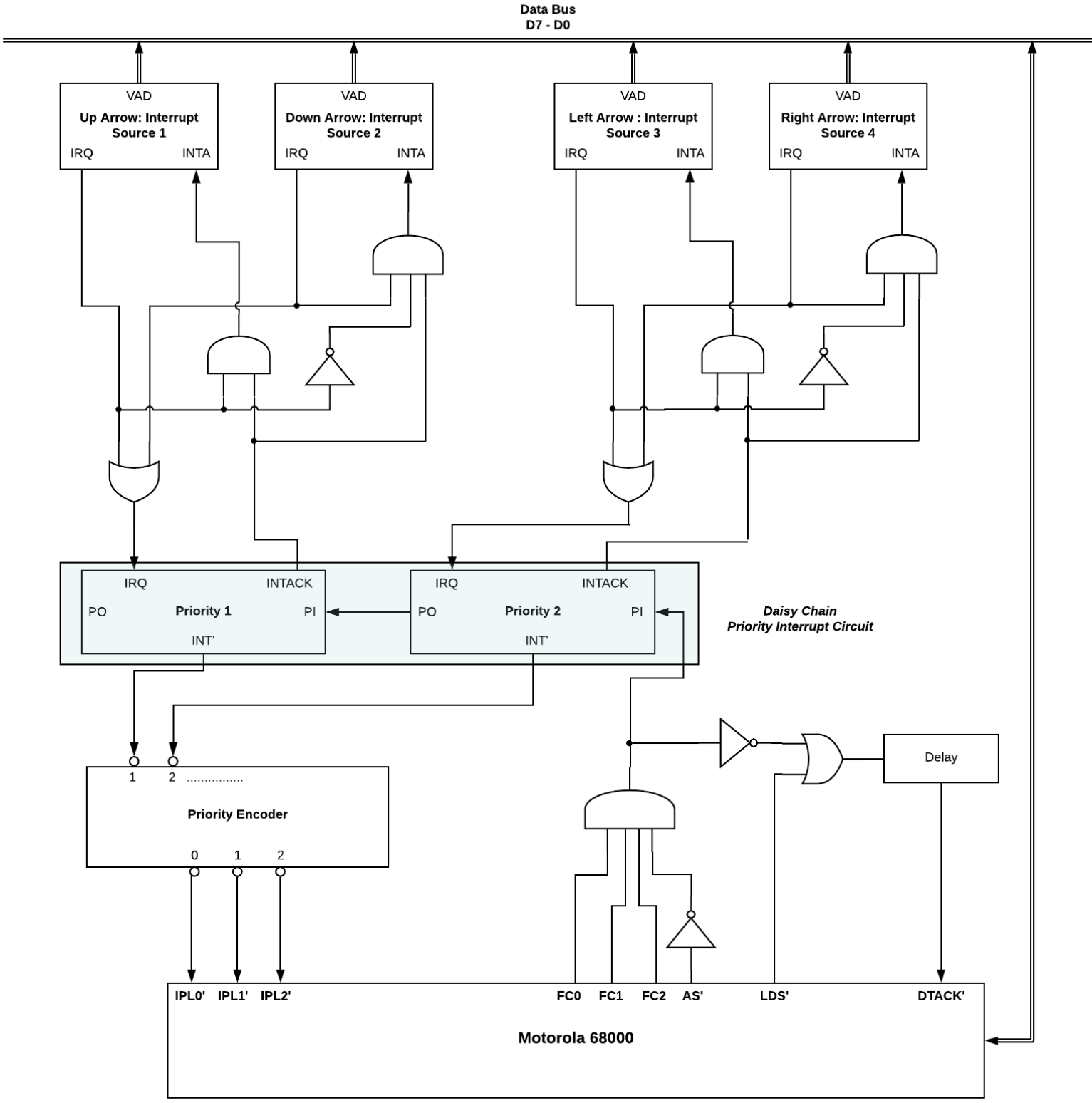
BLG 322E – Computer Architecture

Assignment 3



Left Arrow & Right Arrow Devices

INTA	LEFT_IRQ	RIGHT_IRQ	LEFT_INTA	RIGHT_INTA
0	X	X	0	0
1	0	0	0	0
1	0	1	0	1
1	1	0	1	0
1	1	1	1	0

INTA: Interrupt acknowledge signal at priority layer
LEFT_IRQ: Interrupt Request signal of Left Arrow device
RIGHT_IRQ: Interrupt Request signal of Right Arrow device
LEFT_INTA: Interrupt acknowledge signal of Left Arrow Device
RIGHT_INTA: Interrupt acknowledge signal of Right Arrow Device

Using the table above, we come up with two formulas to calculate LEFT_INTA and RIGHT_INTA.

- LEFT_INTA = INTA ∧ LEFT_IRQ
- RIGHT_INTA = INTA ∧ LEFT_IRQ' ∧ RIGHT_IRQ

Up Arrow & Down Arrow Devices

Same calculations also apply for up arrow and down arrow devices.

- UP_INTA = INTA ∧ UP_IRQ
- DOWN_INTA = INTA ∧ UP_IRQ' ∧ DOWN_IRQ