**INTR/RESET HANDLER**

If INTR\_MEM == 1 and INTR\_WB == 0:

Rd/Wr = 1 -- Wr

val\_sel = 00

add\_sel = 11

SP\_load = 1

SP\_Alu = 1

else If INT\_WB == 1:

Rd/Wr = 0 -- Rd

val\_sel = xx

add\_sel = 01

SP\_load = 0

SP\_Alu = x

else If Reset == 1:

Rd/Wr = 0 -- Rd

val\_sel = xx

add\_sel = 00

SP\_load = 0

SP\_Alu = x

else:

Rd/Wr = Rd/Wr\_in -- Rd

val\_sel = val\_sel\_in

add\_sel = add\_sel\_in

SP\_load = SP\_load\_in

SP\_Alu = SP\_Alu\_in

**SWAP HANDLER**

If Opcode == 00111 and Val\_sel == 0:

val\_sel = 100

add\_sel = 1

else if opcode = 00111 and val\_sel != 0:

val\_sel = 101

add\_sel = 0

else:

val\_sel = val\_sel\_in

add\_sel = add\_sel\_in