

Computer Architecture Lab – CS322

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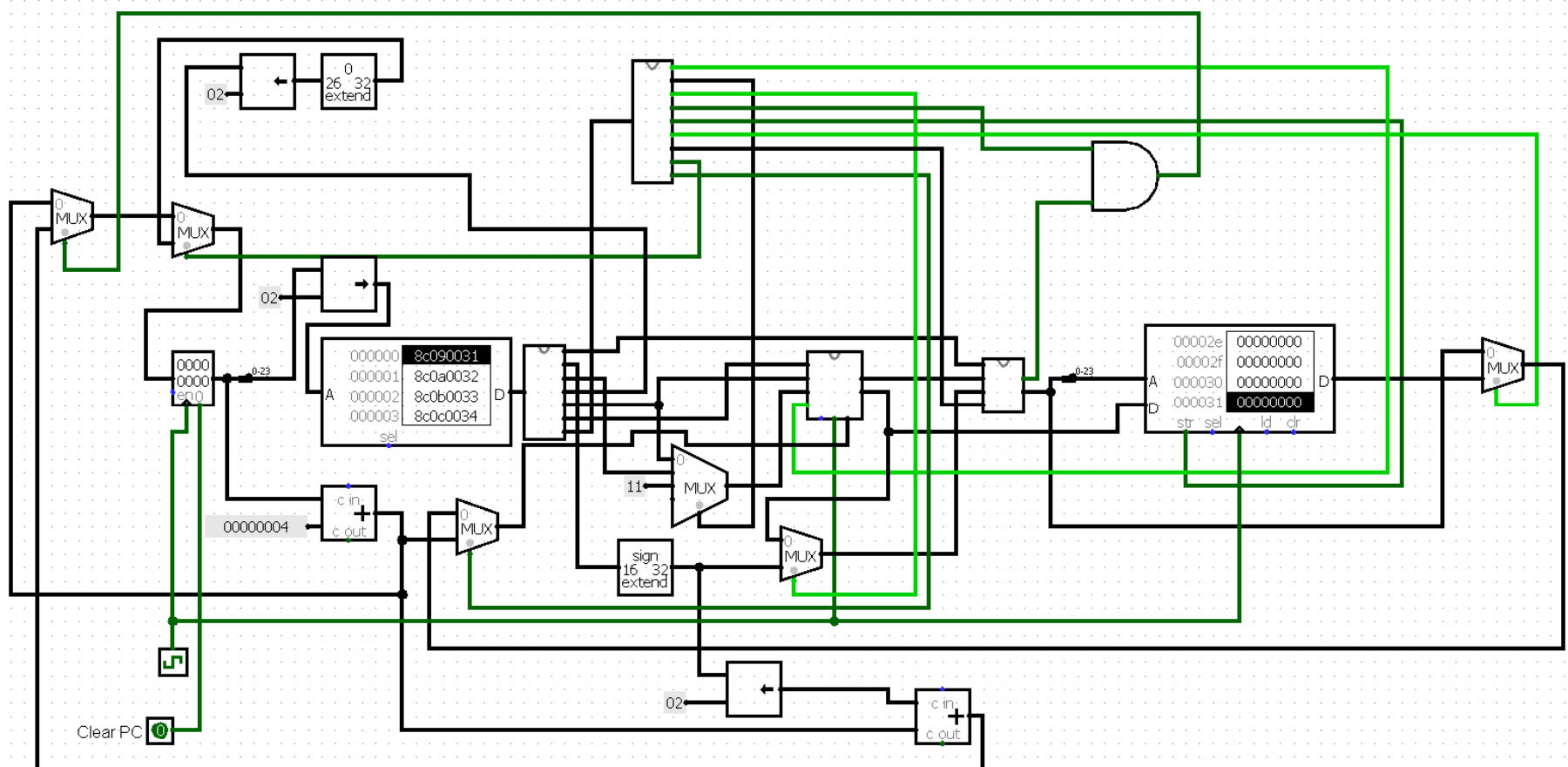
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Lab 8 – Implement a RISC Single Cycle Processor

Task 1:

Single Cycle RISC Processor:



Task 2:

Program to store sum of numbers present in memory locations 49-53 at location 80:

<u>Instruction</u>	<u>Machine Code</u>
lw \$t1, 49(\$0)	0x8c090031
lw \$t2, 50(\$0)	0x8c0a0032
lw \$t3, 51(\$0)	0x8c0b0033
lw \$t4, 52(\$0)	0x8c0c0034
lw \$t5, 53(\$0)	0x8c0d0035
addi \$t6, \$0, 0	0x200e0000
add \$t6, \$t1, \$t2	0x012a7020
add \$t6, \$t6, \$t3	0x01cb7020
add \$t6, \$t6, \$t4	0x01cc7020
add \$t6, \$t6, \$t5	0x01cd7020
sw \$t6, 80(\$0)	0xac0e0050

Values in Memory from addresses 49 to 53 (0x31 to 0x35):

000031	00000001		000035	00000009	
000032	00000003		000036	00000000	
A 000033	00000005	D	A 000037	00000000	D
D 000034	00000007		D 000038	00000000	
str sel	ld clr		str sel	ld clr	

Numbers are 1,3,5,7,9

Sum is 25 which is 0x19 in hexadecimal

Sum stored in address 80 (0x50):

000050	00000019	
000051	00000000	
A 000052	00000000	D
D 000053	00000000	
str sel	ld clr	