```
VSIM 28> run -all
# Loading rom.
         0 IR=00000000, pc=xxxx, R0=00000000, R1=00000000, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=x, RF_WE=x,RD_SEL=x, pc_sel=x, br_sel=x, pc_write=x, write_data=00000000
         5 IR=00000000, pc=xxxx, R0=00000000, R1=00000000, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=xxxxxxxx
        15 IR=xxxxxxxx, pc=0000, R0=00000000, R1=00000000, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
        25 IR=00000001, pc=0001, R0=00000000, R1=00000000, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
        35 IR=00000000, pc=0001, R0=00000000, R1=00000000, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=xxxxxxxx
        45 IR=00000000, pc=0001, R0=00000000, R1=00000000, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
        65 IR=00000000, pc=0001, R0=00000000, R1=00000000, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
        75 IR=88100001, pc=0002, R0=00000000, R1=00000000, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
        85 IR=88100001, pc=0002, R0=00000000, R1=00000000, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
        95 IR=88100001, pc=0002, R0=00000000, R1=00000000, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
# Setting rf_we=1
       105 IR=88100001, pc=0002, R0=00000000, R1=00000000, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
       115 IR=88100001, pc=0002, R0=00000000, R1=00000001, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000001
       125 IR=80211001, pc=0003, R0=00000000, R1=00000001, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       145 IR=80211001, pc=0003, R0=00000000, R1=00000001, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000002
# Setting rf_we=1
       155 IR=80211001, pc=0003, R0=00000000, R1=00000001, R2=00000000, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000002
       165 IR=80211001, pc=0003, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000002
       175 IR=8032200b, pc=0004, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000008
       195 IR=8032200b, pc=0004, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000008
# Setting rf_we=1
       205 IR=8032200b, pc=0004, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000008
       215 IR=8032200b, pc=0004, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000008
       225 IR=80412002, pc=0005, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000008
       235 IR=80412002, pc=0005, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       245 IR=80412002, pc=0005, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ffffffff
# Setting rf_we=1
       255 IR=80412002, pc=0005, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=00000000, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ffffffff
       265 IR=80412002, pc=0005, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=ffffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=ffffffff
       275 IR=8044300a, pc=0006, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=ffffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ffffffff
       285 IR=8044300a, pc=0006, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=ffffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       295 IR=8044300a, pc=0006, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=ffffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00ffffff
# Setting rf_we=1
       305 IR=8044300a, pc=0006, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=ffffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00ffffff
       315 IR=8044300a, pc=0006, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00ffffff
       325 IR=80234007, pc=0007, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00ffffff
       335 IR=80234007, pc=0007, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00fffff7
# Setting rf_we=1
       355 IR=80234007, pc=0007, R0=00000000, R1=00000001, R2=00000002, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00fffff7
       365 IR=80234007, pc=0007, R0=00000000, R1=00000001, R2=00fffff7, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00fffff7
       375 IR=80220004, pc=0008, R0=00000000, R1=00000001, R2=00fffff7, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00fffff7
       385 IR=80220004, pc=0008, R0=00000000, R1=00000001, R2=00fffff7, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=fffffff7
       395 IR=80220004, pc=0008, R0=00000000, R1=00000001, R2=00fffff7, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ff000008
# Setting rf_we=1
       405 IR=80220004, pc=0008, R0=00000000, R1=00000001, R2=00fffff7, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ff000008
       415 IR=80220004, pc=0008, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=ff000008
       425 IR=80421009, pc=0009, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ff000008
       445 IR=80421009, pc=0009, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=fe000011
# Setting rf_we=1
       455 IR=80421009, pc=0009, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=00ffffff, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=fe000011
       465 IR=80421009, pc=0009, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=fe000011, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=fe000011
       475 IR=80524005, pc=000a, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=fe000011, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=fe000011
       485 IR=80524005, pc=000a, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=fe000011, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ff000009
       495 IR=80524005, pc=000a, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=fe000011, R5=00000000, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ff000019
# Setting rf_we=1
       505 IR=80524005, pc=000a, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ff000019
       515 IR=80524005, pc=000a, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=ff000019
       525 IR=80324006, pc=000b, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=fe000000
       535 IR=80324006, pc=000b, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=fe000000
# Setting rf_we=1
       555 IR=80324006, pc=000b, R0=00000000, R1=00000001, R2=ff000008, R3=00000008, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=fe000000
       565 IR=80324006, pc=000b, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=fe000000
       575 IR=00000000, pc=000c, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=fe000000
       585 IR=00000000, pc=000c, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=fd000019
       595 IR=00000000, pc=000c, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       615 IR=00000000, pc=000c, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
       625 IR=88100001, pc=000d, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       635 IR=88100001, pc=000d, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       645 IR=88100001, pc=000d, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
# Setting rf_we=1
       655 IR=88100001, pc=000d, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
       665 IR=88100001, pc=000d, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000001
       675 IR=80211002, pc=000e, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       705 IR=80211002, pc=000e, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       715 IR=80211002, pc=000e, R0=00000000, R1=00000001, R2=ff000008, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
       725 IR=80201002, pc=000f, R0=00000000, R1=00000001, R2=00000000, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       745 IR=80201002, pc=000f, R0=00000000, R1=00000001, R2=00000000, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ffffffff
# Setting rf_we=1
       755 IR=80201002, pc=000f, R0=00000000, R1=00000001, R2=00000000, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ffffffff
       765 IR=80201002, pc=000f, R0=00000000, R1=00000001, R2=ffffffff, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=ffffffff
       775 IR=80311008, pc=0010, R0=00000000, R1=00000001, R2=ffffffff, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ffffffff
       785 IR=80311008, pc=0010, R0=00000000, R1=00000001, R2=ffffffff, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       795 IR=80311008, pc=0010, R0=00000000, R1=00000001, R2=ffffffff, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=80000000
# Setting rf_we=1
       805 IR=80311008, pc=0010, R0=00000000, R1=00000001, R2=ffffffff, R3=fe000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=80000000
       815 IR=80311008, pc=0010, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=80000000
       825 IR=80423001, pc=0011, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=80000000
       835 IR=80423001, pc=0011, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000002
       845 IR=80423001, pc=0011, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=7fffffff
# Setting rf_we=1
       855 IR=80423001, pc=0011, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=fe000011, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=7fffffff
       865 IR=80423001, pc=0011, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=7fffffff, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=7fffffff
       875 IR=00000000, pc=0012, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=7fffffff, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=7fffffff
       885 IR=00000000, pc=0012, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=7fffffff, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=7fffffff
       895 IR=00000000, pc=0012, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=7fffffff, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       915 IR=00000000, pc=0012, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=7fffffff, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
       925 IR=80400001, pc=0013, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=7fffffff, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
# Setting rf_we=1
       955 IR=80400001, pc=0013, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=7fffffff, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
       965 IR=80400001, pc=0013, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
       975 IR=6100001d, pc=0014, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=x, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
       985 IR=6100001d, pc=0014, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
      1015 IR=6100001d, pc=0014, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=1, write_data=00000000
      1025 IR=88100001, pc=0015, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
      1035 IR=88100001, pc=0015, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
      1045 IR=88100001, pc=0015, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000001
# Setting rf_we=1
      1055 IR=88100001, pc=0015, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000001
      1065 IR=88100001, pc=0015, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000001
      1075 IR=88200004, pc=0016, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
      1085 IR=88200004, pc=0016, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ffffffff
      1095 IR=88200004, pc=0016, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000004
# Setting rf_we=1
      1105 IR=88200004, pc=0016, R0=00000000, R1=00000001, R2=ffffffff, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000004
      1115 IR=88200004, pc=0016, R0=00000000, R1=00000001, R2=00000004, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000004
      1125 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000004, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=ffffffff
      1135 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000004, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
      1145 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000004, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000003
# Setting rf_we=1
      1155 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000004, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000003
      1165 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000003, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000003
      1175 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000003, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=x, pc_sel=1, br_sel=0, pc_write=0, write_data=00000003
      1185 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000003, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000003
      1195 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000003, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=xxxxxxxx
      1215 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000003, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
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#               1225 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000003, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1235 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000003, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1245 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000003, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000003
# Setting rf_we=1
#               1255 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000003, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000003
#               1265 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000003, R3=80000000, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000003
#               1275 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000003, R4=00000000, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000003
#               1285 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000003, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000003
#               1295 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000003, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
# Setting rf_we=1
#               1305 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000003, R4=00000000, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
#               1315 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000003, R4=00000001, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000001
#               1325 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000003, R4=00000001, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
#               1335 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000003, R4=00000001, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
#               1345 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000003, R4=00000001, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000002
# Setting rf_we=1
#               1355 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000003, R4=00000001, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000002
#               1365 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000003, R4=00000001, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000002
# Took BNR branch
#               1375 IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000001, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=1, write_data=00000002
#               1385 IR=7100fffd, pc=0019, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000001, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1415 IR=7100fffd, pc=0019, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000001, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
# Took BNR branch
#               1425 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000001, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1435 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000001, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1445 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000001, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000002
# Setting rf_we=1
#               1455 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000001, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000002
#               1465 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000002, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000002
#               1475 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000002, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
#               1485 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000002, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
#               1495 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000002, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
# Setting rf_we=1
#               1505 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000002, R4=00000002, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
#               1515 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000002, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000001
# Took BNR branch
#               1525 IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000002, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=1, write_data=00000001
#               1535 IR=7100fffd, pc=0019, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000002, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1565 IR=7100fffd, pc=0019, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000002, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
# Took BNR branch
#               1575 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000002, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1585 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000002, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1595 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000002, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000003
# Setting rf_we=1
#               1605 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000002, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000003
#               1615 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000003
#               1625 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000002
#               1635 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000003
#               1645 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
# Setting rf_we=1
#               1655 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000001, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
#               1665 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000003, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
#               1675 IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000003, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1685 IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000003, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1715 IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000003, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
# Took BNE branch
#               1725 IR=60000016, pc=001d, R0=00000000, R1=00000001, R2=00000003, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=1, write_data=00000000
#               1735 IR=60000016, pc=0016, R0=00000000, R1=00000001, R2=00000003, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000000
#               1765 IR=60000016, pc=0016, R0=00000000, R1=00000001, R2=00000003, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
# Took BNE branch
#               1775 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000003, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000000
#               1785 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000003, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000000
#               1795 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000003, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000002
# Setting rf_we=1
#               1805 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000003, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000002
#               1815 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000002
#               1825 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1835 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000002
#               1845 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1865 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
#               1875 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1885 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               1895 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000002
# Setting rf_we=1
#               1905 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000002
#               1915 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000002
#               1925 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000002, R3=00000002, R4=00000003, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000002
#               1935 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000002, R3=00000002, R4=00000003, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000002
#               1945 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000002, R3=00000002, R4=00000003, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000004
# Setting rf_we=1
#               1955 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000002, R3=00000002, R4=00000003, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000004
#               1965 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000002, R3=00000002, R4=00000004, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000004
#               1975 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000002, R3=00000002, R4=00000004, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000003
#               1985 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000002, R3=00000002, R4=00000004, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
#               1995 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000002, R3=00000002, R4=00000004, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
# Setting rf_we=1
#               2005 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000002, R3=00000002, R4=00000004, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
#               2015 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000004, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000001
# Took BNR branch
#               2025 IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000004, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=1, write_data=00000001
#               2035 IR=7100fffd, pc=0019, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000004, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               2065 IR=7100fffd, pc=0019, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000004, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
# Took BNR branch
#               2075 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000004, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               2085 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000004, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               2095 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000004, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000005
# Setting rf_we=1
#               2105 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000004, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000005
#               2115 IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000005
#               2125 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000004
#               2135 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000005
#               2145 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
# Setting rf_we=1
#               2155 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000002, R3=00000001, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
#               2165 IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
#               2175 IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               2185 IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               2215 IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
# Took BNE branch
#               2225 IR=60000016, pc=001d, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=1, write_data=00000000
#               2235 IR=60000016, pc=0016, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000000
#               2265 IR=60000016, pc=0016, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
# Took BNE branch
#               2275 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000000
#               2285 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000000
#               2295 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000001
# Setting rf_we=1
#               2305 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000002, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000001
#               2315 IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000001
#               2325 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               2335 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000001
#               2345 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               2365 IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
#               2375 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               2385 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#               2395 IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000001
# Setting rf_we=1
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#                2405  IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000005, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000001
#                2415  IR=88320000, pc=0019, R0=00000000, R1=00000001, R2=00000001, R3=00000001, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000001
#                2425  IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000001, R3=00000001, R4=00000005, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
#                2435  IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000001, R3=00000001, R4=00000005, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000001
#                2445  IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000001, R3=00000001, R4=00000005, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000006
# Setting rf_we=1
#                2455  IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000001, R3=00000001, R4=00000005, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000006
#                2465  IR=88440001, pc=001a, R0=00000000, R1=00000001, R2=00000001, R3=00000001, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000006
#                2475  IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000001, R3=00000001, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000005
#                2485  IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000001, R3=00000001, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000006
#                2495  IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000001, R3=00000001, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
# Setting rf_we=1
#                2505  IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000001, R3=00000001, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=0, write_data=00000000
#                2515  IR=80331002, pc=001b, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
#                2525  IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#                2535  IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#                2565  IR=7100fffd, pc=001c, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
# Took BNE branch
#                2575  IR=60000016, pc=001d, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=1, write_data=00000000
#                2585  IR=60000016, pc=0016, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000000
#                2615  IR=60000016, pc=0016, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
# Took BNE branch
#                2625  IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000000
#                2635  IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000000
# Setting rf_we=1
#                2655  IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000001, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=1, WB_SEL=0, RF_WE=1,RD_SEL=0, pc_sel=1, br_sel=1, pc_write=0, write_data=00000000
#                2665  IR=8822ffff, pc=0017, R0=00000000, R1=00000001, R2=00000000, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
# Took BRR branch
#                2675  IR=51000005, pc=0018, R0=00000000, R1=00000001, R2=00000000, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=1, write_data=00000000
#                2685  IR=51000005, pc=001d, R0=00000000, R1=00000001, R2=00000000, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=2, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
#                2715  IR=51000005, pc=001d, R0=00000000, R1=00000001, R2=00000000, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=0, br_sel=0, pc_write=1, write_data=00000000
# Took BRR branch
#                2725  IR=f0000000, pc=001e, R0=00000000, R1=00000001, R2=00000000, R3=00000000, R4=00000006, R5=ff000019, ALU_OP=0, WB_SEL=0, RF_WE=0,RD_SEL=0, pc_sel=1, br_sel=0, pc_write=0, write_data=00000000
# Halt.
# ** Note: $stop    : C:/Users/User/OneDrive - University of Iowa/2019 Spring Semester/Computer Architecture & Organization/Comp-Arch-Org-Project/ctrl.v(221)
#    Time: 2730 ns  Iteration: 0  Instance: /sisc_tb/uut/ctrl1
# Break in Module ctrl at C:/Users/User/OneDrive - University of Iowa/2019 Spring Semester/Computer Architecture & Organization/Comp-Arch-Org-Project/ctrl.v line 221
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