TEST FILE #1

lw r10, 0(r0) 8c0a0000 2349465600 -1945501696

lh r11, 0(r0) 840b0000 2215313408 -2079653888

lb r12, 0(r0) 800c0000 2148270080 -2146697216

addi r2, r0, 100 20020064

sw 0(r2), r10 ac4a0000 2890530816 -1404436480

sh 4(r2), r10 a44a0004 2756313092 -1538654204

sb 8(r2), r10 a04a0008

Press Enter to Go to Next Step

First Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -1945501696 PC: 0

Data Bus:

S1: 0 S2: 4 Dest: 0 Addr: 0 Data: -1945501696

Register Buffers

A: 0 B: 0 C: 0

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -1945501696 PC: 4

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 10 C: 0

Find MAR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -1945501696 PC: 4

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 10 C: 0

Find MDR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: -1945501696

Hardware Registers:

IR: -1945501696 PC: 4

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: -1945501696

Register Buffers

A: 0 B: 10 C: 0

Find C

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: -1945501696

Hardware Registers:

IR: -1945501696 PC: 4

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 10 C: -1945501696

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: -1945501696

Hardware Registers:

IR: -1945501696 PC: 4

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 10 C: -1945501696

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -2079653888 PC: 4

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 4 Data: -2079653888

Register Buffers

A: 0 B: 10 C: -1945501696

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -2079653888 PC: 8

Data Bus:

S1: 0 S2: 4 Dest: 4 Addr: 0 Data: 0

Register Buffers

A: 0 B: 11 C: -1945501696

Find MAR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -2079653888 PC: 8

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 11 C: -1945501696

Find MDR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 573600

Hardware Registers:

IR: -2079653888 PC: 8

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 573600

Register Buffers

A: 0 B: 11 C: -1945501696

Find C

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 573600

Hardware Registers:

IR: -2079653888 PC: 8

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 11 C: 573600

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 573600

Hardware Registers:

IR: -2079653888 PC: 8

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 11 C: 573600

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -2146697216 PC: 8

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 8 Data: -2146697216

Register Buffers

A: 0 B: 11 C: 573600

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -2146697216 PC: 12

Data Bus:

S1: 0 S2: 4 Dest: 4 Addr: 0 Data: 0

Register Buffers

A: 0 B: 12 C: 573600

Find MAR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -2146697216 PC: 12

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 12 C: 573600

Find MDR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 140

Hardware Registers:

IR: -2146697216 PC: 12

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 140

Register Buffers

A: 0 B: 12 C: 573600

Find C

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 140

Hardware Registers:

IR: -2146697216 PC: 12

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 12 C: 140

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 140

Hardware Registers:

IR: -2146697216 PC: 12

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 12 C: 140

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 537002084 PC: 12

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 12 Data: 537002084

Register Buffers

A: 0 B: 12 C: 140

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 537002084 PC: 16

Data Bus:

S1: 0 S2: 4 Dest: 4 Addr: 0 Data: 0

Register Buffers

A: 0 B: 2 C: 140

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 537002084 PC: 16

Data Bus:

S1: 0 S2: 100 Dest: 100 Addr: 0 Data: 0

Register Buffers

A: 0 B: 2 C: 100

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 537002084 PC: 16

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 2 C: 100

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -1404436480 PC: 16

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 16 Data: -1404436480

Register Buffers

A: 0 B: 2 C: 100

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -1404436480 PC: 20

Data Bus:

S1: 2 S2: 4 Dest: 6 Addr: 0 Data: 0

Register Buffers

A: 2 B: 10 C: 100

Find MAR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 2 MDR: 0

Hardware Registers:

IR: -1404436480 PC: 20

Data Bus:

S1: 2 S2: 0 Dest: 2 Addr: 0 Data: 0

Register Buffers

A: 2 B: 10 C: 100

Find MDR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 2 MDR: 10

Hardware Registers:

IR: -1404436480 PC: 20

Data Bus:

S1: 0 S2: 10 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 2 B: 10 C: 100

Save to Memory

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 10

Hardware Registers:

IR: -1404436480 PC: 20

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 10

Register Buffers

A: 2 B: 10 C: 100

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -1538654204 PC: 20

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 20 Data: -1538654204

Register Buffers

A: 2 B: 10 C: 100

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -1538654204 PC: 24

Data Bus:

S1: 2 S2: 4 Dest: 6 Addr: 0 Data: 0

Register Buffers

A: 2 B: 10 C: 100

Find MAR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 6 MDR: 0

Hardware Registers:

IR: -1538654204 PC: 24

Data Bus:

S1: 2 S2: 10 Dest: 12 Addr: 0 Data: 0

Register Buffers

A: 2 B: 10 C: 100

Find MDR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 6 MDR: 10

Hardware Registers:

IR: -1538654204 PC: 24

Data Bus:

S1: 0 S2: 10 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 2 B: 10 C: 100

Save to Memory

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 10

Hardware Registers:

IR: -1538654204 PC: 24

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 10

Register Buffers

A: 2 B: 10 C: 100

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -1605763064 PC: 24

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 24 Data: -1605763064

Register Buffers

A: 2 B: 10 C: 100

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: -1605763064 PC: 28

Data Bus:

S1: 2 S2: 4 Dest: 6 Addr: 0 Data: 0

Register Buffers

A: 2 B: 10 C: 100

Find MAR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 10 MDR: 0

Hardware Registers:

IR: -1605763064 PC: 28

Data Bus:

S1: 2 S2: 10 Dest: 12 Addr: 0 Data: 0

Register Buffers

A: 2 B: 10 C: 100

Find MDR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 10 MDR: 10

Hardware Registers:

IR: -1605763064 PC: 28

Data Bus:

S1: 0 S2: 10 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 2 B: 10 C: 100

Save to Memory

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 100 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 2349465600 R11: 573600 R12: 140 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 10

Hardware Registers:

IR: -1605763064 PC: 28

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 10

Register Buffers

A: 2 B: 10 C: 100

--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

TEST FILE #2

J labelA 08000024 134217764

Add r24,r22,r30 02dec020 48152608

AND r14,r15,r16 01f07024 2033444

OR r7,r8,r9 01093825 17381413

SLL r19,r17,r14 022e9804 36608004

SRL r13, r14,r15 01cf6806

labelB Add r16,r7,r18 00f28020

ORI r19,r20,121 36930079 915603577

J end 0800001C

Add r22,r23,r24 02f8b020

labelA BEQZ r14,labelB 10000014

OR r7,r13,r26 01ba3825

Addi r14,r25,24 232e0018

ori r7,r8,9 35070009

Add r18,r17,r27 023b9020

End Add r13, r14,r15 01cf6820

Press Enter to Go to Next Step

First Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 134217764 PC: 0

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 134217764

Register Buffers

A: 0 B: 0 C: 0

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 134217764 PC: 4

Data Bus:

S1: 0 S2: 4 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 0 C: 0

Update the PC with the Offset

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 134217764 PC: 40

Data Bus:

S1: 36 S2: 36 Dest: 72 Addr: 0 Data: 0

Register Buffers

A: 0 B: 0 C: 0

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 276889556 PC: 40

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 40 Data: 276889556

Register Buffers

A: 0 B: 0 C: 0

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 276889556 PC: 44

Data Bus:

S1: 40 S2: 4 Dest: 44 Addr: 0 Data: 0

Register Buffers

A: 14 B: 0 C: 0

Check if RS1 Equals Zero

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 276889556 PC: 44

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 14 B: 0 C: 0

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 28981285 PC: 44

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 44 Data: 28981285

Register Buffers

A: 14 B: 0 C: 0

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 28981285 PC: 48

Data Bus:

S1: 44 S2: 4 Dest: 44 Addr: 0 Data: 0

Register Buffers

A: 13 B: 26 C: 0

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 28981285 PC: 48

Data Bus:

S1: 13 S2: 26 Dest: 31 Addr: 0 Data: 0

Register Buffers

A: 13 B: 26 C: 31

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 31 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 28981285 PC: 48

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 13 B: 26 C: 31

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 31 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 590217240 PC: 48

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 48 Data: 590217240

Register Buffers

A: 13 B: 26 C: 31

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 31 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 590217240 PC: 52

Data Bus:

S1: 25 S2: 4 Dest: 29 Addr: 0 Data: 0

Register Buffers

A: 25 B: 14 C: 31

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 31 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 590217240 PC: 52

Data Bus:

S1: 25 S2: 14 Dest: 49 Addr: 0 Data: 0

Register Buffers

A: 25 B: 14 C: 49

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 31 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 590217240 PC: 52

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 25 B: 14 C: 49

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 31 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 889651209 PC: 52

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 52 Data: 889651209

Register Buffers

A: 25 B: 14 C: 49

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 31 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 889651209 PC: 56

Data Bus:

S1: 8 S2: 4 Dest: 12 Addr: 0 Data: 0

Register Buffers

A: 8 B: 7 C: 49

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 31 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 889651209 PC: 56

Data Bus:

S1: 8 S2: 7 Dest: 15 Addr: 0 Data: 0

Register Buffers

A: 8 B: 7 C: 9

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 889651209 PC: 56

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 8 B: 7 C: 9

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 37457952 PC: 56

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 56 Data: 37457952

Register Buffers

A: 8 B: 7 C: 9

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 37457952 PC: 60

Data Bus:

S1: 17 S2: 4 Dest: 21 Addr: 0 Data: 0

Register Buffers

A: 17 B: 27 C: 9

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 37457952 PC: 60

Data Bus:

S1: 17 S2: 27 Dest: 44 Addr: 0 Data: 0

Register Buffers

A: 17 B: 27 C: 44

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 44 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 37457952 PC: 60

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 17 B: 27 C: 44

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 44 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 30369824 PC: 60

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 60 Data: 30369824

Register Buffers

A: 17 B: 27 C: 44

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 44 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 30369824 PC: 64

Data Bus:

S1: 14 S2: 4 Dest: 18 Addr: 0 Data: 0

Register Buffers

A: 14 B: 15 C: 44

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 49 R15: 15 R16: 16 R17: 17 R18: 44 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 30369824 PC: 64

Data Bus:

S1: 14 S2: 15 Dest: 29 Addr: 0 Data: 0

Register Buffers

A: 14 B: 15 C: 29

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 29 R14: 49 R15: 15 R16: 16 R17: 17 R18: 44 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 30369824 PC: 64

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 14 B: 15 C: 29

--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

TEST FILE #3

J labelA 08000024 134217764

Add r24,r22,r30 02dec020 48152608

AND r14,r15,r16 01f07024 2033444

OR r7,r8,r9 01093825 17381413

SLL r19,r17,r14 022e9804 36608004

SRL r13, r14,r15 01cf6806

labelB Add r16,r7,r18 00f28020

ORI r19,r20,121 36930079 915603577

J end 0800001C

Add r22,r23,r24 02f8b020

labelA BEQZ r0,labelB 10000014

OR r7,r13,r26 01ba3825

Addi r14,r25,24 232e0018

ori r7,r8,9 35070009

Add r18,r17,r27 023b9020

End Add r13, r14,r15 01cf6820

Press Enter to Go to Next Step

First Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 134217764 PC: 0

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 134217764

Register Buffers

A: 0 B: 0 C: 0

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 134217764 PC: 4

Data Bus:

S1: 0 S2: 4 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 0 C: 0

Update the PC with the Offset

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 134217764 PC: 40

Data Bus:

S1: 36 S2: 36 Dest: 72 Addr: 0 Data: 0

Register Buffers

A: 0 B: 0 C: 0

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 268435476 PC: 40

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 40 Data: 268435476

Register Buffers

A: 0 B: 0 C: 0

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 268435476 PC: 44

Data Bus:

S1: 40 S2: 4 Dest: 44 Addr: 0 Data: 0

Register Buffers

A: 0 B: 0 C: 0

Check if RS1 Equals Zero

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 268435476 PC: 44

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 0 C: 0

Update the PC with IR

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 268435476 PC: 24

Data Bus:

S1: 20 S2: 20 Dest: 40 Addr: 0 Data: 0

Register Buffers

A: 0 B: 0 C: 0

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 15892512 PC: 24

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 24 Data: 15892512

Register Buffers

A: 0 B: 0 C: 0

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 15892512 PC: 28

Data Bus:

S1: 24 S2: 4 Dest: 28 Addr: 0 Data: 0

Register Buffers

A: 7 B: 18 C: 0

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 15892512 PC: 28

Data Bus:

S1: 7 S2: 18 Dest: 25 Addr: 0 Data: 0

Register Buffers

A: 7 B: 18 C: 25

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 25 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 15892512 PC: 28

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 7 B: 18 C: 25

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 25 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 915603577 PC: 28

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 28 Data: 915603577

Register Buffers

A: 7 B: 18 C: 25

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 25 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 915603577 PC: 32

Data Bus:

S1: 20 S2: 4 Dest: 20 Addr: 0 Data: 0

Register Buffers

A: 20 B: 19 C: 25

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 25 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 915603577 PC: 32

Data Bus:

S1: 20 S2: 19 Dest: 23 Addr: 0 Data: 0

Register Buffers

A: 20 B: 19 C: 125

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 25 R17: 17 R18: 18 R19: 125 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 915603577 PC: 32

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 20 B: 19 C: 125

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 25 R17: 17 R18: 18 R19: 125 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 134217756 PC: 32

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 32 Data: 134217756

Register Buffers

A: 20 B: 19 C: 125

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 25 R17: 17 R18: 18 R19: 125 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 134217756 PC: 36

Data Bus:

S1: 0 S2: 4 Dest: 4 Addr: 0 Data: 0

Register Buffers

A: 0 B: 0 C: 125

Update the PC with the Offset

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 25 R17: 17 R18: 18 R19: 125 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 134217756 PC: 64

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 0 B: 0 C: 125

--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

TEST FILE #4

02dec020 48152608

01f07024

01093825

022e9804 36608004

01cf6806

226f0093

373e004b 926810187

Press Enter to Go to Next Step

First Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 48152608 PC: 0

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 48152608

Register Buffers

A: 0 B: 0 C: 0

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 48152608 PC: 4

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 22 B: 30 C: 0

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 24 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 48152608 PC: 4

Data Bus:

S1: 22 S2: 30 Dest: 52 Addr: 0 Data: 0

Register Buffers

A: 22 B: 30 C: 52

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 48152608 PC: 4

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 22 B: 30 C: 52

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 32534564 PC: 4

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 4 Data: 32534564

Register Buffers

A: 22 B: 30 C: 52

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 32534564 PC: 8

Data Bus:

S1: 15 S2: 4 Dest: 4 Addr: 0 Data: 0

Register Buffers

A: 15 B: 16 C: 52

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 14 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 32534564 PC: 8

Data Bus:

S1: 15 S2: 16 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 15 B: 16 C: 0

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 32534564 PC: 8

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 15 B: 16 C: 0

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 17381413 PC: 8

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 8 Data: 17381413

Register Buffers

A: 15 B: 16 C: 0

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 17381413 PC: 12

Data Bus:

S1: 8 S2: 4 Dest: 12 Addr: 0 Data: 0

Register Buffers

A: 8 B: 9 C: 0

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 7 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 17381413 PC: 12

Data Bus:

S1: 8 S2: 9 Dest: 9 Addr: 0 Data: 0

Register Buffers

A: 8 B: 9 C: 9

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 17381413 PC: 12

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 8 B: 9 C: 9

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 36608004 PC: 12

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 12 Data: 36608004

Register Buffers

A: 8 B: 9 C: 9

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 36608004 PC: 16

Data Bus:

S1: 17 S2: 4 Dest: 272 Addr: 0 Data: 0

Register Buffers

A: 17 B: 14 C: 9

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 19 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 36608004 PC: 16

Data Bus:

S1: 17 S2: 14 Dest: 278528 Addr: 0 Data: 0

Register Buffers

A: 17 B: 14 C: 278528

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 36608004 PC: 16

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 17 B: 14 C: 278528

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 30369798 PC: 16

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 16 Data: 30369798

Register Buffers

A: 17 B: 14 C: 278528

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 30369798 PC: 20

Data Bus:

S1: 14 S2: 4 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 14 B: 15 C: 278528

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 13 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 30369798 PC: 20

Data Bus:

S1: 14 S2: 15 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 14 B: 15 C: 0

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 0 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 30369798 PC: 20

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 14 B: 15 C: 0

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 0 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 577699987 PC: 20

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 20 Data: 577699987

Register Buffers

A: 14 B: 15 C: 0

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 0 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 577699987 PC: 24

Data Bus:

S1: 19 S2: 4 Dest: 23 Addr: 0 Data: 0

Register Buffers

A: 19 B: 15 C: 0

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 0 R14: 0 R15: 15 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 577699987 PC: 24

Data Bus:

S1: 19 S2: 15 Dest: 34 Addr: 0 Data: 0

Register Buffers

A: 19 B: 15 C: 166

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 0 R14: 0 R15: 166 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 577699987 PC: 24

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 19 B: 15 C: 166

Next Instruction

Read the Instruction

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 0 R14: 0 R15: 166 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 926810187 PC: 24

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 24 Data: 926810187

Register Buffers

A: 19 B: 15 C: 166

Update the PC

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 0 R14: 0 R15: 166 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 926810187 PC: 28

Data Bus:

S1: 25 S2: 4 Dest: 29 Addr: 0 Data: 0

Register Buffers

A: 25 B: 30 C: 166

Perform the Operation

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 0 R14: 0 R15: 166 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 30 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 926810187 PC: 28

Data Bus:

S1: 25 S2: 30 Dest: 31 Addr: 0 Data: 0

Register Buffers5:19 PM 5/9/2018

A: 25 B: 30 C: 91

Save to Register

=======================================================================================================================

Register File:

R0: 0 R1: 1 R2: 2 R3: 3 R4: 4 R5: 5 R6: 6 R7: 9 R8: 8 R9: 9 R10: 10 R11: 11 R12: 12 R13: 0 R14: 0 R15: 166 R16: 16 R17: 17 R18: 18 R19: 278528 R20: 20 R21: 21 R22: 22 R23: 23 R24: 52 R25: 25 R26: 26 R27: 27 R28: 28 R29: 29 R30: 91 R31: 31

Memory Registers:

MAR: 0 MDR: 0

Hardware Registers:

IR: 926810187 PC: 28

Data Bus:

S1: 0 S2: 0 Dest: 0 Addr: 0 Data: 0

Register Buffers

A: 25 B: 30 C: 91