10000.00ns DEBUG   Performance Model   **************** Clock cycle: 0 ********************

10000.00ns DEBUG   Performance Model   ****** Current Instruction *********

10000.00ns DEBUG   Performance Model   Binary string:11100011101000000001000000010011

10000.00ns DEBUG   Performance Model   Operation type Data Processing

10000.00ns DEBUG   Performance Model   cond:E

10000.00ns DEBUG   Performance Model   Immediate bit:1

10000.00ns DEBUG   Performance Model   cmd:D

10000.00ns DEBUG   Performance Model   Set bit:0

10000.00ns DEBUG   Performance Model   Rn:0   Rd:1

10000.00ns DEBUG   Performance Model   rot:0   imm8:19

15000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals **************

my_datapath.ALUControlE   = 0000

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x00000000

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 0000

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000000

my_datapath.ExtImmE   = 0x00000000

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 000000

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0x000000

my_datapath.InstructionD   = 0x00000000

my_datapath.InstructionE   = 0x00000000

my_datapath.InstructionF   = 0xe3a01013

my_datapath.L   = 0

my_datapath.MemWriteM   = 0

my_datapath.MemtoRegW   = 0

my_datapath.Op   = 00

my_datapath.PCFetch   = 0x00000000

```
my_datapath.PCPlus4D        = 0x00000000
my_datapath.PCPlus4F        = 0x00000004
my_datapath.PCPlus8D        = 0x00000004
my_datapath.PCSrcW          = 0
my_datapath.PC_NEXT         = 0x00000004
my_datapath.PC_NEXT_NEXT    = 0x00000004
my_datapath.RA1D            = 0000
my_datapath.RA1E            = 0000
my_datapath.RA2D            = 0000
my_datapath.RA2E            = 0000
my_datapath.RD1             = 0x00000000
my_datapath.RD1E            = 0x00000000
my_datapath.RD2             = 0x00000000
my_datapath.RD2E            = 0x00000000
my_datapath.REG_FILE_DATA   = 0x00000000
my_datapath.ROT_VALUE       = 00000000
my_datapath.Rd              = 0000
my_datapath.ReadDataM       = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW       = 0x00000000
my_datapath.RegSrcD         = 00
my_datapath.RegWriteW       = 0
my_datapath.ResultW         = 0x00000000
my_datapath.Rm              = 0000
my_datapath.Rn              = 0000
my_datapath.SHIFTED_DATA    = 0x00000000
my_datapath.SHIFT_CONTROL   = 00
my_datapath.SHIFT_DATA      = 0x00000000
my_datapath.SHIFT_SHAMT     = 00000
my_datapath.SrcAE           = 0x00000000
my_datapath.SrcB            = 0x00000000
my_datapath.SrcBE           = 0x00000000
my_datapath.SrcBEData       = 0x00000000
my_datapath.StallD          = 0
my_datapath.StallF          = 0
my_datapath.WA3E            = 0000
my_datapath.WA3M            = 0000
my_datapath.WA3W            = 0000
my_datapath.WriteDataM      = 0x00000000
my_datapath.Write_Z_ENABLE  = 0
```

```
my_datapath.Z_FLAG        = 0

my_datapath.Z_OUT         = 1

my_datapath.clk           = 1

my_datapath.reset         = 0

 15000.00ns DEBUG   Performance Model          ************ DUT Controller Signals ***************

my_controller.ALUControlD    = 0000

my_controller.ALUControlE    = 0000

my_controller.ALUSrcD        = 0

my_controller.ALUSrcE        = 0

my_controller.BControl       = 0

my_controller.BranchD        = 0

my_controller.BranchE        = 0

my_controller.BranchTakenE   = 0

my_controller.Cond           = 0000

my_controller.CondE          = 0000

my_controller.CondEx         = 0

my_controller.FlagWriteD     = 01

my_controller.FlagWriteE     = 00

my_controller.FuncControl    = 0

my_controller.Funct          = 000000

my_controller.ImmSrcD        = 00

my_controller.MemWriteD      = 0

my_controller.MemWriteE      = 0

my_controller.MemWriteM      = 0

my_controller.MemtoRegD      = 0

my_controller.MemtoRegE      = 0

my_controller.MemtoRegM      = 0

my_controller.MemtoRegW      = 0

my_controller.Op             = 00

my_controller.PCSrcD         = 0

my_controller.PCSrcE         = 0

my_controller.PCSrcM         = 0

my_controller.PCSrcW         = 0

my_controller.RegSrcD        = 00

my_controller.RegWriteD      = 1

my_controller.RegWriteE      = 0

my_controller.RegWriteM      = 0

my_controller.RegWriteW      = 0

my_controller.Write_Z_ENABLE = 0
```

my_controller.Z_FLAG   = 0

my_controller.clk   = 1

my_controller.reset   = 0

16000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

16000.00ns DEBUG   Performance Model   PC:0x4   PC:0x4

16000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:1: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:2: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:3: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:4: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:5: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:6: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:7: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:8: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

16000.00ns DEBUG   Performance Model   Register:15: Not checked   0x8

16000.00ns DEBUG   Performance Model   **************** Clock cycle: 1 *********************

16000.00ns DEBUG   Performance Model   ****** Current Instruction *********

16000.00ns DEBUG   Performance Model   Binary string:11100000100000010010000000000001

16000.00ns DEBUG   Performance Model   Operation type Data Processing

16000.00ns DEBUG   Performance Model   cond:E

16000.00ns DEBUG   Performance Model   Immediate bit:0

16000.00ns DEBUG   Performance Model   cmd:4

16000.00ns DEBUG   Performance Model   Set bit:0

16000.00ns DEBUG   Performance Model   Rn:1   Rd:2

16000.00ns DEBUG   Performance Model   shamt5:0   sh:0   Rm:1

25000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals **************

my_datapath.ALUControlE   = 0000

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x00000000

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

```
my_datapath.Cond          = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out     = 0x00000000

my_datapath.DestSelect    = 0000

my_datapath.ExtImmD       = 0x00000013

my_datapath.ExtImmE       = 0x00000000

my_datapath.FlushD        = 0

my_datapath.FlushE        = 0

my_datapath.ForwardAE     = 00

my_datapath.ForwardBE     = 00

my_datapath.Funct         = 111010

my_datapath.ImmSrcD       = 00

my_datapath.Inst          = 0xa01013

my_datapath.InstructionD   = 0xe3a01013

my_datapath.InstructionE   = 0x00000000

my_datapath.InstructionF   = 0xe0812001

my_datapath.L             = 0

my_datapath.MemWriteM     = 0

my_datapath.MemtoRegW     = 0

my_datapath.Op            = 00

my_datapath.PCFetch       = 0x00000004

my_datapath.PCPlus4D      = 0x00000004

my_datapath.PCPlus4F      = 0x00000008

my_datapath.PCPlus8D      = 0x00000008

my_datapath.PCSrcW        = 0

my_datapath.PC_NEXT       = 0x00000008

my_datapath.PC_NEXT_NEXT   = 0x00000008

my_datapath.RA1D          = 0000

my_datapath.RA1E          = 0000

my_datapath.RA2D          = 0011

my_datapath.RA2E          = 0000

my_datapath.RD1           = 0x00000000

my_datapath.RD1E          = 0x00000000

my_datapath.RD2           = 0x00000000

my_datapath.RD2E          = 0x00000000

my_datapath.REG_FILE_DATA  = 0x00000000

my_datapath.ROT_VALUE     = 00000000

my_datapath.Rd            = 0001

my_datapath.ReadDataM     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

my_datapath.ReadDataW   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD   = 00

my_datapath.RegWriteW   = 0

my_datapath.ResultW   = 0x00000000

my_datapath.Rm   = 0011

my_datapath.Rn   = 0000

my_datapath.SHIFTED_DATA   = 0x00000000

my_datapath.SHIFT_CONTROL   = 00

my_datapath.SHIFT_DATA   = 0x00000000

my_datapath.SHIFT_SHAMT   = 00000

my_datapath.SrcAE   = 0x00000000

my_datapath.SrcB   = 0x00000000

my_datapath.SrcBE   = 0x00000000

my_datapath.SrcBEData   = 0x00000000

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0000

my_datapath.WA3M   = 0000

my_datapath.WA3W   = 0000

my_datapath.WriteDataM   = 0x00000000

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG   = 0

my_datapath.Z_OUT   = 1

my_datapath.clk   = 1

my_datapath.reset   = 0

 25000.00ns DEBUG   Performance Model   ************ DUT Controller Signals ***************

my_controller.ALUControlD   = 1101

my_controller.ALUControlE   = 0000

my_controller.ALUSrcD   = 0

my_controller.ALUSrcE   = 0

my_controller.BControl   = 0

my_controller.BranchD   = 0

my_controller.BranchE   = 0

my_controller.BranchTakenE   = 0

my_controller.Cond   = 1110

my_controller.CondE   = 0000

my_controller.CondEx   = 0

my_controller.FlagWriteD   = 00

my_controller.FlagWriteE   = 01

```
my_controller.FuncControl   = 0
my_controller.Funct         = 111010
my_controller.ImmSrcD       = 00
my_controller.MemWriteD     = 0
my_controller.MemWriteE     = 0
my_controller.MemWriteM     = 0
my_controller.MemtoRegD     = 0
my_controller.MemtoRegE     = 0
my_controller.MemtoRegM     = 0
my_controller.MemtoRegW     = 0
my_controller.Op            = 00
my_controller.PCSrcD        = 0
my_controller.PCSrcE        = 0
my_controller.PCSrcM        = 0
my_controller.PCSrcW        = 0
my_controller.RegSrcD       = 00
my_controller.RegWriteD     = 1
my_controller.RegWriteE     = 1
my_controller.RegWriteM     = 0
my_controller.RegWriteW     = 0
my_controller.Write_Z_ENABLE = 1
my_controller.Z_FLAG        = 0
my_controller.clk           = 1
my_controller.reset         = 0
```

26000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************
26000.00ns DEBUG   Performance Model   PC:0x8   PC:0x8
26000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:1: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:2: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:3: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:4: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:5: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:6: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:7: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:8: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0
26000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

26000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

26000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

26000.00ns DEBUG   Performance Model   Register:15: Not checked   0xc

26000.00ns DEBUG   Performance Model   **************** Clock cycle: 2 ********************

26000.00ns DEBUG   Performance Model   ****** Current Instruction *********

26000.00ns DEBUG   Performance Model   Binary string:11100000000000010011000000000010

26000.00ns DEBUG   Performance Model   Operation type Data Processing

26000.00ns DEBUG   Performance Model   cond:E

26000.00ns DEBUG   Performance Model   Immediate bit:0

26000.00ns DEBUG   Performance Model   cmd:0

26000.00ns DEBUG   Performance Model   Set bit:0

26000.00ns DEBUG   Performance Model   Rn:1   Rd:3

26000.00ns DEBUG   Performance Model   shamt5:0   sh:0   Rm:2

35000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals **************

my_datapath.ALUControlE   = 1101

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x00000013

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000001

my_datapath.ExtImmE   = 0x00000013

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 001000

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0x812001

my_datapath.InstructionD   = 0xe0812001

my_datapath.InstructionE   = 0xe3a01013

my_datapath.InstructionF   = 0xe0013002

my_datapath.L   = 0

my_datapath.MemWriteM   = 0

```
my_datapath.MemtoRegW      = 0
my_datapath.Op             = 00
my_datapath.PCFetch        = 0x00000008
my_datapath.PCPlus4D       = 0x00000008
my_datapath.PCPlus4F       = 0x0000000c
my_datapath.PCPlus8D       = 0x0000000c
my_datapath.PCSrcW         = 0
my_datapath.PC_NEXT        = 0x0000000c
my_datapath.PC_NEXT_NEXT   = 0x0000000c
my_datapath.RA1D           = 0001
my_datapath.RA1E           = 0000
my_datapath.RA2D           = 0001
my_datapath.RA2E           = 0011
my_datapath.RD1            = 0x00000000
my_datapath.RD1E           = 0x00000000
my_datapath.RD2            = 0x00000000
my_datapath.RD2E           = 0x00000000
my_datapath.REG_FILE_DATA  = 0x00000000
my_datapath.ROT_VALUE      = 00000000
my_datapath.Rd             = 0010
my_datapath.ReadDataM      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.RegSrcD        = 00
my_datapath.RegWriteW      = 0
my_datapath.ResultW        = 0x00000000
my_datapath.Rm             = 0001
my_datapath.Rn             = 0001
my_datapath.SHIFTED_DATA   = 0x00000013
my_datapath.SHIFT_CONTROL  = 11
my_datapath.SHIFT_DATA     = 0x00000013
my_datapath.SHIFT_SHAMT    = 00000
my_datapath.SrcAE          = 0x00000000
my_datapath.SrcB           = 0x00000000
my_datapath.SrcBE          = 0x00000013
my_datapath.SrcBEData      = 0x00000013
my_datapath.StallD         = 0
my_datapath.StallF         = 0
my_datapath.WA3E           = 0001
my_datapath.WA3M           = 0000
```

```
my_datapath.WA3W          = 0000

my_datapath.WriteDataM    = 0x00000000

my_datapath.Write_Z_ENABLE = 0

my_datapath.Z_FLAG        = 1

my_datapath.Z_OUT         = 0

my_datapath.clk           = 1

my_datapath.reset         = 0

 35000.00ns DEBUG   Performance Model              ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0100

my_controller.ALUControlE   = 1101

my_controller.ALUSrcD       = 0

my_controller.ALUSrcE       = 0

my_controller.BControl      = 0

my_controller.BranchD       = 0

my_controller.BranchE       = 0

my_controller.BranchTakenE  = 0

my_controller.Cond          = 1110

my_controller.CondE         = 1110

my_controller.CondEx        = 1

my_controller.FlagWriteD    = 01

my_controller.FlagWriteE    = 00

my_controller.FuncControl   = 0

my_controller.Funct         = 001000

my_controller.ImmSrcD       = 00

my_controller.MemWriteD     = 0

my_controller.MemWriteE     = 0

my_controller.MemWriteM     = 0

my_controller.MemtoRegD     = 0

my_controller.MemtoRegE     = 0

my_controller.MemtoRegM     = 0

my_controller.MemtoRegW     = 0

my_controller.Op            = 00

my_controller.PCSrcD        = 0

my_controller.PCSrcE        = 0

my_controller.PCSrcM        = 0

my_controller.PCSrcW        = 0

my_controller.RegSrcD       = 00

my_controller.RegWriteD     = 1

my_controller.RegWriteE     = 1
```

my_controller.RegWriteM   = 0

my_controller.RegWriteW   = 0

my_controller.Write_Z_ENABLE = 0

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

36000.00ns DEBUG Performance Model   ************* Performance Model / DUT Data **************

36000.00ns DEBUG Performance Model   PC:0xc PC:0xc

36000.00ns DEBUG Performance Model   Register:0: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:1: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:2: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:3: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:4: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:5: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:6: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:7: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:8: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:9: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:10: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:11: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:12: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:13: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:14: 0x0   0x0

36000.00ns DEBUG Performance Model   Register:15: Not checked   0x10

36000.00ns DEBUG Performance Model   *************** Clock cycle: 3 *********************

36000.00ns DEBUG Performance Model   Computer is stalled for this cycle

45000.00ns DEBUG Performance Model   ************ DUT DATAPATH Signals **************

my_datapath.ALUControlE   = 0100

my_datapath.ALUOutM   = 0x00000013

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x00000026

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000002

```
my_datapath.ExtImmE        = 0x00000001
my_datapath.FlushD         = 0
my_datapath.FlushE         = 0
my_datapath.ForwardAE      = 10
my_datapath.ForwardBE      = 10
my_datapath.Funct          = 000000
my_datapath.ImmSrcD        = 00
my_datapath.Inst           = 0x013002
my_datapath.InstructionD   = 0xe0013002
my_datapath.InstructionE   = 0xe0812001
my_datapath.InstructionF   = 0xea000000
my_datapath.L              = 0
my_datapath.MemWriteM      = 0
my_datapath.MemtoRegW      = 0
my_datapath.Op             = 00
my_datapath.PCFetch        = 0x0000000c
my_datapath.PCPlus4D       = 0x0000000c
my_datapath.PCPlus4F       = 0x00000010
my_datapath.PCPlus8D       = 0x00000010
my_datapath.PCSrcW         = 0
my_datapath.PC_NEXT        = 0x00000010
my_datapath.PC_NEXT_NEXT   = 0x00000010
my_datapath.RA1D           = 0001
my_datapath.RA1E           = 0001
my_datapath.RA2D           = 0010
my_datapath.RA2E           = 0001
my_datapath.RD1            = 0x00000000
my_datapath.RD1E           = 0x00000000
my_datapath.RD2            = 0x00000000
my_datapath.RD2E           = 0x00000000
my_datapath.REG_FILE_DATA  = 0x00000000
my_datapath.ROT_VALUE      = 00000000
my_datapath.Rd             = 0011
my_datapath.ReadDataM      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.RegSrcD        = 00
my_datapath.RegWriteW      = 0
my_datapath.ResultW        = 0x00000000
my_datapath.Rm             = 0010
```

my_datapath.Rn   = 0001

my_datapath.SHIFTED_DATA   = 0x00000013

my_datapath.SHIFT_CONTROL = 00

my_datapath.SHIFT_DATA   = 0x00000013

my_datapath.SHIFT_SHAMT   = 00000

my_datapath.SrcAE   = 0x00000013

my_datapath.SrcB   = 0x00000013

my_datapath.SrcBE   = 0x00000013

my_datapath.SrcBEData   = 0x00000013

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0010

my_datapath.WA3M   = 0001

my_datapath.WA3W   = 0000

my_datapath.WriteDataM   = 0x00000000

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG   = 1

my_datapath.Z_OUT   = 0

my_datapath.clk   = 1

my_datapath.reset   = 0

 45000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0000

my_controller.ALUControlE   = 0100

my_controller.ALUSrcD   = 0

my_controller.ALUSrcE   = 0

my_controller.BControl   = 0

my_controller.BranchD   = 0

my_controller.BranchE   = 0

my_controller.BranchTakenE   = 0

my_controller.Cond   = 1110

my_controller.CondE   = 1110

my_controller.CondEx   = 1

my_controller.FlagWriteD   = 01

my_controller.FlagWriteE   = 01

my_controller.FuncControl   = 0

my_controller.Funct   = 000000

my_controller.ImmSrcD   = 00

my_controller.MemWriteD   = 0

my_controller.MemWriteE   = 0

my_controller.MemWriteM   = 0

my_controller.MemtoRegD   = 0

my_controller.MemtoRegE   = 0

my_controller.MemtoRegM   = 0

my_controller.MemtoRegW   = 0

my_controller.Op   = 00

my_controller.PCSrcD   = 0

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 00

my_controller.RegWriteD   = 1

my_controller.RegWriteE   = 1

my_controller.RegWriteM   = 1

my_controller.RegWriteW   = 0

my_controller.Write_Z_ENABLE = 1

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

46000.00ns DEBUG Performance Model	************** Performance Model / DUT Data **************	
46000.00ns DEBUG Performance Model	PC:0x10 PC:0x10	
46000.00ns DEBUG Performance Model	Register:0: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:1: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:2: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:3: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:4: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:5: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:6: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:7: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:8: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:9: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:10: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:11: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:12: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:13: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:14: 0x0 0x0	
46000.00ns DEBUG Performance Model	Register:15: Not checked 0x14	
46000.00ns DEBUG Performance Model	*************** Clock cycle: 4 ********************	
46000.00ns DEBUG Performance Model	Computer is stalled for this cycle	

```
55000.00ns DEBUG   Performance Model          ************ DUT DATAPATH Signals **************

my_datapath.ALUControlE    = 0000

my_datapath.ALUOutM        = 0x00000026

my_datapath.ALUOutW        = 0x00000013

my_datapath.ALUResultE     = 0x00000002

my_datapath.ALUSrcE        = 0

my_datapath.BX             = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond           = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out      = 0x00000000

my_datapath.DestSelect     = 0001

my_datapath.ExtImmD        = 0x00000000

my_datapath.ExtImmE        = 0x00000002

my_datapath.FlushD         = 0

my_datapath.FlushE         = 0

my_datapath.ForwardAE      = 01

my_datapath.ForwardBE      = 10

my_datapath.Funct          = 100000

my_datapath.ImmSrcD        = 10

my_datapath.Inst           = 0x000000

my_datapath.InstructionD   = 0xea000000

my_datapath.InstructionE   = 0xe0013002

my_datapath.InstructionF   = 0x00000000

my_datapath.L              = 0

my_datapath.MemWriteM      = 0

my_datapath.MemtoRegW      = 0

my_datapath.Op             = 10

my_datapath.PCFetch        = 0x00000010

my_datapath.PCPlus4D       = 0x00000010

my_datapath.PCPlus4F       = 0x00000014

my_datapath.PCPlus8D       = 0x00000014

my_datapath.PCSrcW         = 0

my_datapath.PC_NEXT        = 0x00000014

my_datapath.PC_NEXT_NEXT   = 0x00000014

my_datapath.RA1D           = 1111

my_datapath.RA1E           = 0001

my_datapath.RA2D           = 0000

my_datapath.RA2E           = 0010
```

my_datapath.RD1   = 0x00000014

my_datapath.RD1E   = 0x00000000

my_datapath.RD2   = 0x00000000

my_datapath.RD2E   = 0x00000000

my_datapath.REG_FILE_DATA = 0x00000013

my_datapath.ROT_VALUE   = 00000000

my_datapath.Rd   = 0000

my_datapath.ReadDataM   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD   = 01

my_datapath.RegWriteW   = 1

my_datapath.ResultW   = 0x00000013

my_datapath.Rm   = 0000

my_datapath.Rn   = 0000

my_datapath.SHIFTED_DATA   = 0x00000026

my_datapath.SHIFT_CONTROL = 00

my_datapath.SHIFT_DATA   = 0x00000026

my_datapath.SHIFT_SHAMT   = 00000

my_datapath.SrcAE   = 0x00000013

my_datapath.SrcB   = 0x00000026

my_datapath.SrcBE   = 0x00000026

my_datapath.SrcBEData   = 0x00000026

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0011

my_datapath.WA3M   = 0010

my_datapath.WA3W   = 0001

my_datapath.WriteDataM   = 0x00000000

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG   = 0

my_datapath.Z_OUT   = 0

my_datapath.clk   = 1

my_datapath.reset   = 0

 55000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0100

my_controller.ALUControlE   = 0000

my_controller.ALUSrcD   = 1

my_controller.ALUSrcE   = 0

my_controller.BControl   = 1

```
my_controller.BranchD      = 1
my_controller.BranchE      = 0
my_controller.BranchTakenE  = 0
my_controller.Cond         = 1110
my_controller.CondE        = 1110
my_controller.CondEx       = 1
my_controller.FlagWriteD    = 00
my_controller.FlagWriteE    = 01
my_controller.FuncControl   = 0
my_controller.Funct        = 100000
my_controller.ImmSrcD       = 10
my_controller.MemWriteD     = 0
my_controller.MemWriteE     = 0
my_controller.MemWriteM     = 0
my_controller.MemtoRegD     = 0
my_controller.MemtoRegE     = 0
my_controller.MemtoRegM     = 0
my_controller.MemtoRegW     = 0
my_controller.Op           = 10
my_controller.PCSrcD        = 0
my_controller.PCSrcE        = 0
my_controller.PCSrcM        = 0
my_controller.PCSrcW        = 0
my_controller.RegSrcD       = 01
my_controller.RegWriteD     = 0
my_controller.RegWriteE     = 1
my_controller.RegWriteM     = 1
my_controller.RegWriteW     = 1
my_controller.Write_Z_ENABLE = 1
my_controller.Z_FLAG        = 0
my_controller.clk          = 1
my_controller.reset        = 0
```

56000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data **************

56000.00ns DEBUG   Performance Model   PC:0x14   PC:0x14

56000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

56000.00ns DEBUG   Performance Model   Register:2: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:3: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:4: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:5: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:6: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:7: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:8: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

56000.00ns DEBUG   Performance Model   Register:15: Not checked   0x18

56000.00ns DEBUG   Performance Model   *************** Clock cycle: 5 ********************

56000.00ns DEBUG   Performance Model   ****** Current Instruction *********

56000.00ns DEBUG   Performance Model   Binary string:11101010000000000000000000000000

56000.00ns DEBUG   Performance Model   Operation type Branch (except Bx)

56000.00ns DEBUG   Performance Model   Link bit:0

56000.00ns DEBUG   Performance Model   imm24:0

65000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals **************

my_datapath.ALUControlE   = 0100

my_datapath.ALUOutM   = 0x00000002

my_datapath.ALUOutW   = 0x00000026

my_datapath.ALUResultE   = 0x00000014

my_datapath.ALUSrcE   = 1

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 1

my_datapath.Cond   = 0000

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0010

my_datapath.ExtImmD   = 0x00000000

my_datapath.ExtImmE   = 0x00000000

my_datapath.FlushD   = 1

my_datapath.FlushE   = 1

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 000000

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0x000000

my_datapath.InstructionD   = 0x00000000

```
my_datapath.InstructionE   = 0xea000000

my_datapath.InstructionF   = 0xe1a04101

my_datapath.L         = 0

my_datapath.MemWriteM     = 0

my_datapath.MemtoRegW     = 0

my_datapath.Op        = 00

my_datapath.PCFetch      = 0x00000014

my_datapath.PCPlus4D      = 0x00000014

my_datapath.PCPlus4F      = 0x00000018

my_datapath.PCPlus8D      = 0x00000018

my_datapath.PCSrcW      = 0

my_datapath.PC_NEXT      = 0x00000018

my_datapath.PC_NEXT_NEXT   = 0x00000014

my_datapath.RA1D       = 0000

my_datapath.RA1E       = 1111

my_datapath.RA2D       = 0000

my_datapath.RA2E       = 0000

my_datapath.RD1       = 0x00000000

my_datapath.RD1E       = 0x00000014

my_datapath.RD2       = 0x00000000

my_datapath.RD2E       = 0x00000000

my_datapath.REG_FILE_DATA  = 0x00000026

my_datapath.ROT_VALUE     = 00000000

my_datapath.Rd        = 0000

my_datapath.ReadDataM     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD      = 00

my_datapath.RegWriteW     = 1

my_datapath.ResultW      = 0x00000026

my_datapath.Rm        = 0000

my_datapath.Rn        = 0000

my_datapath.SHIFTED_DATA   = 0x00000000

my_datapath.SHIFT_CONTROL  = 11

my_datapath.SHIFT_DATA     = 0x00000000

my_datapath.SHIFT_SHAMT    = 00000

my_datapath.SrcAE       = 0x00000014

my_datapath.SrcB       = 0x00000000

my_datapath.SrcBE       = 0x00000000

my_datapath.SrcBEData     = 0x00000000
```

```
my_datapath.StallD        = 0

my_datapath.StallF        = 0

my_datapath.WA3E          = 0000

my_datapath.WA3M          = 0011

my_datapath.WA3W          = 0010

my_datapath.WriteDataM    = 0x00000000

my_datapath.Write_Z_ENABLE = 0

my_datapath.Z_FLAG        = 0

my_datapath.Z_OUT         = 0

my_datapath.clk           = 1

my_datapath.reset         = 0

 65000.00ns DEBUG    Performance Model          ************ DUT Controller Signals **************

my_controller.ALUControlD    = 0000

my_controller.ALUControlE    = 0100

my_controller.ALUSrcD        = 0

my_controller.ALUSrcE        = 1

my_controller.BControl       = 0

my_controller.BranchD        = 0

my_controller.BranchE        = 1

my_controller.BranchTakenE   = 1

my_controller.Cond           = 0000

my_controller.CondE          = 1110

my_controller.CondEx         = 1

my_controller.FlagWriteD     = 01

my_controller.FlagWriteE     = 00

my_controller.FuncControl    = 0

my_controller.Funct          = 000000

my_controller.ImmSrcD        = 00

my_controller.MemWriteD      = 0

my_controller.MemWriteE      = 0

my_controller.MemWriteM      = 0

my_controller.MemtoRegD      = 0

my_controller.MemtoRegE      = 0

my_controller.MemtoRegM      = 0

my_controller.MemtoRegW      = 0

my_controller.Op             = 00

my_controller.PCSrcD         = 0

my_controller.PCSrcE         = 0

my_controller.PCSrcM         = 0
```

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 00

my_controller.RegWriteD   = 1

my_controller.RegWriteE   = 0

my_controller.RegWriteM   = 1

my_controller.RegWriteW   = 1

my_controller.Write_Z_ENABLE = 0

my_controller.Z_FLAG   = 0

my_controller.clk   = 1

my_controller.reset   = 0

66000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data **************

66000.00ns DEBUG   Performance Model   PC:0x14   PC:0x14

66000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

66000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

66000.00ns DEBUG   Performance Model   Register:3: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:4: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:5: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:6: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:7: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:8: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

66000.00ns DEBUG   Performance Model   Register:15: Not checked   0x18

66000.00ns DEBUG   Performance Model   **************** Clock cycle: 6 *********************

66000.00ns DEBUG   Performance Model   ****** Current Instruction *********

66000.00ns DEBUG   Performance Model   Binary string:11100001101000000100000100000001

66000.00ns DEBUG   Performance Model   Operation type Data Processing

66000.00ns DEBUG   Performance Model   cond:E

66000.00ns DEBUG   Performance Model   Immediate bit:0

66000.00ns DEBUG   Performance Model   cmd:D

66000.00ns DEBUG   Performance Model   Set bit:0

66000.00ns DEBUG   Performance Model   Rn:0   Rd:4

66000.00ns DEBUG   Performance Model   shamt5:2   sh:0   Rm:1

75000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals **************

```
my_datapath.ALUControlE    = 0000

my_datapath.ALUOutM        = 0x00000014

my_datapath.ALUOutW        = 0x00000002

my_datapath.ALUResultE     = 0x00000000

my_datapath.ALUSrcE        = 0

my_datapath.BX             = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond           = 0000

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out      = 0x00000000

my_datapath.DestSelect     = 0011

my_datapath.ExtImmD        = 0x00000000

my_datapath.ExtImmE        = 0x00000000

my_datapath.FlushD         = 0

my_datapath.FlushE         = 0

my_datapath.ForwardAE      = 00

my_datapath.ForwardBE      = 00

my_datapath.Funct          = 000000

my_datapath.ImmSrcD        = 00

my_datapath.Inst           = 0x000000

my_datapath.InstructionD   = 0x00000000

my_datapath.InstructionE   = 0x00000000

my_datapath.InstructionF   = 0xe1a04101

my_datapath.L              = 0

my_datapath.MemWriteM      = 0

my_datapath.MemtoRegW      = 0

my_datapath.Op             = 00

my_datapath.PCFetch        = 0x00000014

my_datapath.PCPlus4D       = 0x00000000

my_datapath.PCPlus4F       = 0x00000018

my_datapath.PCPlus8D       = 0x00000018

my_datapath.PCSrcW         = 0

my_datapath.PC_NEXT        = 0x00000018

my_datapath.PC_NEXT_NEXT   = 0x00000018

my_datapath.RA1D           = 0000

my_datapath.RA1E           = 0000

my_datapath.RA2D           = 0000

my_datapath.RA2E           = 0000

my_datapath.RD1            = 0x00000000
```

my_datapath.RD1E   = 0x00000000

my_datapath.RD2   = 0x00000000

my_datapath.RD2E   = 0x00000000

my_datapath.REG_FILE_DATA = 0x00000002

my_datapath.ROT_VALUE   = 00000000

my_datapath.Rd   = 0000

my_datapath.ReadDataM   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD   = 00

my_datapath.RegWriteW   = 1

my_datapath.ResultW   = 0x00000002

my_datapath.Rm   = 0000

my_datapath.Rn   = 0000

my_datapath.SHIFTED_DATA   = 0x00000000

my_datapath.SHIFT_CONTROL = 00

my_datapath.SHIFT_DATA   = 0x00000000

my_datapath.SHIFT_SHAMT   = 00000

my_datapath.SrcAE   = 0x00000000

my_datapath.SrcB   = 0x00000000

my_datapath.SrcBE   = 0x00000000

my_datapath.SrcBEData   = 0x00000000

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0000

my_datapath.WA3M   = 0000

my_datapath.WA3W   = 0011

my_datapath.WriteDataM   = 0x00000000

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG   = 0

my_datapath.Z_OUT   = 1

my_datapath.clk   = 1

my_datapath.reset   = 0

 75000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0000

my_controller.ALUControlE   = 0000

my_controller.ALUSrcD   = 0

my_controller.ALUSrcE   = 0

my_controller.BControl   = 0

my_controller.BranchD   = 0

```
my_controller.BranchE       = 0
my_controller.BranchTakenE  = 0
my_controller.Cond          = 0000
my_controller.CondE         = 0000
my_controller.CondEx        = 0
my_controller.FlagWriteD     = 01
my_controller.FlagWriteE     = 01
my_controller.FuncControl    = 0
my_controller.Funct          = 000000
my_controller.ImmSrcD        = 00
my_controller.MemWriteD      = 0
my_controller.MemWriteE      = 0
my_controller.MemWriteM      = 0
my_controller.MemtoRegD      = 0
my_controller.MemtoRegE      = 0
my_controller.MemtoRegM      = 0
my_controller.MemtoRegW      = 0
my_controller.Op             = 00
my_controller.PCSrcD         = 0
my_controller.PCSrcE         = 0
my_controller.PCSrcM         = 0
my_controller.PCSrcW         = 0
my_controller.RegSrcD        = 00
my_controller.RegWriteD      = 1
my_controller.RegWriteE      = 1
my_controller.RegWriteM      = 0
my_controller.RegWriteW      = 1
my_controller.Write_Z_ENABLE = 1
my_controller.Z_FLAG         = 0
my_controller.clk            = 1
my_controller.reset          = 0
```

```
76000.00ns DEBUG   Performance Model        ************* Performance Model / DUT Data *************
76000.00ns DEBUG   Performance Model        PC:0x18      PC:0x18
76000.00ns DEBUG   Performance Model        Register:0: 0x0      0x0
76000.00ns DEBUG   Performance Model        Register:1: 0x13     0x13
76000.00ns DEBUG   Performance Model        Register:2: 0x26      0x26
76000.00ns DEBUG   Performance Model        Register:3: 0x2      0x2
76000.00ns DEBUG   Performance Model        Register:4: 0x0      0x0
76000.00ns DEBUG   Performance Model        Register:5: 0x0      0x0
```

76000.00ns DEBUG   Performance Model   Register:6: 0x0   0x0

76000.00ns DEBUG   Performance Model   Register:7: 0x0   0x0

76000.00ns DEBUG   Performance Model   Register:8: 0x0   0x0

76000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

76000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

76000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

76000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

76000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

76000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

76000.00ns DEBUG   Performance Model   Register:15: Not checked   0x1c

76000.00ns DEBUG   Performance Model   **************** Clock cycle: 7 *********************

76000.00ns DEBUG   Performance Model   ****** Current Instruction *********

76000.00ns DEBUG   Performance Model   Binary string:11100000010000010101000100100010

76000.00ns DEBUG   Performance Model   Operation type Data Processing

76000.00ns DEBUG   Performance Model   cond:E

76000.00ns DEBUG   Performance Model   Immediate bit:0

76000.00ns DEBUG   Performance Model   cmd:2

76000.00ns DEBUG   Performance Model   Set bit:0

76000.00ns DEBUG   Performance Model   Rn:1   Rd:5

76000.00ns DEBUG   Performance Model   shamt5:2   sh:1   Rm:2

85000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals ***************

my_datapath.ALUControlE   = 0000

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x00000014

my_datapath.ALUResultE   = 0x00000000

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000001

my_datapath.ExtImmE   = 0x00000000

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 011010

```
my_datapath.ImmSrcD       = 00
my_datapath.Inst          = 0xa04101
my_datapath.InstructionD  = 0xe1a04101
my_datapath.InstructionE  = 0x00000000
my_datapath.InstructionF  = 0xe0415122
my_datapath.L             = 0
my_datapath.MemWriteM     = 0
my_datapath.MemtoRegW     = 0
my_datapath.Op            = 00
my_datapath.PCFetch       = 0x00000018
my_datapath.PCPlus4D      = 0x00000018
my_datapath.PCPlus4F      = 0x0000001c
my_datapath.PCPlus8D      = 0x0000001c
my_datapath.PCSrcW        = 0
my_datapath.PC_NEXT       = 0x0000001c
my_datapath.PC_NEXT_NEXT  = 0x0000001c
my_datapath.RA1D          = 0000
my_datapath.RA1E          = 0000
my_datapath.RA2D          = 0001
my_datapath.RA2E          = 0000
my_datapath.RD1           = 0x00000000
my_datapath.RD1E          = 0x00000000
my_datapath.RD2           = 0x00000013
my_datapath.RD2E          = 0x00000000
my_datapath.REG_FILE_DATA = 0x00000014
my_datapath.ROT_VALUE     = 00000000
my_datapath.Rd            = 0100
my_datapath.ReadDataM     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.RegSrcD       = 00
my_datapath.RegWriteW     = 0
my_datapath.ResultW       = 0x00000014
my_datapath.Rm            = 0001
my_datapath.Rn            = 0000
my_datapath.SHIFTED_DATA  = 0x00000000
my_datapath.SHIFT_CONTROL = 00
my_datapath.SHIFT_DATA    = 0x00000000
my_datapath.SHIFT_SHAMT   = 00000
my_datapath.SrcAE         = 0x00000000
```

```
my_datapath.SrcB          = 0x00000000
my_datapath.SrcBE         = 0x00000000
my_datapath.SrcBEData     = 0x00000000
my_datapath.StallD        = 0
my_datapath.StallF        = 0
my_datapath.WA3E          = 0000
my_datapath.WA3M          = 0000
my_datapath.WA3W          = 0000
my_datapath.WriteDataM    = 0x00000000
my_datapath.Write_Z_ENABLE = 1
my_datapath.Z_FLAG        = 1
my_datapath.Z_OUT         = 1
my_datapath.clk           = 1
my_datapath.reset         = 0
 85000.00ns DEBUG   Performance Model            ************ DUT Controller Signals **************
my_controller.ALUControlD    = 1101
my_controller.ALUControlE    = 0000
my_controller.ALUSrcD        = 0
my_controller.ALUSrcE        = 0
my_controller.BControl       = 0
my_controller.BranchD        = 0
my_controller.BranchE        = 0
my_controller.BranchTakenE   = 0
my_controller.Cond           = 1110
my_controller.CondE          = 0000
my_controller.CondEx         = 0
my_controller.FlagWriteD     = 00
my_controller.FlagWriteE     = 01
my_controller.FuncControl    = 0
my_controller.Funct          = 011010
my_controller.ImmSrcD        = 00
my_controller.MemWriteD      = 0
my_controller.MemWriteE      = 0
my_controller.MemWriteM      = 0
my_controller.MemtoRegD      = 0
my_controller.MemtoRegE      = 0
my_controller.MemtoRegM      = 0
my_controller.MemtoRegW      = 0
my_controller.Op             = 00
```

my_controller.PCSrcD   = 0

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 00

my_controller.RegWriteD   = 1

my_controller.RegWriteE   = 1

my_controller.RegWriteM   = 0

my_controller.RegWriteW   = 0

my_controller.Write_Z_ENABLE = 1

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

86000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data **************

86000.00ns DEBUG   Performance Model   PC:0x1c   PC:0x1c

86000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

86000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

86000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

86000.00ns DEBUG   Performance Model   Register:4: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:5: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:6: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:7: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:8: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

86000.00ns DEBUG   Performance Model   Register:15: Not checked   0x20

86000.00ns DEBUG   Performance Model   *************** Clock cycle: 8 ********************

86000.00ns DEBUG   Performance Model   ****** Current Instruction *********

86000.00ns DEBUG   Performance Model   Binary string:11100001100000110110000101100011

86000.00ns DEBUG   Performance Model   Operation type Data Processing

86000.00ns DEBUG   Performance Model   cond:E

86000.00ns DEBUG   Performance Model   Immediate bit:0

86000.00ns DEBUG   Performance Model   cmd:C

86000.00ns DEBUG   Performance Model   Set bit:0

86000.00ns DEBUG   Performance Model   Rn:3   Rd:6

86000.00ns DEBUG   Performance Model   shamt5:2   sh:3   Rm:3

95000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals **************

my_datapath.ALUControlE   = 1101

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x0000004c

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000022

my_datapath.ExtImmE   = 0x00000001

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 000100

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0x415122

my_datapath.InstructionD   = 0xe0415122

my_datapath.InstructionE   = 0xe1a04101

my_datapath.InstructionF   = 0xe1836163

my_datapath.L   = 0

my_datapath.MemWriteM   = 0

my_datapath.MemtoRegW   = 0

my_datapath.Op   = 00

my_datapath.PCFetch   = 0x0000001c

my_datapath.PCPlus4D   = 0x0000001c

my_datapath.PCPlus4F   = 0x00000020

my_datapath.PCPlus8D   = 0x00000020

my_datapath.PCSrcW   = 0

my_datapath.PC_NEXT   = 0x00000020

my_datapath.PC_NEXT_NEXT   = 0x00000020

my_datapath.RA1D   = 0001

my_datapath.RA1E   = 0000

my_datapath.RA2D   = 0010

my_datapath.RA2E   = 0001

my_datapath.RD1   = 0x00000013

my_datapath.RD1E   = 0x00000000

my_datapath.RD2   = 0x00000026

my_datapath.RD2E   = 0x00000013

my_datapath.REG_FILE_DATA = 0x00000000

my_datapath.ROT_VALUE   = 00100010

my_datapath.Rd   = 0101

my_datapath.ReadDataM   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD   = 00

my_datapath.RegWriteW   = 0

my_datapath.ResultW   = 0x00000000

my_datapath.Rm   = 0010

my_datapath.Rn   = 0001

my_datapath.SHIFTED_DATA   = 0x0000004c

my_datapath.SHIFT_CONTROL = 00

my_datapath.SHIFT_DATA   = 0x00000013

my_datapath.SHIFT_SHAMT   = 00010

my_datapath.SrcAE   = 0x00000000

my_datapath.SrcB   = 0x00000013

my_datapath.SrcBE   = 0x0000004c

my_datapath.SrcBEData   = 0x0000004c

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0100

my_datapath.WA3M   = 0000

my_datapath.WA3W   = 0000

my_datapath.WriteDataM   = 0x00000000

my_datapath.Write_Z_ENABLE = 0

my_datapath.Z_FLAG   = 1

my_datapath.Z_OUT   = 0

my_datapath.clk   = 1

my_datapath.reset   = 0

 95000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0010

my_controller.ALUControlE   = 1101

my_controller.ALUSrcD   = 0

```
my_controller.ALUSrcE        = 0
my_controller.BControl       = 0
my_controller.BranchD        = 0
my_controller.BranchE        = 0
my_controller.BranchTakenE   = 0
my_controller.Cond           = 1110
my_controller.CondE          = 1110
my_controller.CondEx         = 1
my_controller.FlagWriteD     = 01
my_controller.FlagWriteE     = 00
my_controller.FuncControl    = 0
my_controller.Funct          = 000100
my_controller.ImmSrcD        = 00
my_controller.MemWriteD      = 0
my_controller.MemWriteE      = 0
my_controller.MemWriteM      = 0
my_controller.MemtoRegD      = 0
my_controller.MemtoRegE      = 0
my_controller.MemtoRegM      = 0
my_controller.MemtoRegW      = 0
my_controller.Op             = 00
my_controller.PCSrcD         = 0
my_controller.PCSrcE         = 0
my_controller.PCSrcM         = 0
my_controller.PCSrcW         = 0
my_controller.RegSrcD        = 00
my_controller.RegWriteD      = 1
my_controller.RegWriteE      = 1
my_controller.RegWriteM      = 0
my_controller.RegWriteW      = 0
my_controller.Write_Z_ENABLE = 0
my_controller.Z_FLAG         = 1
my_controller.clk            = 1
my_controller.reset          = 0
 96000.00ns DEBUG   Performance Model             ************* Performance Model / DUT Data *************
 96000.00ns DEBUG   Performance Model             PC:0x20       PC:0x20
 96000.00ns DEBUG   Performance Model             Register:0: 0x0       0x0
 96000.00ns DEBUG   Performance Model             Register:1: 0x13      0x13
 96000.00ns DEBUG   Performance Model             Register:2: 0x26      0x26
```

96000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

96000.00ns DEBUG   Performance Model   Register:4: 0x0   0x0

96000.00ns DEBUG   Performance Model   Register:5: 0x0   0x0

96000.00ns DEBUG   Performance Model   Register:6: 0x0   0x0

96000.00ns DEBUG   Performance Model   Register:7: 0x0   0x0

96000.00ns DEBUG   Performance Model   Register:8: 0x0   0x0

96000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

96000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

96000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

96000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

96000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

96000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

96000.00ns DEBUG   Performance Model   Register:15: Not checked   0x24

96000.00ns DEBUG   Performance Model   *************** Clock cycle: 9 ********************

96000.00ns DEBUG   Performance Model   ****** Current Instruction *********

96000.00ns DEBUG   Performance Model   Binary string:11100001101000000111111001000110

96000.00ns DEBUG   Performance Model   Operation type Data Processing

96000.00ns DEBUG   Performance Model   cond:E

96000.00ns DEBUG   Performance Model   Immediate bit:0

96000.00ns DEBUG   Performance Model   cmd:D

96000.00ns DEBUG   Performance Model   Set bit:0

96000.00ns DEBUG   Performance Model   Rn:0   Rd:7

96000.00ns DEBUG   Performance Model   shamt5:28   sh:2   Rm:6

105000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals **************

my_datapath.ALUControlE   = 0010

my_datapath.ALUOutM   = 0x0000004c

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x0000000a

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000063

my_datapath.ExtImmE   = 0x00000022

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 011000

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0x836163

my_datapath.InstructionD   = 0xe1836163

my_datapath.InstructionE   = 0xe0415122

my_datapath.InstructionF   = 0xe1a07e46

my_datapath.L   = 0

my_datapath.MemWriteM   = 0

my_datapath.MemtoRegW   = 0

my_datapath.Op   = 00

my_datapath.PCFetch   = 0x00000020

my_datapath.PCPlus4D   = 0x00000020

my_datapath.PCPlus4F   = 0x00000024

my_datapath.PCPlus8D   = 0x00000024

my_datapath.PCSrcW   = 0

my_datapath.PC_NEXT   = 0x00000024

my_datapath.PC_NEXT_NEXT   = 0x00000024

my_datapath.RA1D   = 0011

my_datapath.RA1E   = 0001

my_datapath.RA2D   = 0011

my_datapath.RA2E   = 0010

my_datapath.RD1   = 0x00000002

my_datapath.RD1E   = 0x00000013

my_datapath.RD2   = 0x00000002

my_datapath.RD2E   = 0x00000026

my_datapath.REG_FILE_DATA   = 0x00000000

my_datapath.ROT_VALUE   = 00100010

my_datapath.Rd   = 0110

my_datapath.ReadDataM   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD   = 00

my_datapath.RegWriteW   = 0

my_datapath.ResultW   = 0x00000000

my_datapath.Rm   = 0011

my_datapath.Rn   = 0011

my_datapath.SHIFTED_DATA   = 0x00000009

my_datapath.SHIFT_CONTROL   = 01

my_datapath.SHIFT_DATA   = 0x00000026

my_datapath.SHIFT_SHAMT   = 00010

my_datapath.SrcAE   = 0x00000013

my_datapath.SrcB   = 0x00000026

my_datapath.SrcBE   = 0x00000009

my_datapath.SrcBEData   = 0x00000009

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0101

my_datapath.WA3M   = 0100

my_datapath.WA3W   = 0000

my_datapath.WriteDataM   = 0x00000013

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG   = 1

my_datapath.Z_OUT   = 0

my_datapath.clk   = 1

my_datapath.reset   = 0

105000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 1100

my_controller.ALUControlE   = 0010

my_controller.ALUSrcD   = 0

my_controller.ALUSrcE   = 0

my_controller.BControl   = 0

my_controller.BranchD   = 0

my_controller.BranchE   = 0

my_controller.BranchTakenE = 0

my_controller.Cond   = 1110

my_controller.CondE   = 1110

my_controller.CondEx   = 1

my_controller.FlagWriteD   = 01

my_controller.FlagWriteE   = 01

my_controller.FuncControl   = 0

my_controller.Funct   = 011000

my_controller.ImmSrcD   = 00

my_controller.MemWriteD   = 0

my_controller.MemWriteE   = 0

my_controller.MemWriteM   = 0

my_controller.MemtoRegD   = 0

my_controller.MemtoRegE   = 0

my_controller.MemtoRegM   = 0

my_controller.MemtoRegW   = 0

my_controller.Op   = 00

my_controller.PCSrcD   = 0

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 00

my_controller.RegWriteD   = 1

my_controller.RegWriteE   = 1

my_controller.RegWriteM   = 1

my_controller.RegWriteW   = 0

my_controller.Write_Z_ENABLE = 1

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

106000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

106000.00ns DEBUG   Performance Model   PC:0x24   PC:0x24

106000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

106000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

106000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

106000.00ns DEBUG   Performance Model   Register:4: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:5: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:6: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:7: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:8: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

106000.00ns DEBUG   Performance Model   Register:15: Not checked   0x28

106000.00ns DEBUG   Performance Model   *************** Clock cycle: 10 ********************

106000.00ns DEBUG   Performance Model   ****** Current Instruction *********

106000.00ns DEBUG   Performance Model   Binary string:11100101100000010010000001010101

106000.00ns DEBUG   Performance Model   Operation type Memory

106000.00ns DEBUG   Performance Model   Load bit:0

106000.00ns DEBUG   Performance Model   Rn:1   Rn:2

106000.00ns DEBUG   Performance Model   imm12:85

115000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals ***************

my_datapath.ALUControlE   = 1100

my_datapath.ALUOutM   = 0x0000000a

my_datapath.ALUOutW   = 0x0000004c

my_datapath.ALUResultE   = 0x80000002

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0100

my_datapath.ExtImmD   = 0x00000046

my_datapath.ExtImmE   = 0x00000063

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 011010

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0xa07e46

my_datapath.InstructionD   = 0xe1a07e46

my_datapath.InstructionE   = 0xe1836163

my_datapath.InstructionF   = 0xe5812055

my_datapath.L   = 0

my_datapath.MemWriteM   = 0

my_datapath.MemtoRegW   = 0

my_datapath.Op   = 00

my_datapath.PCFetch   = 0x00000024

my_datapath.PCPlus4D   = 0x00000024

my_datapath.PCPlus4F   = 0x00000028

my_datapath.PCPlus8D   = 0x00000028

my_datapath.PCSrcW   = 0

my_datapath.PC_NEXT   = 0x00000028

my_datapath.PC_NEXT_NEXT   = 0x00000028

my_datapath.RA1D   = 0000

my_datapath.RA1E   = 0011

my_datapath.RA2D   = 0110

my_datapath.RA2E   = 0011

my_datapath.RD1   = 0x00000000

my_datapath.RD1E   = 0x00000002

my_datapath.RD2   = 0x00000000

my_datapath.RD2E   = 0x00000002

my_datapath.REG_FILE_DATA = 0x0000004c

my_datapath.ROT_VALUE   = 00100010

my_datapath.Rd   = 0111

my_datapath.ReadDataM   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD   = 00

my_datapath.RegWriteW   = 1

my_datapath.ResultW   = 0x0000004c

my_datapath.Rm   = 0110

my_datapath.Rn   = 0000

my_datapath.SHIFTED_DATA   = 0x80000000

my_datapath.SHIFT_CONTROL   = 11

my_datapath.SHIFT_DATA   = 0x00000002

my_datapath.SHIFT_SHAMT   = 00010

my_datapath.SrcAE   = 0x00000002

my_datapath.SrcB   = 0x00000002

my_datapath.SrcBE   = 0x80000000

my_datapath.SrcBEData   = 0x80000000

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0110

my_datapath.WA3M   = 0101

my_datapath.WA3W   = 0100

my_datapath.WriteDataM   = 0x00000026

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG   = 0

my_datapath.Z_OUT   = 0

my_datapath.clk   = 1

my_datapath.reset   = 0

115000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 1101

my_controller.ALUControlE   = 1100

my_controller.ALUSrcD   = 0

```
my_controller.ALUSrcE       = 0
my_controller.BControl      = 0
my_controller.BranchD       = 0
my_controller.BranchE       = 0
my_controller.BranchTakenE  = 0
my_controller.Cond          = 1110
my_controller.CondE         = 1110
my_controller.CondEx        = 1
my_controller.FlagWriteD    = 00
my_controller.FlagWriteE    = 01
my_controller.FuncControl   = 0
my_controller.Funct         = 011010
my_controller.ImmSrcD       = 00
my_controller.MemWriteD     = 0
my_controller.MemWriteE     = 0
my_controller.MemWriteM     = 0
my_controller.MemtoRegD     = 0
my_controller.MemtoRegE     = 0
my_controller.MemtoRegM     = 0
my_controller.MemtoRegW     = 0
my_controller.Op            = 00
my_controller.PCSrcD        = 0
my_controller.PCSrcE        = 0
my_controller.PCSrcM        = 0
my_controller.PCSrcW        = 0
my_controller.RegSrcD       = 00
my_controller.RegWriteD     = 1
my_controller.RegWriteE     = 1
my_controller.RegWriteM     = 1
my_controller.RegWriteW     = 1
my_controller.Write_Z_ENABLE = 1
my_controller.Z_FLAG        = 0
my_controller.clk           = 1
my_controller.reset         = 0
```

116000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************
116000.00ns DEBUG   Performance Model   PC:0x28   PC:0x28
116000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0
116000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13
116000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

116000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

116000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

116000.00ns DEBUG   Performance Model   Register:5: 0x0   0x0

116000.00ns DEBUG   Performance Model   Register:6: 0x0   0x0

116000.00ns DEBUG   Performance Model   Register:7: 0x0   0x0

116000.00ns DEBUG   Performance Model   Register:8: 0x0   0x0

116000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

116000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

116000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

116000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

116000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

116000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

116000.00ns DEBUG   Performance Model   Register:15: Not checked   0x2c

116000.00ns DEBUG   Performance Model   **************** Clock cycle: 11 ********************

116000.00ns DEBUG   Performance Model   ****** Current Instruction *********

116000.00ns DEBUG   Performance Model   Binary string:11100101100100111000000001100110

116000.00ns DEBUG   Performance Model   Operation type Memory

116000.00ns DEBUG   Performance Model   Load bit:1

116000.00ns DEBUG   Performance Model   Rn:3   Rn:8

116000.00ns DEBUG   Performance Model   imm12:102

125000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals ***************

my_datapath.ALUControlE   = 1101

my_datapath.ALUOutM   = 0x80000002

my_datapath.ALUOutW   = 0x0000000a

my_datapath.ALUResultE   = 0xfffffff8

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0101

my_datapath.ExtImmD   = 0x00000055

my_datapath.ExtImmE   = 0x00000046

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 10

my_datapath.Funct   = 011000

```
my_datapath.ImmSrcD        = 01

my_datapath.Inst           = 0x812055

my_datapath.InstructionD   = 0xe5812055

my_datapath.InstructionE   = 0xe1a07e46

my_datapath.InstructionF   = 0xe5938066

my_datapath.L              = 0

my_datapath.MemWriteM      = 0

my_datapath.MemtoRegW      = 0

my_datapath.Op             = 01

my_datapath.PCFetch        = 0x00000028

my_datapath.PCPlus4D       = 0x00000028

my_datapath.PCPlus4F       = 0x0000002c

my_datapath.PCPlus8D       = 0x0000002c

my_datapath.PCSrcW         = 0

my_datapath.PC_NEXT        = 0x0000002c

my_datapath.PC_NEXT_NEXT   = 0x0000002c

my_datapath.RA1D           = 0001

my_datapath.RA1E           = 0000

my_datapath.RA2D           = 0010

my_datapath.RA2E           = 0110

my_datapath.RD1            = 0x00000013

my_datapath.RD1E           = 0x00000000

my_datapath.RD2            = 0x00000026

my_datapath.RD2E           = 0x00000000

my_datapath.REG_FILE_DATA  = 0x0000000a

my_datapath.ROT_VALUE      = 11011100

my_datapath.Rd             = 0010

my_datapath.ReadDataM      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD        = 10

my_datapath.RegWriteW      = 1

my_datapath.ResultW        = 0x0000000a

my_datapath.Rm             = 0101

my_datapath.Rn             = 0001

my_datapath.SHIFTED_DATA   = 0xfffffff8

my_datapath.SHIFT_CONTROL  = 10

my_datapath.SHIFT_DATA     = 0x80000002

my_datapath.SHIFT_SHAMT    = 11100

my_datapath.SrcAE          = 0x00000000
```

my_datapath.SrcB   = 0x80000002

my_datapath.SrcBE   = 0xfffffff8

my_datapath.SrcBEData   = 0xfffffff8

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0111

my_datapath.WA3M   = 0110

my_datapath.WA3W   = 0101

my_datapath.WriteDataM   = 0x00000002

my_datapath.Write_Z_ENABLE = 0

my_datapath.Z_FLAG   = 0

my_datapath.Z_OUT   = 0

my_datapath.clk   = 1

my_datapath.reset   = 0

125000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0100

my_controller.ALUControlE   = 1101

my_controller.ALUSrcD   = 1

my_controller.ALUSrcE   = 0

my_controller.BControl   = 0

my_controller.BranchD   = 0

my_controller.BranchE   = 0

my_controller.BranchTakenE   = 0

my_controller.Cond   = 1110

my_controller.CondE   = 1110

my_controller.CondEx   = 1

my_controller.FlagWriteD   = 00

my_controller.FlagWriteE   = 00

my_controller.FuncControl   = 0

my_controller.Funct   = 011000

my_controller.ImmSrcD   = 01

my_controller.MemWriteD   = 1

my_controller.MemWriteE   = 0

my_controller.MemWriteM   = 0

my_controller.MemtoRegD   = 0

my_controller.MemtoRegE   = 0

my_controller.MemtoRegM   = 0

my_controller.MemtoRegW   = 0

my_controller.Op   = 01

my_controller.PCSrcD = 0

my_controller.PCSrcE = 0

my_controller.PCSrcM = 0

my_controller.PCSrcW = 0

my_controller.RegSrcD = 10

my_controller.RegWriteD = 0

my_controller.RegWriteE = 1

my_controller.RegWriteM = 1

my_controller.RegWriteW = 1

my_controller.Write_Z_ENABLE = 0

my_controller.Z_FLAG = 0

my_controller.clk = 1

my_controller.reset = 0

126000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

126000.00ns DEBUG   Performance Model   PC:0x2c   PC:0x2c

126000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

126000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

126000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

126000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

126000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

126000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

126000.00ns DEBUG   Performance Model   Register:6: 0x0   0x0

126000.00ns DEBUG   Performance Model   Register:7: 0x0   0x0

126000.00ns DEBUG   Performance Model   Register:8: 0x0   0x0

126000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

126000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

126000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

126000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

126000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

126000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

126000.00ns DEBUG   Performance Model   Register:15: Not checked   0x30

126000.00ns DEBUG   Performance Model   *************** Clock cycle: 12 ********************

126000.00ns DEBUG   Performance Model   Computer is stalled for this cycle

135000.00ns DEBUG   Performance Model   ************* DUT DATAPATH Signals ***************

my_datapath.ALUControlE = 0100

my_datapath.ALUOutM = 0xfffffff8

my_datapath.ALUOutW = 0x80000002

my_datapath.ALUResultE = 0x00000068

my_datapath.ALUSrcE = 1

```
my_datapath.BX           = 0
my_datapath.BranchTakenE    = 0
my_datapath.Cond         = 1110
my_datapath.Debug_Source_select= zzzz
my_datapath.Debug_out     = 0x00000000
my_datapath.DestSelect    = 0110
my_datapath.ExtImmD       = 0x00000066
my_datapath.ExtImmE       = 0x00000055
my_datapath.FlushD        = 0
my_datapath.FlushE        = 0
my_datapath.ForwardAE     = 00
my_datapath.ForwardBE     = 00
my_datapath.Funct         = 011001
my_datapath.ImmSrcD       = 01
my_datapath.Inst          = 0x938066
my_datapath.InstructionD   = 0xe5938066
my_datapath.InstructionE   = 0xe5812055
my_datapath.InstructionF   = 0xe1520008
my_datapath.L             = 0
my_datapath.MemWriteM     = 0
my_datapath.MemtoRegW     = 0
my_datapath.Op            = 01
my_datapath.PCFetch       = 0x0000002c
my_datapath.PCPlus4D      = 0x0000002c
my_datapath.PCPlus4F      = 0x00000030
my_datapath.PCPlus8D      = 0x00000030
my_datapath.PCSrcW        = 0
my_datapath.PC_NEXT       = 0x00000030
my_datapath.PC_NEXT_NEXT   = 0x00000030
my_datapath.RA1D          = 0011
my_datapath.RA1E          = 0001
my_datapath.RA2D          = 0110
my_datapath.RA2E          = 0010
my_datapath.RD1           = 0x00000002
my_datapath.RD1E          = 0x00000013
my_datapath.RD2           = 0x00000000
my_datapath.RD2E          = 0x00000026
my_datapath.REG_FILE_DATA  = 0x80000002
my_datapath.ROT_VALUE     = 00000000
```

```
my_datapath.Rd            = 1000
my_datapath.ReadDataM     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.RegSrcD       = 00
my_datapath.RegWriteW     = 1
my_datapath.ResultW       = 0x80000002
my_datapath.Rm            = 0110
my_datapath.Rn            = 0011
my_datapath.SHIFTED_DATA  = 0x00000026
my_datapath.SHIFT_CONTROL = 10
my_datapath.SHIFT_DATA    = 0x00000026
my_datapath.SHIFT_SHAMT   = 00000
my_datapath.SrcAE         = 0x00000013
my_datapath.SrcB          = 0x00000026
my_datapath.SrcBE         = 0x00000055
my_datapath.SrcBEData     = 0x00000026
my_datapath.StallD        = 0
my_datapath.StallF        = 0
my_datapath.WA3E          = 0010
my_datapath.WA3M          = 0111
my_datapath.WA3W          = 0110
my_datapath.WriteDataM    = 0x00000000
my_datapath.Write_Z_ENABLE = 0
my_datapath.Z_FLAG        = 0
my_datapath.Z_OUT         = 0
my_datapath.clk           = 1
my_datapath.reset         = 0
135000.00ns DEBUG   Performance Model          ************ DUT Controller Signals **************
my_controller.ALUControlD  = 0100
my_controller.ALUControlE  = 0100
my_controller.ALUSrcD      = 1
my_controller.ALUSrcE      = 1
my_controller.BControl     = 0
my_controller.BranchD      = 0
my_controller.BranchE      = 0
my_controller.BranchTakenE = 0
my_controller.Cond         = 1110
my_controller.CondE        = 1110
my_controller.CondEx       = 1
```

my_controller.FlagWriteD   = 00

my_controller.FlagWriteE   = 00

my_controller.FuncControl   = 0

my_controller.Funct   = 011001

my_controller.ImmSrcD   = 01

my_controller.MemWriteD   = 0

my_controller.MemWriteE   = 1

my_controller.MemWriteM   = 0

my_controller.MemtoRegD   = 1

my_controller.MemtoRegE   = 0

my_controller.MemtoRegM   = 0

my_controller.MemtoRegW   = 0

my_controller.Op   = 01

my_controller.PCSrcD   = 0

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 00

my_controller.RegWriteD   = 1

my_controller.RegWriteE   = 0

my_controller.RegWriteM   = 1

my_controller.RegWriteW   = 1

my_controller.Write_Z_ENABLE = 0

my_controller.Z_FLAG   = 0

my_controller.clk   = 1

my_controller.reset   = 0

136000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

136000.00ns DEBUG   Performance Model   PC:0x30   PC:0x30

136000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

136000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

136000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

136000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

136000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

136000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

136000.00ns DEBUG   Performance Model   Register:6: 0x80000002 0x80000002

136000.00ns DEBUG   Performance Model   Register:7: 0x0   0x0

136000.00ns DEBUG   Performance Model   Register:8: 0x0   0x0

136000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

136000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

136000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

136000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

136000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

136000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

136000.00ns DEBUG   Performance Model   Register:15: Not checked   0x34

136000.00ns DEBUG   Performance Model   **************** Clock cycle: 13 ********************

136000.00ns DEBUG   Performance Model   ****** Current Instruction *********

136000.00ns DEBUG   Performance Model   Binary string:11100001010100100000000000001000

136000.00ns DEBUG   Performance Model   Operation type Data Processing

136000.00ns DEBUG   Performance Model   cond:E

136000.00ns DEBUG   Performance Model   Immediate bit:0

136000.00ns DEBUG   Performance Model   cmd:A

136000.00ns DEBUG   Performance Model   Set bit:1

136000.00ns DEBUG   Performance Model   Rn:2   Rd:0

136000.00ns DEBUG   Performance Model   shamt5:0   sh:0   Rm:8

145000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals ***************

my_datapath.ALUControlE   = 0100

my_datapath.ALUOutM   = 0x00000068

my_datapath.ALUOutW   = 0xfffffff8

my_datapath.ALUResultE   = 0x00000068

my_datapath.ALUSrcE   = 1

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0111

my_datapath.ExtImmD   = 0x00000008

my_datapath.ExtImmE   = 0x00000066

my_datapath.FlushD   = 0

my_datapath.FlushE   = 1

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 010101

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0x520008

my_datapath.InstructionD   = 0xe1520008

my_datapath.InstructionE   = 0xe5938066

my_datapath.InstructionF   = 0x1a000012

```
my_datapath.L              = 0
my_datapath.MemWriteM      = 1
my_datapath.MemtoRegW      = 0
my_datapath.Op             = 00
my_datapath.PCFetch        = 0x00000030
my_datapath.PCPlus4D       = 0x00000030
my_datapath.PCPlus4F       = 0x00000034
my_datapath.PCPlus8D       = 0x00000034
my_datapath.PCSrcW         = 0
my_datapath.PC_NEXT        = 0x00000034
my_datapath.PC_NEXT_NEXT   = 0x00000034
my_datapath.RA1D           = 0010
my_datapath.RA1E           = 0011
my_datapath.RA2D           = 1000
my_datapath.RA2E           = 0110
my_datapath.RD1            = 0x00000026
my_datapath.RD1E           = 0x00000002
my_datapath.RD2            = 0x00000000
my_datapath.RD2E           = 0x00000000
my_datapath.REG_FILE_DATA  = 0xfffffff8
my_datapath.ROT_VALUE      = 00000000
my_datapath.Rd             = 0000
my_datapath.ReadDataM      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.RegSrcD        = 00
my_datapath.RegWriteW      = 1
my_datapath.ResultW        = 0xfffffff8
my_datapath.Rm             = 1000
my_datapath.Rn             = 0010
my_datapath.SHIFTED_DATA   = 0x00000000
my_datapath.SHIFT_CONTROL  = 11
my_datapath.SHIFT_DATA     = 0x00000000
my_datapath.SHIFT_SHAMT    = 00000
my_datapath.SrcAE          = 0x00000002
my_datapath.SrcB           = 0x00000000
my_datapath.SrcBE          = 0x00000066
my_datapath.SrcBEData      = 0x00000000
my_datapath.StallD         = 1
my_datapath.StallF         = 1
```

my_datapath.WA3E   = 1000

my_datapath.WA3M   = 0010

my_datapath.WA3W   = 0111

my_datapath.WriteDataM   = 0x00000026

my_datapath.Write_Z_ENABLE = 0

my_datapath.Z_FLAG   = 0

my_datapath.Z_OUT   = 0

my_datapath.clk   = 1

my_datapath.reset   = 0

145000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0010

my_controller.ALUControlE   = 0100

my_controller.ALUSrcD   = 0

my_controller.ALUSrcE   = 1

my_controller.BControl   = 0

my_controller.BranchD   = 0

my_controller.BranchE   = 0

my_controller.BranchTakenE   = 0

my_controller.Cond   = 1110

my_controller.CondE   = 1110

my_controller.CondEx   = 1

my_controller.FlagWriteD   = 01

my_controller.FlagWriteE   = 00

my_controller.FuncControl   = 0

my_controller.Funct   = 010101

my_controller.ImmSrcD   = 00

my_controller.MemWriteD   = 0

my_controller.MemWriteE   = 0

my_controller.MemWriteM   = 1

my_controller.MemtoRegD   = 0

my_controller.MemtoRegE   = 1

my_controller.MemtoRegM   = 0

my_controller.MemtoRegW   = 0

my_controller.Op   = 00

my_controller.PCSrcD   = 0

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 00

my_controller.RegWriteD = 0

my_controller.RegWriteE = 1

my_controller.RegWriteM = 0

my_controller.RegWriteW = 1

my_controller.Write_Z_ENABLE = 0

my_controller.Z_FLAG = 0

my_controller.clk = 1

my_controller.reset = 0

146000.00ns DEBUG Performance Model   ************* Performance Model / DUT Data *************

146000.00ns DEBUG Performance Model   PC:0x30   PC:0x30

146000.00ns DEBUG Performance Model   Register:0: 0x0   0x0

146000.00ns DEBUG Performance Model   Register:1: 0x13   0x13

146000.00ns DEBUG Performance Model   Register:2: 0x26   0x26

146000.00ns DEBUG Performance Model   Register:3: 0x2   0x2

146000.00ns DEBUG Performance Model   Register:4: 0x4c   0x4c

146000.00ns DEBUG Performance Model   Register:5: 0xa   0xa

146000.00ns DEBUG Performance Model   Register:6: 0x80000002 0x80000002

146000.00ns DEBUG Performance Model   Register:7: 0xfffffff8 0xfffffff8

146000.00ns DEBUG Performance Model   Register:8: 0x0   0x0

146000.00ns DEBUG Performance Model   Register:9: 0x0   0x0

146000.00ns DEBUG Performance Model   Register:10: 0x0   0x0

146000.00ns DEBUG Performance Model   Register:11: 0x0   0x0

146000.00ns DEBUG Performance Model   Register:12: 0x0   0x0

146000.00ns DEBUG Performance Model   Register:13: 0x0   0x0

146000.00ns DEBUG Performance Model   Register:14: 0x0   0x0

146000.00ns DEBUG Performance Model   Register:15: Not checked   0x34

146000.00ns DEBUG Performance Model   *************** Clock cycle: 14 *********************

146000.00ns DEBUG Performance Model   ****** Current Instruction *********

146000.00ns DEBUG Performance Model   Binary string:00011010000000000000000000010010

146000.00ns DEBUG Performance Model   Operation type Branch (except Bx)

146000.00ns DEBUG Performance Model   Link bit:0

146000.00ns DEBUG Performance Model   imm24:18

155000.00ns DEBUG Performance Model   ************* DUT DATAPATH Signals **************

my_datapath.ALUControlE = 0010

my_datapath.ALUOutM = 0x00000068

my_datapath.ALUOutW = 0x00000068

my_datapath.ALUResultE = 0x00000000

my_datapath.ALUSrcE = 0

my_datapath.BX = 0

my_datapath.BranchTakenE = 0

my_datapath.Cond = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out = 0x00000000

my_datapath.DestSelect = 0010

my_datapath.ExtImmD = 0x00000008

my_datapath.ExtImmE = 0x00000008

my_datapath.FlushD = 0

my_datapath.FlushE = 0

my_datapath.ForwardAE = 00

my_datapath.ForwardBE = 00

my_datapath.Funct = 010101

my_datapath.ImmSrcD = 00

my_datapath.Inst = 0x520008

my_datapath.InstructionD = 0xe1520008

my_datapath.InstructionE = 0x00000000

my_datapath.InstructionF = 0x1a000012

my_datapath.L = 0

my_datapath.MemWriteM = 0

my_datapath.MemtoRegW = 0

my_datapath.Op = 00

my_datapath.PCFetch = 0x00000030

my_datapath.PCPlus4D = 0x00000030

my_datapath.PCPlus4F = 0x00000034

my_datapath.PCPlus8D = 0x00000034

my_datapath.PCSrcW = 0

my_datapath.PC_NEXT = 0x00000034

my_datapath.PC_NEXT_NEXT = 0x00000034

my_datapath.RA1D = 0010

my_datapath.RA1E = 0000

my_datapath.RA2D = 1000

my_datapath.RA2E = 0000

my_datapath.RD1 = 0x00000026

my_datapath.RD1E = 0x00000000

my_datapath.RD2 = 0x00000000

my_datapath.RD2E = 0x00000000

my_datapath.REG_FILE_DATA = 0x00000068

my_datapath.ROT_VALUE = 00000000

my_datapath.Rd = 0000

```
my_datapath.ReadDataM      = 0x00000026

my_datapath.ReadDataW      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD        = 00

my_datapath.RegWriteW      = 0

my_datapath.ResultW        = 0x00000068

my_datapath.Rm             = 1000

my_datapath.Rn             = 0010

my_datapath.SHIFTED_DATA   = 0x00000000

my_datapath.SHIFT_CONTROL  = 00

my_datapath.SHIFT_DATA     = 0x00000000

my_datapath.SHIFT_SHAMT    = 00000

my_datapath.SrcAE          = 0x00000000

my_datapath.SrcB           = 0x00000000

my_datapath.SrcBE          = 0x00000000

my_datapath.SrcBEData      = 0x00000000

my_datapath.StallD         = 0

my_datapath.StallF         = 0

my_datapath.WA3E           = 0000

my_datapath.WA3M           = 1000

my_datapath.WA3W           = 0010

my_datapath.WriteDataM     = 0x00000000

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG         = 0

my_datapath.Z_OUT          = 1

my_datapath.clk            = 1

my_datapath.reset          = 0

155000.00ns DEBUG    Performance Model              ************ DUT Controller Signals **************

my_controller.ALUControlD  = 0010

my_controller.ALUControlE  = 0010

my_controller.ALUSrcD      = 0

my_controller.ALUSrcE      = 0

my_controller.BControl     = 0

my_controller.BranchD      = 0

my_controller.BranchE      = 0

my_controller.BranchTakenE = 0

my_controller.Cond         = 1110

my_controller.CondE        = 1110

my_controller.CondEx       = 1

my_controller.FlagWriteD   = 01
```

```
my_controller.FlagWriteE     = 01
my_controller.FuncControl    = 0
my_controller.Funct          = 010101
my_controller.ImmSrcD        = 00
my_controller.MemWriteD      = 0
my_controller.MemWriteE      = 0
my_controller.MemWriteM      = 0
my_controller.MemtoRegD      = 0
my_controller.MemtoRegE      = 0
my_controller.MemtoRegM      = 1
my_controller.MemtoRegW      = 0
my_controller.Op             = 00
my_controller.PCSrcD         = 0
my_controller.PCSrcE         = 0
my_controller.PCSrcM         = 0
my_controller.PCSrcW         = 0
my_controller.RegSrcD        = 00
my_controller.RegWriteD      = 0
my_controller.RegWriteE      = 0
my_controller.RegWriteM      = 1
my_controller.RegWriteW      = 0
my_controller.Write_Z_ENABLE = 1
my_controller.Z_FLAG         = 0
my_controller.clk            = 1
my_controller.reset          = 0
156000.00ns DEBUG   Performance Model          ************* Performance Model / DUT Data *************
156000.00ns DEBUG   Performance Model          PC:0x34      PC:0x34
156000.00ns DEBUG   Performance Model          Register:0: 0x0       0x0
156000.00ns DEBUG   Performance Model          Register:1: 0x13      0x13
156000.00ns DEBUG   Performance Model          Register:2: 0x26      0x26
156000.00ns DEBUG   Performance Model          Register:3: 0x2       0x2
156000.00ns DEBUG   Performance Model          Register:4: 0x4c      0x4c
156000.00ns DEBUG   Performance Model          Register:5: 0xa       0xa
156000.00ns DEBUG   Performance Model          Register:6: 0x80000002  0x80000002
156000.00ns DEBUG   Performance Model          Register:7: 0xfffffff8  0xfffffff8
156000.00ns DEBUG   Performance Model          Register:8: 0x0       0x0
156000.00ns DEBUG   Performance Model          Register:9: 0x0       0x0
156000.00ns DEBUG   Performance Model          Register:10: 0x0       0x0
156000.00ns DEBUG   Performance Model          Register:11: 0x0       0x0
```

156000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

156000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

156000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

156000.00ns DEBUG   Performance Model   Register:15: Not checked   0x38

156000.00ns DEBUG   Performance Model   **************** Clock cycle: 15 ********************

156000.00ns DEBUG   Performance Model   Computer is stalled for this cycle

165000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals **************

my_datapath.ALUControlE   = 0010

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x00000068

my_datapath.ALUResultE   = 0x00000000

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 0001

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 1000

my_datapath.ExtImmD   = 0x00000048

my_datapath.ExtImmE   = 0x00000008

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 01

my_datapath.Funct   = 100000

my_datapath.ImmSrcD   = 10

my_datapath.Inst   = 0x000012

my_datapath.InstructionD   = 0x1a000012

my_datapath.InstructionE   = 0xe1520008

my_datapath.InstructionF   = 0x0a000000

my_datapath.L   = 0

my_datapath.MemWriteM   = 0

my_datapath.MemtoRegW   = 1

my_datapath.Op   = 10

my_datapath.PCFetch   = 0x00000034

my_datapath.PCPlus4D   = 0x00000034

my_datapath.PCPlus4F   = 0x00000038

my_datapath.PCPlus8D   = 0x00000038

my_datapath.PCSrcW   = 0

```
my_datapath.PC_NEXT       = 0x00000038
my_datapath.PC_NEXT_NEXT   = 0x00000038
my_datapath.RA1D         = 1111
my_datapath.RA1E         = 0010
my_datapath.RA2D         = 0010
my_datapath.RA2E         = 1000
my_datapath.RD1          = 0x00000038
my_datapath.RD1E         = 0x00000026
my_datapath.RD2          = 0x00000026
my_datapath.RD2E         = 0x00000000
my_datapath.REG_FILE_DATA  = 0x00000026
my_datapath.ROT_VALUE     = 00000000
my_datapath.Rd          = 0000
my_datapath.ReadDataM      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW     = 0x00000026
my_datapath.RegSrcD       = 01
my_datapath.RegWriteW     = 1
my_datapath.ResultW       = 0x00000026
my_datapath.Rm          = 0010
my_datapath.Rn          = 0000
my_datapath.SHIFTED_DATA   = 0x00000026
my_datapath.SHIFT_CONTROL  = 00
my_datapath.SHIFT_DATA     = 0x00000026
my_datapath.SHIFT_SHAMT     = 00000
my_datapath.SrcAE         = 0x00000026
my_datapath.SrcB         = 0x00000026
my_datapath.SrcBE         = 0x00000026
my_datapath.SrcBEData      = 0x00000026
my_datapath.StallD        = 0
my_datapath.StallF        = 0
my_datapath.WA3E         = 0000
my_datapath.WA3M          = 0000
my_datapath.WA3W          = 1000
my_datapath.WriteDataM     = 0x00000000
my_datapath.Write_Z_ENABLE = 1
my_datapath.Z_FLAG        = 1
my_datapath.Z_OUT         = 1
my_datapath.clk          = 1
my_datapath.reset         = 0
```

165000.00ns DEBUG   Performance Model   ************ DUT Controller Signals ***************

my_controller.ALUControlD   = 0100

my_controller.ALUControlE   = 0010

my_controller.ALUSrcD   = 1

my_controller.ALUSrcE   = 0

my_controller.BControl   = 1

my_controller.BranchD   = 1

my_controller.BranchE   = 0

my_controller.BranchTakenE   = 0

my_controller.Cond   = 0001

my_controller.CondE   = 1110

my_controller.CondEx   = 1

my_controller.FlagWriteD   = 00

my_controller.FlagWriteE   = 01

my_controller.FuncControl   = 0

my_controller.Funct   = 100000

my_controller.ImmSrcD   = 10

my_controller.MemWriteD   = 0

my_controller.MemWriteE   = 0

my_controller.MemWriteM   = 0

my_controller.MemtoRegD   = 0

my_controller.MemtoRegE   = 0

my_controller.MemtoRegM   = 0

my_controller.MemtoRegW   = 1

my_controller.Op   = 10

my_controller.PCSrcD   = 0

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 01

my_controller.RegWriteD   = 0

my_controller.RegWriteE   = 0

my_controller.RegWriteM   = 0

my_controller.RegWriteW   = 1

my_controller.Write_Z_ENABLE = 1

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

166000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data **************

166000.00ns DEBUG   Performance Model   PC:0x38   PC:0x38

166000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

166000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

166000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

166000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

166000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

166000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

166000.00ns DEBUG   Performance Model   Register:6: 0x80000002 0x80000002

166000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8 0xfffffff8

166000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

166000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

166000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

166000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

166000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

166000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

166000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

166000.00ns DEBUG   Performance Model   Register:15: Not checked   0x3c

166000.00ns DEBUG   Performance Model   *************** Clock cycle: 16 ********************

166000.00ns DEBUG   Performance Model   Computer is stalled for this cycle

175000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals **************

my_datapath.ALUControlE   = 0100

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x00000080

my_datapath.ALUSrcE   = 1

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 0000

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000000

my_datapath.ExtImmE   = 0x00000048

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 100000

my_datapath.ImmSrcD   = 10

```
my_datapath.Inst          = 0x000000
my_datapath.InstructionD  = 0x0a000000
my_datapath.InstructionE  = 0x1a000012
my_datapath.InstructionF  = 0x00000000
my_datapath.L             = 0
my_datapath.MemWriteM      = 0
my_datapath.MemtoRegW      = 0
my_datapath.Op            = 10
my_datapath.PCFetch       = 0x00000038
my_datapath.PCPlus4D       = 0x00000038
my_datapath.PCPlus4F       = 0x0000003c
my_datapath.PCPlus8D       = 0x0000003c
my_datapath.PCSrcW         = 0
my_datapath.PC_NEXT        = 0x0000003c
my_datapath.PC_NEXT_NEXT   = 0x0000003c
my_datapath.RA1D          = 1111
my_datapath.RA1E          = 1111
my_datapath.RA2D           = 0000
my_datapath.RA2E           = 0010
my_datapath.RD1            = 0x0000003c
my_datapath.RD1E           = 0x00000038
my_datapath.RD2            = 0x00000000
my_datapath.RD2E           = 0x00000026
my_datapath.REG_FILE_DATA  = 0x00000000
my_datapath.ROT_VALUE      = 00000000
my_datapath.Rd            = 0000
my_datapath.ReadDataM      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.RegSrcD        = 01
my_datapath.RegWriteW      = 0
my_datapath.ResultW        = 0x00000000
my_datapath.Rm            = 0000
my_datapath.Rn            = 0000
my_datapath.SHIFTED_DATA   = 0x00000012
my_datapath.SHIFT_CONTROL  = 11
my_datapath.SHIFT_DATA     = 0x00000012
my_datapath.SHIFT_SHAMT    = 00000
my_datapath.SrcAE          = 0x00000038
my_datapath.SrcB           = 0x00000026
```

```
my_datapath.SrcBE        = 0x00000048

my_datapath.SrcBEData    = 0x00000012

my_datapath.StallD       = 0

my_datapath.StallF       = 0

my_datapath.WA3E         = 0000

my_datapath.WA3M         = 0000

my_datapath.WA3W         = 0000

my_datapath.WriteDataM   = 0x00000000

my_datapath.Write_Z_ENABLE = 0

my_datapath.Z_FLAG       = 1

my_datapath.Z_OUT        = 0

my_datapath.clk          = 1

my_datapath.reset        = 0

175000.00ns DEBUG   Performance Model          ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0100

my_controller.ALUControlE   = 0100

my_controller.ALUSrcD       = 1

my_controller.ALUSrcE       = 1

my_controller.BControl      = 1

my_controller.BranchD       = 1

my_controller.BranchE       = 1

my_controller.BranchTakenE  = 0

my_controller.Cond          = 0000

my_controller.CondE         = 0001

my_controller.CondEx        = 0

my_controller.FlagWriteD    = 00

my_controller.FlagWriteE    = 00

my_controller.FuncControl   = 0

my_controller.Funct         = 100000

my_controller.ImmSrcD       = 10

my_controller.MemWriteD     = 0

my_controller.MemWriteE     = 0

my_controller.MemWriteM     = 0

my_controller.MemtoRegD     = 0

my_controller.MemtoRegE     = 0

my_controller.MemtoRegM     = 0

my_controller.MemtoRegW     = 0

my_controller.Op            = 10

my_controller.PCSrcD        = 0
```

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 01

my_controller.RegWriteD   = 0

my_controller.RegWriteE   = 0

my_controller.RegWriteM   = 0

my_controller.RegWriteW   = 0

my_controller.Write_Z_ENABLE = 0

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

176000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

176000.00ns DEBUG   Performance Model   PC:0x3c   PC:0x3c

176000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

176000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

176000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

176000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

176000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

176000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

176000.00ns DEBUG   Performance Model   Register:6: 0x80000002 0x80000002

176000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8 0xfffffff8

176000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

176000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

176000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

176000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

176000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

176000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

176000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

176000.00ns DEBUG   Performance Model   Register:15: Not checked   0x40

176000.00ns DEBUG   Performance Model   *************** Clock cycle: 17 *********************

176000.00ns DEBUG   Performance Model   ****** Current Instruction *********

176000.00ns DEBUG   Performance Model   Binary string:00001010000000000000000000000000

176000.00ns DEBUG   Performance Model   Operation type Branch (except Bx)

176000.00ns DEBUG   Performance Model   Link bit:0

176000.00ns DEBUG   Performance Model   imm24:0

185000.00ns DEBUG   Performance Model   ************* DUT DATAPATH Signals *************

my_datapath.ALUControlE   = 0100

my_datapath.ALUOutM   = 0x00000080

```
my_datapath.ALUOutW        = 0x00000000

my_datapath.ALUResultE     = 0x0000003c

my_datapath.ALUSrcE        = 1

my_datapath.BX             = 0

my_datapath.BranchTakenE   = 1

my_datapath.Cond           = 0000

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out      = 0x00000000

my_datapath.DestSelect     = 0000

my_datapath.ExtImmD        = 0x00000000

my_datapath.ExtImmE        = 0x00000000

my_datapath.FlushD         = 1

my_datapath.FlushE         = 1

my_datapath.ForwardAE      = 00

my_datapath.ForwardBE      = 00

my_datapath.Funct          = 000000

my_datapath.ImmSrcD        = 00

my_datapath.Inst           = 0x000000

my_datapath.InstructionD   = 0x00000000

my_datapath.InstructionE   = 0x0a000000

my_datapath.InstructionF   = 0xeb000002

my_datapath.L              = 0

my_datapath.MemWriteM      = 0

my_datapath.MemtoRegW      = 0

my_datapath.Op             = 00

my_datapath.PCFetch        = 0x0000003c

my_datapath.PCPlus4D       = 0x0000003c

my_datapath.PCPlus4F       = 0x00000040

my_datapath.PCPlus8D       = 0x00000040

my_datapath.PCSrcW         = 0

my_datapath.PC_NEXT        = 0x00000040

my_datapath.PC_NEXT_NEXT   = 0x0000003c

my_datapath.RA1D           = 0000

my_datapath.RA1E           = 1111

my_datapath.RA2D           = 0000

my_datapath.RA2E           = 0000

my_datapath.RD1            = 0x00000000

my_datapath.RD1E           = 0x0000003c

my_datapath.RD2            = 0x00000000
```

```
my_datapath.RD2E           = 0x00000000

my_datapath.REG_FILE_DATA  = 0x00000000

my_datapath.ROT_VALUE      = 00000000

my_datapath.Rd             = 0000

my_datapath.ReadDataM      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD        = 00

my_datapath.RegWriteW      = 0

my_datapath.ResultW        = 0x00000000

my_datapath.Rm             = 0000

my_datapath.Rn             = 0000

my_datapath.SHIFTED_DATA   = 0x00000000

my_datapath.SHIFT_CONTROL  = 11

my_datapath.SHIFT_DATA     = 0x00000000

my_datapath.SHIFT_SHAMT    = 00000

my_datapath.SrcAE          = 0x0000003c

my_datapath.SrcB           = 0x00000000

my_datapath.SrcBE          = 0x00000000

my_datapath.SrcBEData      = 0x00000000

my_datapath.StallD         = 0

my_datapath.StallF         = 0

my_datapath.WA3E           = 0000

my_datapath.WA3M           = 0000

my_datapath.WA3W           = 0000

my_datapath.WriteDataM     = 0x00000026

my_datapath.Write_Z_ENABLE = 0

my_datapath.Z_FLAG         = 1

my_datapath.Z_OUT          = 0

my_datapath.clk            = 1

my_datapath.reset          = 0

185000.00ns DEBUG   Performance Model            ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0000

my_controller.ALUControlE   = 0100

my_controller.ALUSrcD       = 0

my_controller.ALUSrcE       = 1

my_controller.BControl      = 0

my_controller.BranchD       = 0

my_controller.BranchE       = 1

my_controller.BranchTakenE  = 1
```

```
my_controller.Cond        = 0000
my_controller.CondE       = 0000
my_controller.CondEx      = 1
my_controller.FlagWriteD  = 01
my_controller.FlagWriteE  = 00
my_controller.FuncControl = 0
my_controller.Funct       = 000000
my_controller.ImmSrcD     = 00
my_controller.MemWriteD   = 0
my_controller.MemWriteE   = 0
my_controller.MemWriteM   = 0
my_controller.MemtoRegD   = 0
my_controller.MemtoRegE   = 0
my_controller.MemtoRegM   = 0
my_controller.MemtoRegW   = 0
my_controller.Op          = 00
my_controller.PCSrcD      = 0
my_controller.PCSrcE      = 0
my_controller.PCSrcM      = 0
my_controller.PCSrcW      = 0
my_controller.RegSrcD     = 00
my_controller.RegWriteD   = 1
my_controller.RegWriteE   = 0
my_controller.RegWriteM   = 0
my_controller.RegWriteW   = 0
my_controller.Write_Z_ENABLE = 0
my_controller.Z_FLAG      = 1
my_controller.clk         = 1
my_controller.reset       = 0
```

186000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

186000.00ns DEBUG   Performance Model   PC:0x3c   PC:0x3c

186000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

186000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

186000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

186000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

186000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

186000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

186000.00ns DEBUG   Performance Model   Register:6: 0x80000002   0x80000002

186000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8   0xfffffff8

186000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

186000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

186000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

186000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

186000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

186000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

186000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

186000.00ns DEBUG   Performance Model   Register:15: Not checked   0x40

186000.00ns DEBUG   Performance Model   **************** Clock cycle: 18 ********************

186000.00ns DEBUG   Performance Model   Computer is stalled for this cycle

195000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals ***************

my_datapath.ALUControlE   = 0000

my_datapath.ALUOutM   = 0x0000003c

my_datapath.ALUOutW   = 0x00000080

my_datapath.ALUResultE   = 0x00000000

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 0000

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000000

my_datapath.ExtImmE   = 0x00000000

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 000000

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0x000000

my_datapath.InstructionD   = 0x00000000

my_datapath.InstructionE   = 0x00000000

my_datapath.InstructionF   = 0xeb000002

my_datapath.L   = 0

my_datapath.MemWriteM   = 0

my_datapath.MemtoRegW   = 0

my_datapath.Op   = 00

my_datapath.PCFetch   = 0x0000003c

```
my_datapath.PCPlus4D      = 0x00000000

my_datapath.PCPlus4F      = 0x00000040

my_datapath.PCPlus8D      = 0x00000040

my_datapath.PCSrcW        = 0

my_datapath.PC_NEXT       = 0x00000040

my_datapath.PC_NEXT_NEXT  = 0x00000040

my_datapath.RA1D          = 0000

my_datapath.RA1E          = 0000

my_datapath.RA2D          = 0000

my_datapath.RA2E          = 0000

my_datapath.RD1           = 0x00000000

my_datapath.RD1E          = 0x00000000

my_datapath.RD2           = 0x00000000

my_datapath.RD2E          = 0x00000000

my_datapath.REG_FILE_DATA = 0x00000080

my_datapath.ROT_VALUE     = 00000000

my_datapath.Rd            = 0000

my_datapath.ReadDataM     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD       = 00

my_datapath.RegWriteW     = 0

my_datapath.ResultW       = 0x00000080

my_datapath.Rm            = 0000

my_datapath.Rn            = 0000

my_datapath.SHIFTED_DATA  = 0x00000000

my_datapath.SHIFT_CONTROL = 00

my_datapath.SHIFT_DATA    = 0x00000000

my_datapath.SHIFT_SHAMT   = 00000

my_datapath.SrcAE         = 0x00000000

my_datapath.SrcB          = 0x00000000

my_datapath.SrcBE         = 0x00000000

my_datapath.SrcBEData     = 0x00000000

my_datapath.StallD        = 0

my_datapath.StallF        = 0

my_datapath.WA3E          = 0000

my_datapath.WA3M          = 0000

my_datapath.WA3W          = 0000

my_datapath.WriteDataM    = 0x00000000

my_datapath.Write_Z_ENABLE = 1
```

```
my_datapath.Z_FLAG       = 1
my_datapath.Z_OUT        = 1
my_datapath.clk          = 1
my_datapath.reset        = 0
195000.00ns DEBUG   Performance Model          ************ DUT Controller Signals ***************
my_controller.ALUControlD    = 0000
my_controller.ALUControlE    = 0000
my_controller.ALUSrcD        = 0
my_controller.ALUSrcE        = 0
my_controller.BControl       = 0
my_controller.BranchD        = 0
my_controller.BranchE        = 0
my_controller.BranchTakenE   = 0
my_controller.Cond           = 0000
my_controller.CondE          = 0000
my_controller.CondEx         = 1
my_controller.FlagWriteD     = 01
my_controller.FlagWriteE     = 01
my_controller.FuncControl    = 0
my_controller.Funct          = 000000
my_controller.ImmSrcD        = 00
my_controller.MemWriteD      = 0
my_controller.MemWriteE      = 0
my_controller.MemWriteM      = 0
my_controller.MemtoRegD      = 0
my_controller.MemtoRegE      = 0
my_controller.MemtoRegM      = 0
my_controller.MemtoRegW      = 0
my_controller.Op             = 00
my_controller.PCSrcD         = 0
my_controller.PCSrcE         = 0
my_controller.PCSrcM         = 0
my_controller.PCSrcW         = 0
my_controller.RegSrcD        = 00
my_controller.RegWriteD      = 1
my_controller.RegWriteE      = 1
my_controller.RegWriteM      = 0
my_controller.RegWriteW      = 0
my_controller.Write_Z_ENABLE = 1
```

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

196000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

196000.00ns DEBUG   Performance Model   PC:0x40   PC:0x40

196000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

196000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

196000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

196000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

196000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

196000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

196000.00ns DEBUG   Performance Model   Register:6: 0x80000002   0x80000002

196000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8   0xfffffff8

196000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

196000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

196000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

196000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

196000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

196000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

196000.00ns DEBUG   Performance Model   Register:14: 0x0   0x0

196000.00ns DEBUG   Performance Model   Register:15: Not checked   0x44

196000.00ns DEBUG   Performance Model   *************** Clock cycle: 19 *********************

196000.00ns DEBUG   Performance Model   Computer is stalled for this cycle

205000.00ns DEBUG   Performance Model   ************* DUT DATAPATH Signals **************

my_datapath.ALUControlE   = 0000

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x0000003c

my_datapath.ALUResultE   = 0x00000000

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 1110

my_datapath.ExtImmD   = 0x00000008

my_datapath.ExtImmE   = 0x00000000

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

```
my_datapath.ForwardAE     = 10
my_datapath.ForwardBE     = 10
my_datapath.Funct         = 110000
my_datapath.ImmSrcD       = 10
my_datapath.Inst          = 0x000002
my_datapath.InstructionD  = 0xeb000002
my_datapath.InstructionE  = 0x00000000
my_datapath.InstructionF  = 0xe3a00e33
my_datapath.L             = 1
my_datapath.MemWriteM     = 0
my_datapath.MemtoRegW     = 0
my_datapath.Op            = 10
my_datapath.PCFetch       = 0x00000040
my_datapath.PCPlus4D      = 0x00000040
my_datapath.PCPlus4F      = 0x00000044
my_datapath.PCPlus8D      = 0x00000044
my_datapath.PCSrcW        = 0
my_datapath.PC_NEXT       = 0x00000044
my_datapath.PC_NEXT_NEXT  = 0x00000044
my_datapath.RA1D          = 1111
my_datapath.RA1E          = 0000
my_datapath.RA2D          = 0000
my_datapath.RA2E          = 0000
my_datapath.RD1           = 0x00000044
my_datapath.RD1E          = 0x00000000
my_datapath.RD2           = 0x00000000
my_datapath.RD2E          = 0x00000000
my_datapath.REG_FILE_DATA = 0x00000040
my_datapath.ROT_VALUE     = 00000000
my_datapath.Rd            = 0000
my_datapath.ReadDataM     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.RegSrcD       = 11
my_datapath.RegWriteW     = 0
my_datapath.ResultW       = 0x0000003c
my_datapath.Rm            = 0010
my_datapath.Rn            = 0000
my_datapath.SHIFTED_DATA  = 0x00000000
my_datapath.SHIFT_CONTROL = 00
```

```
my_datapath.SHIFT_DATA    = 0x00000000

my_datapath.SHIFT_SHAMT   = 00000

my_datapath.SrcAE         = 0x00000000

my_datapath.SrcB          = 0x00000000

my_datapath.SrcBE         = 0x00000000

my_datapath.SrcBEData     = 0x00000000

my_datapath.StallD        = 0

my_datapath.StallF        = 0

my_datapath.WA3E          = 0000

my_datapath.WA3M          = 0000

my_datapath.WA3W          = 0000

my_datapath.WriteDataM    = 0x00000000

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG        = 1

my_datapath.Z_OUT         = 1

my_datapath.clk           = 1

my_datapath.reset         = 0

205000.00ns DEBUG   Performance Model              ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0100

my_controller.ALUControlE   = 0000

my_controller.ALUSrcD       = 1

my_controller.ALUSrcE       = 0

my_controller.BControl      = 1

my_controller.BranchD       = 1

my_controller.BranchE       = 0

my_controller.BranchTakenE  = 0

my_controller.Cond          = 1110

my_controller.CondE         = 0000

my_controller.CondEx        = 1

my_controller.FlagWriteD    = 00

my_controller.FlagWriteE    = 01

my_controller.FuncControl   = 0

my_controller.Funct         = 110000

my_controller.ImmSrcD       = 10

my_controller.MemWriteD     = 0

my_controller.MemWriteE     = 0

my_controller.MemWriteM     = 0

my_controller.MemtoRegD     = 0

my_controller.MemtoRegE     = 0
```

my_controller.MemtoRegM   = 0

my_controller.MemtoRegW   = 0

my_controller.Op   = 10

my_controller.PCSrcD   = 0

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 11

my_controller.RegWriteD   = 1

my_controller.RegWriteE   = 1

my_controller.RegWriteM   = 1

my_controller.RegWriteW   = 0

my_controller.Write_Z_ENABLE = 1

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

206000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

206000.00ns DEBUG   Performance Model   PC:0x44   PC:0x44

206000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

206000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

206000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

206000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

206000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

206000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

206000.00ns DEBUG   Performance Model   Register:6: 0x80000002   0x80000002

206000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8   0xfffffff8

206000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

206000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

206000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

206000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

206000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

206000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

206000.00ns DEBUG   Performance Model   Register:14: 0x0   0x40

206000.00ns DEBUG   Performance Model   Register:15: Not checked   0x48

206000.00ns DEBUG   Performance Model   *************** Clock cycle: 20 ********************

206000.00ns DEBUG   Performance Model   ****** Current Instruction *********

206000.00ns DEBUG   Performance Model   Binary string:11101011000000000000000000000010

206000.00ns DEBUG   Performance Model   Operation type Branch (except Bx)

206000.00ns DEBUG   Performance Model   Link bit:1

206000.00ns DEBUG   Performance Model   imm24:2

215000.00ns DEBUG   Performance Model   ************* DUT DATAPATH Signals ***************

my_datapath.ALUControlE   = 0100

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x0000004c

my_datapath.ALUSrcE   = 1

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 1

my_datapath.Cond   = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000033

my_datapath.ExtImmE   = 0x00000008

my_datapath.FlushD   = 1

my_datapath.FlushE   = 1

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 10

my_datapath.Funct   = 111010

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0xa00e33

my_datapath.InstructionD   = 0xe3a00e33

my_datapath.InstructionE   = 0xeb000002

my_datapath.InstructionF   = 0x00000000

my_datapath.L   = 0

my_datapath.MemWriteM   = 0

my_datapath.MemtoRegW   = 0

my_datapath.Op   = 00

my_datapath.PCFetch   = 0x00000044

my_datapath.PCPlus4D   = 0x00000044

my_datapath.PCPlus4F   = 0x00000048

my_datapath.PCPlus8D   = 0x00000048

my_datapath.PCSrcW   = 0

my_datapath.PC_NEXT   = 0x00000048

my_datapath.PC_NEXT_NEXT   = 0x0000004c

my_datapath.RA1D   = 0000

my_datapath.RA1E   = 1111

my_datapath.RA2D   = 0011

my_datapath.RA2E   = 0000

my_datapath.RD1   = 0x00000000

my_datapath.RD1E   = 0x00000044

my_datapath.RD2   = 0x00000002

my_datapath.RD2E   = 0x00000000

my_datapath.REG_FILE_DATA = 0x00000000

my_datapath.ROT_VALUE   = 00000000

my_datapath.Rd   = 0000

my_datapath.ReadDataM   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD   = 00

my_datapath.RegWriteW   = 1

my_datapath.ResultW   = 0x00000000

my_datapath.Rm   = 0011

my_datapath.Rn   = 0000

my_datapath.SHIFTED_DATA   = 0x00000002

my_datapath.SHIFT_CONTROL = 11

my_datapath.SHIFT_DATA   = 0x00000002

my_datapath.SHIFT_SHAMT   = 00000

my_datapath.SrcAE   = 0x00000044

my_datapath.SrcB   = 0x00000000

my_datapath.SrcBE   = 0x00000008

my_datapath.SrcBEData   = 0x00000002

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0000

my_datapath.WA3M   = 0000

my_datapath.WA3W   = 0000

my_datapath.WriteDataM   = 0x00000000

my_datapath.Write_Z_ENABLE = 0

my_datapath.Z_FLAG   = 1

my_datapath.Z_OUT   = 0

my_datapath.clk   = 1

my_datapath.reset   = 0

215000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 1101

my_controller.ALUControlE   = 0100

my_controller.ALUSrcD   = 0

my_controller.ALUSrcE   = 1

```
my_controller.BControl       = 0
my_controller.BranchD        = 0
my_controller.BranchE        = 1
my_controller.BranchTakenE   = 1
my_controller.Cond           = 1110
my_controller.CondE          = 1110
my_controller.CondEx         = 1
my_controller.FlagWriteD     = 00
my_controller.FlagWriteE     = 00
my_controller.FuncControl    = 0
my_controller.Funct          = 111010
my_controller.ImmSrcD        = 00
my_controller.MemWriteD      = 0
my_controller.MemWriteE      = 0
my_controller.MemWriteM      = 0
my_controller.MemtoRegD      = 0
my_controller.MemtoRegE      = 0
my_controller.MemtoRegM      = 0
my_controller.MemtoRegW      = 0
my_controller.Op             = 00
my_controller.PCSrcD         = 0
my_controller.PCSrcE         = 0
my_controller.PCSrcM         = 0
my_controller.PCSrcW         = 0
my_controller.RegSrcD        = 00
my_controller.RegWriteD      = 1
my_controller.RegWriteE      = 0
my_controller.RegWriteM      = 1
my_controller.RegWriteW      = 1
my_controller.Write_Z_ENABLE = 0
my_controller.Z_FLAG         = 1
my_controller.clk            = 1
my_controller.reset          = 0
216000.00ns DEBUG   Performance Model            ************* Performance Model / DUT Data **************
216000.00ns DEBUG   Performance Model            PC:0x4c        PC:0x4c
216000.00ns DEBUG   Performance Model            Register:0: 0x0        0x0
216000.00ns DEBUG   Performance Model            Register:1: 0x13       0x13
216000.00ns DEBUG   Performance Model            Register:2: 0x26       0x26
216000.00ns DEBUG   Performance Model            Register:3: 0x2        0x2
```

216000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

216000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

216000.00ns DEBUG   Performance Model   Register:6: 0x80000002   0x80000002

216000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8   0xfffffff8

216000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

216000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

216000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

216000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

216000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

216000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

216000.00ns DEBUG   Performance Model   Register:14: 0x0   0x40

216000.00ns DEBUG   Performance Model   Register:15: Not checked   0x50

216000.00ns DEBUG   Performance Model   **************** Clock cycle: 21 *********************

216000.00ns DEBUG   Performance Model   Computer is stalled for this cycle

225000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals **************

my_datapath.ALUControlE   = 1101

my_datapath.ALUOutM   = 0x0000004c

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x00000000

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 0000

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000000

my_datapath.ExtImmE   = 0x00000033

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 01

my_datapath.ForwardBE   = 01

my_datapath.Funct   = 000000

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0x000000

my_datapath.InstructionD   = 0x00000000

my_datapath.InstructionE   = 0x00000000

my_datapath.InstructionF   = 0xe12fff1e

my_datapath.L   = 0

```
my_datapath.MemWriteM      = 0

my_datapath.MemtoRegW      = 0

my_datapath.Op           = 00

my_datapath.PCFetch        = 0x0000004c

my_datapath.PCPlus4D       = 0x00000000

my_datapath.PCPlus4F       = 0x00000050

my_datapath.PCPlus8D       = 0x00000050

my_datapath.PCSrcW         = 0

my_datapath.PC_NEXT        = 0x00000050

my_datapath.PC_NEXT_NEXT   = 0x00000050

my_datapath.RA1D           = 0000

my_datapath.RA1E           = 0000

my_datapath.RA2D           = 0000

my_datapath.RA2E           = 0000

my_datapath.RD1            = 0x00000000

my_datapath.RD1E           = 0x00000000

my_datapath.RD2            = 0x00000000

my_datapath.RD2E           = 0x00000000

my_datapath.REG_FILE_DATA  = 0x00000000

my_datapath.ROT_VALUE      = 00000000

my_datapath.Rd             = 0000

my_datapath.ReadDataM      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW      = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD        = 00

my_datapath.RegWriteW      = 1

my_datapath.ResultW        = 0x00000000

my_datapath.Rm             = 0000

my_datapath.Rn             = 0000

my_datapath.SHIFTED_DATA   = 0x00000000

my_datapath.SHIFT_CONTROL  = 00

my_datapath.SHIFT_DATA     = 0x00000000

my_datapath.SHIFT_SHAMT    = 00000

my_datapath.SrcAE          = 0x00000000

my_datapath.SrcB           = 0x00000000

my_datapath.SrcBE          = 0x00000000

my_datapath.SrcBEData      = 0x00000000

my_datapath.StallD         = 0

my_datapath.StallF         = 0

my_datapath.WA3E           = 0000
```

my_datapath.WA3M   = 0000

my_datapath.WA3W   = 0000

my_datapath.WriteDataM   = 0x00000000

my_datapath.Write_Z_ENABLE = 0

my_datapath.Z_FLAG   = 1

my_datapath.Z_OUT   = 1

my_datapath.clk   = 1

my_datapath.reset   = 0

225000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0000

my_controller.ALUControlE   = 1101

my_controller.ALUSrcD   = 0

my_controller.ALUSrcE   = 0

my_controller.BControl   = 0

my_controller.BranchD   = 0

my_controller.BranchE   = 0

my_controller.BranchTakenE   = 0

my_controller.Cond   = 0000

my_controller.CondE   = 1110

my_controller.CondEx   = 1

my_controller.FlagWriteD   = 01

my_controller.FlagWriteE   = 00

my_controller.FuncControl   = 0

my_controller.Funct   = 000000

my_controller.ImmSrcD   = 00

my_controller.MemWriteD   = 0

my_controller.MemWriteE   = 0

my_controller.MemWriteM   = 0

my_controller.MemtoRegD   = 0

my_controller.MemtoRegE   = 0

my_controller.MemtoRegM   = 0

my_controller.MemtoRegW   = 0

my_controller.Op   = 00

my_controller.PCSrcD   = 0

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 00

my_controller.RegWriteD   = 1

my_controller.RegWriteE   = 1

my_controller.RegWriteM   = 0

my_controller.RegWriteW   = 1

my_controller.Write_Z_ENABLE = 0

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

226000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

226000.00ns DEBUG   Performance Model   PC:0x50   PC:0x50

226000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

226000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

226000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

226000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

226000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

226000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

226000.00ns DEBUG   Performance Model   Register:6: 0x80000002   0x80000002

226000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8   0xfffffff8

226000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

226000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

226000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

226000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

226000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

226000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

226000.00ns DEBUG   Performance Model   Register:14: 0x0   0x40

226000.00ns DEBUG   Performance Model   Register:15: Not checked   0x54

226000.00ns DEBUG   Performance Model   **************** Clock cycle: 22 *********************

226000.00ns DEBUG   Performance Model   Computer is stalled for this cycle

235000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals ***************

my_datapath.ALUControlE   = 0000

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x0000004c

my_datapath.ALUResultE   = 0x00000000

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

```
my_datapath.ExtImmD       = 0x0000001e
my_datapath.ExtImmE       = 0x00000000
my_datapath.FlushD        = 0
my_datapath.FlushE        = 0
my_datapath.ForwardAE     = 10
my_datapath.ForwardBE     = 10
my_datapath.Funct         = 010010
my_datapath.ImmSrcD       = 00
my_datapath.Inst          = 0x2fff1e
my_datapath.InstructionD  = 0xe12fff1e
my_datapath.InstructionE  = 0x00000000
my_datapath.InstructionF  = 0x00000000
my_datapath.L             = 0
my_datapath.MemWriteM     = 0
my_datapath.MemtoRegW     = 0
my_datapath.Op            = 00
my_datapath.PCFetch       = 0x00000050
my_datapath.PCPlus4D      = 0x00000050
my_datapath.PCPlus4F      = 0x00000054
my_datapath.PCPlus8D      = 0x00000054
my_datapath.PCSrcW        = 0
my_datapath.PC_NEXT       = 0x00000054
my_datapath.PC_NEXT_NEXT  = 0x00000054
my_datapath.RA1D          = 1111
my_datapath.RA1E          = 0000
my_datapath.RA2D          = 1110
my_datapath.RA2E          = 0000
my_datapath.RD1           = 0x00000054
my_datapath.RD1E          = 0x00000000
my_datapath.RD2           = 0x00000040
my_datapath.RD2E          = 0x00000000
my_datapath.REG_FILE_DATA = 0x0000004c
my_datapath.ROT_VALUE     = 00000000
my_datapath.Rd            = 1111
my_datapath.ReadDataM     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.RegSrcD       = 00
my_datapath.RegWriteW     = 0
my_datapath.ResultW       = 0x0000004c
```

```
my_datapath.Rm            = 1110
my_datapath.Rn            = 1111
my_datapath.SHIFTED_DATA  = 0x00000000
my_datapath.SHIFT_CONTROL = 00
my_datapath.SHIFT_DATA    = 0x00000000
my_datapath.SHIFT_SHAMT   = 00000
my_datapath.SrcAE         = 0x00000000
my_datapath.SrcB          = 0x00000000
my_datapath.SrcBE         = 0x00000000
my_datapath.SrcBEData     = 0x00000000
my_datapath.StallD        = 0
my_datapath.StallF        = 0
my_datapath.WA3E          = 0000
my_datapath.WA3M          = 0000
my_datapath.WA3W          = 0000
my_datapath.WriteDataM    = 0x00000000
my_datapath.Write_Z_ENABLE = 1
my_datapath.Z_FLAG        = 1
my_datapath.Z_OUT         = 1
my_datapath.clk           = 1
my_datapath.reset         = 0
235000.00ns DEBUG   Performance Model            ************ DUT Controller Signals **************
my_controller.ALUControlD   = 1101
my_controller.ALUControlE   = 0000
my_controller.ALUSrcD       = 0
my_controller.ALUSrcE       = 0
my_controller.BControl      = 0
my_controller.BranchD       = 1
my_controller.BranchE       = 0
my_controller.BranchTakenE  = 0
my_controller.Cond          = 1110
my_controller.CondE         = 0000
my_controller.CondEx        = 1
my_controller.FlagWriteD    = 00
my_controller.FlagWriteE    = 01
my_controller.FuncControl   = 0
my_controller.Funct         = 010010
my_controller.ImmSrcD       = 00
my_controller.MemWriteD     = 0
```

my_controller.MemWriteE   = 0

my_controller.MemWriteM   = 0

my_controller.MemtoRegD   = 0

my_controller.MemtoRegE   = 0

my_controller.MemtoRegM   = 0

my_controller.MemtoRegW   = 0

my_controller.Op   = 00

my_controller.PCSrcD   = 0

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 00

my_controller.RegWriteD   = 0

my_controller.RegWriteE   = 1

my_controller.RegWriteM   = 1

my_controller.RegWriteW   = 0

my_controller.Write_Z_ENABLE = 1

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

236000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

236000.00ns DEBUG   Performance Model   PC:0x54   PC:0x54

236000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

236000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

236000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

236000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

236000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

236000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

236000.00ns DEBUG   Performance Model   Register:6: 0x80000002 0x80000002

236000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8 0xfffffff8

236000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

236000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

236000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

236000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

236000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

236000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

236000.00ns DEBUG   Performance Model   Register:14: 0x0   0x40

236000.00ns DEBUG   Performance Model   Register:15: Not checked   0x58

236000.00ns DEBUG   Performance Model   *************** Clock cycle: 23 *******************

236000.00ns DEBUG   Performance Model   ****** Current Instruction *********

236000.00ns DEBUG   Performance Model   Binary string:11100001001011111111111100011110

236000.00ns DEBUG   Performance Model   Operation type BX

236000.00ns DEBUG   Performance Model   Rm: 14

245000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals ***************

my_datapath.ALUControlE   = 1101

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x00000040

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 1

my_datapath.BranchTakenE   = 1

my_datapath.Cond   = 0000

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000000

my_datapath.ExtImmE   = 0x0000001e

my_datapath.FlushD   = 1

my_datapath.FlushE   = 1

my_datapath.ForwardAE   = 00

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 000000

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0x000000

my_datapath.InstructionD   = 0x00000000

my_datapath.InstructionE   = 0xe12fff1e

my_datapath.InstructionF   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.L   = 0

my_datapath.MemWriteM   = 0

my_datapath.MemtoRegW   = 0

my_datapath.Op   = 00

my_datapath.PCFetch   = 0x00000054

my_datapath.PCPlus4D   = 0x00000054

my_datapath.PCPlus4F   = 0x00000058

my_datapath.PCPlus8D   = 0x00000058

my_datapath.PCSrcW   = 0

my_datapath.PC_NEXT   = 0x00000058

my_datapath.PC_NEXT_NEXT   = 0x00000040

my_datapath.RA1D   = 0000

my_datapath.RA1E   = 1111

my_datapath.RA2D   = 0000

my_datapath.RA2E   = 1110

my_datapath.RD1   = 0x00000000

my_datapath.RD1E   = 0x00000054

my_datapath.RD2   = 0x00000000

my_datapath.RD2E   = 0x00000040

my_datapath.REG_FILE_DATA = 0x00000000

my_datapath.ROT_VALUE   = 11111110

my_datapath.Rd   = 0000

my_datapath.ReadDataM   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD   = 00

my_datapath.RegWriteW   = 1

my_datapath.ResultW   = 0x00000000

my_datapath.Rm   = 0000

my_datapath.Rn   = 0000

my_datapath.SHIFTED_DATA   = 0x00000000

my_datapath.SHIFT_CONTROL   = 00

my_datapath.SHIFT_DATA   = 0x00000040

my_datapath.SHIFT_SHAMT   = 11110

my_datapath.SrcAE   = 0x00000054

my_datapath.SrcB   = 0x00000040

my_datapath.SrcBE   = 0x00000040

my_datapath.SrcBEData   = 0x00000040

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 1111

my_datapath.WA3M   = 0000

my_datapath.WA3W   = 0000

my_datapath.WriteDataM = 0x00000000

my_datapath.Write_Z_ENABLE = 0

my_datapath.Z_FLAG   = 1

my_datapath.Z_OUT   = 0

my_datapath.clk   = 1

my_datapath.reset   = 0

245000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0000

```
my_controller.ALUControlE   = 1101
my_controller.ALUSrcD       = 0
my_controller.ALUSrcE       = 0
my_controller.BControl      = 0
my_controller.BranchD       = 0
my_controller.BranchE       = 1
my_controller.BranchTakenE  = 1
my_controller.Cond          = 0000
my_controller.CondE         = 1110
my_controller.CondEx        = 1
my_controller.FlagWriteD    = 01
my_controller.FlagWriteE    = 00
my_controller.FuncControl   = 0
my_controller.Funct         = 000000
my_controller.ImmSrcD       = 00
my_controller.MemWriteD     = 0
my_controller.MemWriteE     = 0
my_controller.MemWriteM     = 0
my_controller.MemtoRegD     = 0
my_controller.MemtoRegE     = 0
my_controller.MemtoRegM     = 0
my_controller.MemtoRegW     = 0
my_controller.Op            = 00
my_controller.PCSrcD        = 0
my_controller.PCSrcE        = 0
my_controller.PCSrcM        = 0
my_controller.PCSrcW        = 0
my_controller.RegSrcD       = 00
my_controller.RegWriteD     = 1
my_controller.RegWriteE     = 0
my_controller.RegWriteM     = 1
my_controller.RegWriteW     = 1
my_controller.Write_Z_ENABLE = 0
my_controller.Z_FLAG        = 1
my_controller.clk           = 1
my_controller.reset         = 0
246000.00ns DEBUG   Performance Model            ************* Performance Model / DUT Data **************
246000.00ns DEBUG   Performance Model            PC:0x40       PC:0x40
246000.00ns DEBUG   Performance Model            Register:0: 0x0       0x0
```

246000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

246000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

246000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

246000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

246000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

246000.00ns DEBUG   Performance Model   Register:6: 0x80000002   0x80000002

246000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8   0xfffffff8

246000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

246000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

246000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

246000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

246000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

246000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

246000.00ns DEBUG   Performance Model   Register:14: 0x0   0x40

246000.00ns DEBUG   Performance Model   Register:15: Not checked   0x44

246000.00ns DEBUG   Performance Model   *************** Clock cycle: 24 *********************

246000.00ns DEBUG   Performance Model   ****** Current Instruction *********

246000.00ns DEBUG   Performance Model   Binary string:11100011101000000000111000110011

246000.00ns DEBUG   Performance Model   Operation type Data Processing

246000.00ns DEBUG   Performance Model   cond:E

246000.00ns DEBUG   Performance Model   Immediate bit:1

246000.00ns DEBUG   Performance Model   cmd:D

246000.00ns DEBUG   Performance Model   Set bit:0

246000.00ns DEBUG   Performance Model   Rn:0   Rd:0

246000.00ns DEBUG   Performance Model   rot:14   imm8:51

255000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals ***************

my_datapath.ALUControlE   = 0000

my_datapath.ALUOutM   = 0x00000040

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x00000000

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 0000

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000000

my_datapath.ExtImmE   = 0x00000000

```
my_datapath.FlushD       = 0
my_datapath.FlushE       = 0
my_datapath.ForwardAE    = 01
my_datapath.ForwardBE    = 01
my_datapath.Funct        = 000000
my_datapath.ImmSrcD      = 00
my_datapath.Inst         = 0x000000
my_datapath.InstructionD = 0x00000000
my_datapath.InstructionE = 0x00000000
my_datapath.InstructionF = 0xe3a00e33
my_datapath.L            = 0
my_datapath.MemWriteM    = 0
my_datapath.MemtoRegW    = 0
my_datapath.Op           = 00
my_datapath.PCFetch      = 0x00000040
my_datapath.PCPlus4D     = 0x00000000
my_datapath.PCPlus4F     = 0x00000044
my_datapath.PCPlus8D     = 0x00000044
my_datapath.PCSrcW       = 0
my_datapath.PC_NEXT      = 0x00000044
my_datapath.PC_NEXT_NEXT = 0x00000044
my_datapath.RA1D         = 0000
my_datapath.RA1E         = 0000
my_datapath.RA2D         = 0000
my_datapath.RA2E         = 0000
my_datapath.RD1          = 0x00000000
my_datapath.RD1E         = 0x00000000
my_datapath.RD2          = 0x00000000
my_datapath.RD2E         = 0x00000000
my_datapath.REG_FILE_DATA = 0x00000000
my_datapath.ROT_VALUE    = 00000000
my_datapath.Rd           = 0000
my_datapath.ReadDataM    = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW    = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.RegSrcD      = 00
my_datapath.RegWriteW    = 1
my_datapath.ResultW      = 0x00000000
my_datapath.Rm           = 0000
my_datapath.Rn           = 0000
```

my_datapath.SHIFTED_DATA   = 0x00000000

my_datapath.SHIFT_CONTROL   = 00

my_datapath.SHIFT_DATA   = 0x00000000

my_datapath.SHIFT_SHAMT   = 00000

my_datapath.SrcAE   = 0x00000000

my_datapath.SrcB   = 0x00000000

my_datapath.SrcBE   = 0x00000000

my_datapath.SrcBEData   = 0x00000000

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0000

my_datapath.WA3M   = 1111

my_datapath.WA3W   = 0000

my_datapath.WriteDataM   = 0x00000040

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG   = 1

my_datapath.Z_OUT   = 1

my_datapath.clk   = 1

my_datapath.reset   = 0

255000.00ns DEBUG   Performance Model   *********** DUT Controller Signals **************

my_controller.ALUControlD   = 0000

my_controller.ALUControlE   = 0000

my_controller.ALUSrcD   = 0

my_controller.ALUSrcE   = 0

my_controller.BControl   = 0

my_controller.BranchD   = 0

my_controller.BranchE   = 0

my_controller.BranchTakenE = 0

my_controller.Cond   = 0000

my_controller.CondE   = 0000

my_controller.CondEx   = 1

my_controller.FlagWriteD   = 01

my_controller.FlagWriteE   = 01

my_controller.FuncControl   = 0

my_controller.Funct   = 000000

my_controller.ImmSrcD   = 00

my_controller.MemWriteD   = 0

my_controller.MemWriteE   = 0

my_controller.MemWriteM   = 0

```
my_controller.MemtoRegD      = 0

my_controller.MemtoRegE      = 0

my_controller.MemtoRegM      = 0

my_controller.MemtoRegW      = 0

my_controller.Op         = 00

my_controller.PCSrcD       = 0

my_controller.PCSrcE       = 0

my_controller.PCSrcM       = 0

my_controller.PCSrcW       = 0

my_controller.RegSrcD      = 00

my_controller.RegWriteD     = 1

my_controller.RegWriteE     = 1

my_controller.RegWriteM     = 0

my_controller.RegWriteW     = 1

my_controller.Write_Z_ENABLE  = 1

my_controller.Z_FLAG       = 1

my_controller.clk         = 1

my_controller.reset        = 0

256000.00ns DEBUG   Performance Model          ************* Performance Model / DUT Data  **************

256000.00ns DEBUG   Performance Model          PC:0x44       PC:0x44

256000.00ns DEBUG   Performance Model          Register:0: 0x0       0x0

256000.00ns DEBUG   Performance Model          Register:1: 0x13       0x13

256000.00ns DEBUG   Performance Model          Register:2: 0x26       0x26

256000.00ns DEBUG   Performance Model          Register:3: 0x2       0x2

256000.00ns DEBUG   Performance Model          Register:4: 0x4c       0x4c

256000.00ns DEBUG   Performance Model          Register:5: 0xa       0xa

256000.00ns DEBUG   Performance Model          Register:6: 0x80000002  0x80000002

256000.00ns DEBUG   Performance Model          Register:7: 0xfffffff8  0xfffffff8

256000.00ns DEBUG   Performance Model          Register:8: 0x26       0x26

256000.00ns DEBUG   Performance Model          Register:9: 0x0       0x0

256000.00ns DEBUG   Performance Model          Register:10: 0x0       0x0

256000.00ns DEBUG   Performance Model          Register:11: 0x0       0x0

256000.00ns DEBUG   Performance Model          Register:12: 0x0       0x0

256000.00ns DEBUG   Performance Model          Register:13: 0x0       0x0

256000.00ns DEBUG   Performance Model          Register:14: 0x40       0x40

256000.00ns DEBUG   Performance Model          Register:15: Not checked      0x48

256000.00ns DEBUG   Performance Model          *************** Clock cycle: 25 ********************

256000.00ns DEBUG   Performance Model          Computer is stalled for this cycle

265000.00ns DEBUG   Performance Model          ************ DUT DATAPATH Signals ***************
```

```
my_datapath.ALUControlE    = 0000

my_datapath.ALUOutM        = 0x00000000

my_datapath.ALUOutW        = 0x00000040

my_datapath.ALUResultE     = 0x00000000

my_datapath.ALUSrcE        = 0

my_datapath.BX             = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond           = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out      = 0x00000000

my_datapath.DestSelect     = 1111

my_datapath.ExtImmD        = 0x00000033

my_datapath.ExtImmE        = 0x00000000

my_datapath.FlushD         = 0

my_datapath.FlushE         = 0

my_datapath.ForwardAE      = 10

my_datapath.ForwardBE      = 10

my_datapath.Funct          = 111010

my_datapath.ImmSrcD        = 00

my_datapath.Inst           = 0xa00e33

my_datapath.InstructionD   = 0xe3a00e33

my_datapath.InstructionE   = 0x00000000

my_datapath.InstructionF   = 0x00000000

my_datapath.L              = 0

my_datapath.MemWriteM      = 0

my_datapath.MemtoRegW      = 0

my_datapath.Op             = 00

my_datapath.PCFetch        = 0x00000044

my_datapath.PCPlus4D       = 0x00000044

my_datapath.PCPlus4F       = 0x00000048

my_datapath.PCPlus8D       = 0x00000048

my_datapath.PCSrcW         = 0

my_datapath.PC_NEXT        = 0x00000048

my_datapath.PC_NEXT_NEXT   = 0x00000048

my_datapath.RA1D           = 0000

my_datapath.RA1E           = 0000

my_datapath.RA2D           = 0011

my_datapath.RA2E           = 0000

my_datapath.RD1            = 0x00000000
```

my_datapath.RD1E   = 0x00000000

my_datapath.RD2   = 0x00000002

my_datapath.RD2E   = 0x00000000

my_datapath.REG_FILE_DATA = 0x00000040

my_datapath.ROT_VALUE   = 00000000

my_datapath.Rd   = 0000

my_datapath.ReadDataM   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD   = 00

my_datapath.RegWriteW   = 0

my_datapath.ResultW   = 0x00000040

my_datapath.Rm   = 0011

my_datapath.Rn   = 0000

my_datapath.SHIFTED_DATA   = 0x00000000

my_datapath.SHIFT_CONTROL   = 00

my_datapath.SHIFT_DATA   = 0x00000000

my_datapath.SHIFT_SHAMT   = 00000

my_datapath.SrcAE   = 0x00000000

my_datapath.SrcB   = 0x00000000

my_datapath.SrcBE   = 0x00000000

my_datapath.SrcBEData   = 0x00000000

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0000

my_datapath.WA3M   = 0000

my_datapath.WA3W   = 1111

my_datapath.WriteDataM   = 0x00000000

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG   = 1

my_datapath.Z_OUT   = 1

my_datapath.clk   = 1

my_datapath.reset   = 0

265000.00ns DEBUG   Performance Model   *********** DUT Controller Signals **************

my_controller.ALUControlD   = 1101

my_controller.ALUControlE   = 0000

my_controller.ALUSrcD   = 0

my_controller.ALUSrcE   = 0

my_controller.BControl   = 0

my_controller.BranchD   = 0

my_controller.BranchE   = 0

my_controller.BranchTakenE   = 0

my_controller.Cond   = 1110

my_controller.CondE   = 0000

my_controller.CondEx   = 1

my_controller.FlagWriteD   = 00

my_controller.FlagWriteE   = 01

my_controller.FuncControl   = 0

my_controller.Funct   = 111010

my_controller.ImmSrcD   = 00

my_controller.MemWriteD   = 0

my_controller.MemWriteE   = 0

my_controller.MemWriteM   = 0

my_controller.MemtoRegD   = 0

my_controller.MemtoRegE   = 0

my_controller.MemtoRegM   = 0

my_controller.MemtoRegW   = 0

my_controller.Op   = 00

my_controller.PCSrcD   = 0

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 00

my_controller.RegWriteD   = 1

my_controller.RegWriteE   = 1

my_controller.RegWriteM   = 1

my_controller.RegWriteW   = 0

my_controller.Write_Z_ENABLE = 1

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

266000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

266000.00ns DEBUG   Performance Model   PC:0x-1   PC:0x48

266000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

266000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

266000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

266000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

266000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

266000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

266000.00ns DEBUG   Performance Model   Register:6: 0x80000002   0x80000002

266000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8   0xfffffff8

266000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

266000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

266000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

266000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

266000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

266000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

266000.00ns DEBUG   Performance Model   Register:14: 0x40   0x40

266000.00ns DEBUG   Performance Model   Register:15: Not checked   0x4c

266000.00ns DEBUG   Performance Model   **************** Clock cycle: 26 ********************

266000.00ns DEBUG   Performance Model   Computer is stalled for this cycle

275000.00ns DEBUG   Performance Model   ************ DUT DATAPATH Signals ***************

my_datapath.ALUControlE   = 1101

my_datapath.ALUOutM   = 0x00000000

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x00000330

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 0000

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000000

my_datapath.ExtImmE   = 0x00000033

my_datapath.FlushD   = 0

my_datapath.FlushE   = 0

my_datapath.ForwardAE   = 10

my_datapath.ForwardBE   = 00

my_datapath.Funct   = 000000

my_datapath.ImmSrcD   = 00

my_datapath.Inst   = 0x000000

my_datapath.InstructionD   = 0x00000000

my_datapath.InstructionE   = 0xe3a00e33

my_datapath.InstructionF   = 0x00000000

my_datapath.L   = 0

my_datapath.MemWriteM   = 0

my_datapath.MemtoRegW   = 0

```
my_datapath.Op            = 00
my_datapath.PCFetch       = 0x00000048
my_datapath.PCPlus4D      = 0x00000048
my_datapath.PCPlus4F      = 0x0000004c
my_datapath.PCPlus8D      = 0x0000004c
my_datapath.PCSrcW        = 0
my_datapath.PC_NEXT       = 0x0000004c
my_datapath.PC_NEXT_NEXT  = 0x0000004c
my_datapath.RA1D          = 0000
my_datapath.RA1E          = 0000
my_datapath.RA2D          = 0000
my_datapath.RA2E          = 0011
my_datapath.RD1           = 0x00000000
my_datapath.RD1E          = 0x00000000
my_datapath.RD2           = 0x00000000
my_datapath.RD2E          = 0x00000002
my_datapath.REG_FILE_DATA = 0x00000000
my_datapath.ROT_VALUE     = 11011100
my_datapath.Rd            = 0000
my_datapath.ReadDataM     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.ReadDataW     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
my_datapath.RegSrcD       = 00
my_datapath.RegWriteW     = 1
my_datapath.ResultW       = 0x00000000
my_datapath.Rm            = 0000
my_datapath.Rn            = 0000
my_datapath.SHIFTED_DATA  = 0x00000330
my_datapath.SHIFT_CONTROL = 11
my_datapath.SHIFT_DATA    = 0x00000033
my_datapath.SHIFT_SHAMT   = 11100
my_datapath.SrcAE         = 0x00000000
my_datapath.SrcB          = 0x00000002
my_datapath.SrcBE         = 0x00000330
my_datapath.SrcBEData     = 0x00000330
my_datapath.StallD        = 0
my_datapath.StallF        = 0
my_datapath.WA3E          = 0000
my_datapath.WA3M          = 0000
my_datapath.WA3W          = 0000
```

```
my_datapath.WriteDataM      = 0x00000000
my_datapath.Write_Z_ENABLE  = 0
my_datapath.Z_FLAG          = 1
my_datapath.Z_OUT           = 0
my_datapath.clk             = 1
my_datapath.reset           = 0
275000.00ns DEBUG   Performance Model           ************ DUT Controller Signals **************
my_controller.ALUControlD   = 0000
my_controller.ALUControlE   = 1101
my_controller.ALUSrcD       = 0
my_controller.ALUSrcE       = 0
my_controller.BControl      = 0
my_controller.BranchD       = 0
my_controller.BranchE       = 0
my_controller.BranchTakenE  = 0
my_controller.Cond          = 0000
my_controller.CondE         = 1110
my_controller.CondEx        = 1
my_controller.FlagWriteD    = 01
my_controller.FlagWriteE    = 00
my_controller.FuncControl   = 0
my_controller.Funct         = 000000
my_controller.ImmSrcD       = 00
my_controller.MemWriteD     = 0
my_controller.MemWriteE     = 0
my_controller.MemWriteM     = 0
my_controller.MemtoRegD     = 0
my_controller.MemtoRegE     = 0
my_controller.MemtoRegM     = 0
my_controller.MemtoRegW     = 0
my_controller.Op            = 00
my_controller.PCSrcD        = 0
my_controller.PCSrcE        = 0
my_controller.PCSrcM        = 0
my_controller.PCSrcW        = 0
my_controller.RegSrcD       = 00
my_controller.RegWriteD     = 1
my_controller.RegWriteE     = 1
my_controller.RegWriteM     = 1
```

my_controller.RegWriteW   = 1

my_controller.Write_Z_ENABLE = 0

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

276000.00ns DEBUG Performance Model   ************* Performance Model / DUT Data *************

276000.00ns DEBUG Performance Model   PC:0x-1   PC:0x4c

276000.00ns DEBUG Performance Model   Register:0: 0x0   0x0

276000.00ns DEBUG Performance Model   Register:1: 0x13   0x13

276000.00ns DEBUG Performance Model   Register:2: 0x26   0x26

276000.00ns DEBUG Performance Model   Register:3: 0x2   0x2

276000.00ns DEBUG Performance Model   Register:4: 0x4c   0x4c

276000.00ns DEBUG Performance Model   Register:5: 0xa   0xa

276000.00ns DEBUG Performance Model   Register:6: 0x80000002 0x80000002

276000.00ns DEBUG Performance Model   Register:7: 0xfffffff8 0xfffffff8

276000.00ns DEBUG Performance Model   Register:8: 0x26   0x26

276000.00ns DEBUG Performance Model   Register:9: 0x0   0x0

276000.00ns DEBUG Performance Model   Register:10: 0x0   0x0

276000.00ns DEBUG Performance Model   Register:11: 0x0   0x0

276000.00ns DEBUG Performance Model   Register:12: 0x0   0x0

276000.00ns DEBUG Performance Model   Register:13: 0x0   0x0

276000.00ns DEBUG Performance Model   Register:14: 0x40   0x40

276000.00ns DEBUG Performance Model   Register:15: Not checked   0x50

276000.00ns DEBUG Performance Model   *************** Clock cycle: 27 *********************

276000.00ns DEBUG Performance Model   Computer is stalled for this cycle

285000.00ns DEBUG Performance Model   ************ DUT DATAPATH Signals ***************

my_datapath.ALUControlE   = 0000

my_datapath.ALUOutM   = 0x00000330

my_datapath.ALUOutW   = 0x00000000

my_datapath.ALUResultE   = 0x00000330

my_datapath.ALUSrcE   = 0

my_datapath.BX   = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond   = 0000

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out   = 0x00000000

my_datapath.DestSelect   = 0000

my_datapath.ExtImmD   = 0x00000000

my_datapath.ExtImmE   = 0x00000000

```
my_datapath.FlushD        = 0

my_datapath.FlushE        = 0

my_datapath.ForwardAE     = 10

my_datapath.ForwardBE     = 10

my_datapath.Funct         = 000000

my_datapath.ImmSrcD       = 00

my_datapath.Inst          = 0x000000

my_datapath.InstructionD  = 0x00000000

my_datapath.InstructionE  = 0x00000000

my_datapath.InstructionF  = 0xe12fff1e

my_datapath.L             = 0

my_datapath.MemWriteM     = 0

my_datapath.MemtoRegW     = 0

my_datapath.Op            = 00

my_datapath.PCFetch       = 0x0000004c

my_datapath.PCPlus4D      = 0x0000004c

my_datapath.PCPlus4F      = 0x00000050

my_datapath.PCPlus8D      = 0x00000050

my_datapath.PCSrcW        = 0

my_datapath.PC_NEXT       = 0x00000050

my_datapath.PC_NEXT_NEXT  = 0x00000050

my_datapath.RA1D          = 0000

my_datapath.RA1E          = 0000

my_datapath.RA2D          = 0000

my_datapath.RA2E          = 0000

my_datapath.RD1           = 0x00000000

my_datapath.RD1E          = 0x00000000

my_datapath.RD2           = 0x00000000

my_datapath.RD2E          = 0x00000000

my_datapath.REG_FILE_DATA = 0x00000000

my_datapath.ROT_VALUE     = 00000000

my_datapath.Rd            = 0000

my_datapath.ReadDataM     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW     = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD       = 00

my_datapath.RegWriteW     = 1

my_datapath.ResultW       = 0x00000000

my_datapath.Rm            = 0000

my_datapath.Rn            = 0000
```

my_datapath.SHIFTED_DATA   = 0x00000330

my_datapath.SHIFT_CONTROL   = 00

my_datapath.SHIFT_DATA   = 0x00000330

my_datapath.SHIFT_SHAMT   = 00000

my_datapath.SrcAE   = 0x00000330

my_datapath.SrcB   = 0x00000330

my_datapath.SrcBE   = 0x00000330

my_datapath.SrcBEData   = 0x00000330

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0000

my_datapath.WA3M   = 0000

my_datapath.WA3W   = 0000

my_datapath.WriteDataM   = 0x00000002

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG   = 1

my_datapath.Z_OUT   = 0

my_datapath.clk   = 1

my_datapath.reset   = 0

285000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 0000

my_controller.ALUControlE   = 0000

my_controller.ALUSrcD   = 0

my_controller.ALUSrcE   = 0

my_controller.BControl   = 0

my_controller.BranchD   = 0

my_controller.BranchE   = 0

my_controller.BranchTakenE   = 0

my_controller.Cond   = 0000

my_controller.CondE   = 0000

my_controller.CondEx   = 1

my_controller.FlagWriteD   = 01

my_controller.FlagWriteE   = 01

my_controller.FuncControl   = 0

my_controller.Funct   = 000000

my_controller.ImmSrcD   = 00

my_controller.MemWriteD   = 0

my_controller.MemWriteE   = 0

my_controller.MemWriteM   = 0

my_controller.MemtoRegD   = 0

my_controller.MemtoRegE   = 0

my_controller.MemtoRegM   = 0

my_controller.MemtoRegW   = 0

my_controller.Op   = 00

my_controller.PCSrcD   = 0

my_controller.PCSrcE   = 0

my_controller.PCSrcM   = 0

my_controller.PCSrcW   = 0

my_controller.RegSrcD   = 00

my_controller.RegWriteD   = 1

my_controller.RegWriteE   = 1

my_controller.RegWriteM   = 1

my_controller.RegWriteW   = 1

my_controller.Write_Z_ENABLE = 1

my_controller.Z_FLAG   = 1

my_controller.clk   = 1

my_controller.reset   = 0

286000.00ns DEBUG   Performance Model   ************* Performance Model / DUT Data *************

286000.00ns DEBUG   Performance Model   PC:0x-1   PC:0x50

286000.00ns DEBUG   Performance Model   Register:0: 0x0   0x0

286000.00ns DEBUG   Performance Model   Register:1: 0x13   0x13

286000.00ns DEBUG   Performance Model   Register:2: 0x26   0x26

286000.00ns DEBUG   Performance Model   Register:3: 0x2   0x2

286000.00ns DEBUG   Performance Model   Register:4: 0x4c   0x4c

286000.00ns DEBUG   Performance Model   Register:5: 0xa   0xa

286000.00ns DEBUG   Performance Model   Register:6: 0x80000002 0x80000002

286000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8 0xfffffff8

286000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

286000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

286000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

286000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

286000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

286000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

286000.00ns DEBUG   Performance Model   Register:14: 0x40   0x40

286000.00ns DEBUG   Performance Model   Register:15: Not checked   0x54

286000.00ns DEBUG   Performance Model   **************** Clock cycle: 28 *********************

286000.00ns DEBUG   Performance Model   Computer is stalled for this cycle

295000.00ns DEBUG   Performance Model   ************* DUT DATAPATH Signals ***************

```
my_datapath.ALUControlE    = 0000

my_datapath.ALUOutM        = 0x00000330

my_datapath.ALUOutW        = 0x00000330

my_datapath.ALUResultE     = 0x00000330

my_datapath.ALUSrcE        = 0

my_datapath.BX             = 0

my_datapath.BranchTakenE   = 0

my_datapath.Cond           = 1110

my_datapath.Debug_Source_select= zzzz

my_datapath.Debug_out      = 0x00000000

my_datapath.DestSelect     = 0000

my_datapath.ExtImmD        = 0x0000001e

my_datapath.ExtImmE        = 0x00000000

my_datapath.FlushD         = 0

my_datapath.FlushE         = 0

my_datapath.ForwardAE      = 10

my_datapath.ForwardBE      = 10

my_datapath.Funct          = 010010

my_datapath.ImmSrcD        = 00

my_datapath.Inst           = 0x2fff1e

my_datapath.InstructionD   = 0xe12fff1e

my_datapath.InstructionE   = 0x00000000

my_datapath.InstructionF   = 0x00000000

my_datapath.L              = 0

my_datapath.MemWriteM      = 0

my_datapath.MemtoRegW      = 0

my_datapath.Op             = 00

my_datapath.PCFetch        = 0x00000050

my_datapath.PCPlus4D       = 0x00000050

my_datapath.PCPlus4F       = 0x00000054

my_datapath.PCPlus8D       = 0x00000054

my_datapath.PCSrcW         = 0

my_datapath.PC_NEXT        = 0x00000054

my_datapath.PC_NEXT_NEXT   = 0x00000054

my_datapath.RA1D           = 1111

my_datapath.RA1E           = 0000

my_datapath.RA2D           = 1110

my_datapath.RA2E           = 0000

my_datapath.RD1            = 0x00000054
```

my_datapath.RD1E   = 0x00000000

my_datapath.RD2   = 0x00000040

my_datapath.RD2E   = 0x00000000

my_datapath.REG_FILE_DATA = 0x00000330

my_datapath.ROT_VALUE   = 00000000

my_datapath.Rd   = 1111

my_datapath.ReadDataM   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.ReadDataW   = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

my_datapath.RegSrcD   = 00

my_datapath.RegWriteW   = 1

my_datapath.ResultW   = 0x00000330

my_datapath.Rm   = 1110

my_datapath.Rn   = 1111

my_datapath.SHIFTED_DATA   = 0x00000330

my_datapath.SHIFT_CONTROL   = 00

my_datapath.SHIFT_DATA   = 0x00000330

my_datapath.SHIFT_SHAMT   = 00000

my_datapath.SrcAE   = 0x00000330

my_datapath.SrcB   = 0x00000330

my_datapath.SrcBE   = 0x00000330

my_datapath.SrcBEData   = 0x00000330

my_datapath.StallD   = 0

my_datapath.StallF   = 0

my_datapath.WA3E   = 0000

my_datapath.WA3M   = 0000

my_datapath.WA3W   = 0000

my_datapath.WriteDataM   = 0x00000000

my_datapath.Write_Z_ENABLE = 1

my_datapath.Z_FLAG   = 0

my_datapath.Z_OUT   = 0

my_datapath.clk   = 1

my_datapath.reset   = 0

295000.00ns DEBUG   Performance Model   ************ DUT Controller Signals **************

my_controller.ALUControlD   = 1101

my_controller.ALUControlE   = 0000

my_controller.ALUSrcD   = 0

my_controller.ALUSrcE   = 0

my_controller.BControl   = 0

my_controller.BranchD   = 1

```
my_controller.BranchE        = 0
my_controller.BranchTakenE   = 0
my_controller.Cond           = 1110
my_controller.CondE          = 0000
my_controller.CondEx         = 1
my_controller.FlagWriteD     = 00
my_controller.FlagWriteE     = 01
my_controller.FuncControl    = 0
my_controller.Funct          = 010010
my_controller.ImmSrcD        = 00
my_controller.MemWriteD      = 0
my_controller.MemWriteE      = 0
my_controller.MemWriteM      = 0
my_controller.MemtoRegD      = 0
my_controller.MemtoRegE      = 0
my_controller.MemtoRegM      = 0
my_controller.MemtoRegW      = 0
my_controller.Op             = 00
my_controller.PCSrcD         = 0
my_controller.PCSrcE         = 0
my_controller.PCSrcM         = 0
my_controller.PCSrcW         = 0
my_controller.RegSrcD        = 00
my_controller.RegWriteD      = 0
my_controller.RegWriteE      = 1
my_controller.RegWriteM      = 1
my_controller.RegWriteW      = 1
my_controller.Write_Z_ENABLE = 1
my_controller.Z_FLAG         = 0
my_controller.clk            = 1
my_controller.reset          = 0
296000.00ns DEBUG   Performance Model        ************* Performance Model / DUT Data *************
296000.00ns DEBUG   Performance Model        PC:0x-1      PC:0x54
296000.00ns DEBUG   Performance Model        Register:0: 0x330      0x330
296000.00ns DEBUG   Performance Model        Register:1: 0x13       0x13
296000.00ns DEBUG   Performance Model        Register:2: 0x26       0x26
296000.00ns DEBUG   Performance Model        Register:3: 0x2        0x2
296000.00ns DEBUG   Performance Model        Register:4: 0x4c       0x4c
296000.00ns DEBUG   Performance Model        Register:5: 0xa        0xa
```

296000.00ns DEBUG   Performance Model   Register:6: 0x80000002   0x80000002

296000.00ns DEBUG   Performance Model   Register:7: 0xfffffff8   0xfffffff8

296000.00ns DEBUG   Performance Model   Register:8: 0x26   0x26

296000.00ns DEBUG   Performance Model   Register:9: 0x0   0x0

296000.00ns DEBUG   Performance Model   Register:10: 0x0   0x0

296000.00ns DEBUG   Performance Model   Register:11: 0x0   0x0

296000.00ns DEBUG   Performance Model   Register:12: 0x0   0x0

296000.00ns DEBUG   Performance Model   Register:13: 0x0   0x0

296000.00ns DEBUG   Performance Model   Register:14: 0x40   0x40

296000.00ns DEBUG   Performance Model   Register:15: Not checked   0x58

297000.00ns INFO   cocotb.regression   Pipeline_test ←[32mpassed←[49m←[39m

297000.00ns INFO   cocotb.regression
****
                        ** TEST   STATUS SIM TIME (ns) REAL TIME (s) RATIO (ns/s) **

                        ****

                        ** Pipeline_Test.Pipeline_test ←[32m PASS ←[49m←[39m   297000.00   0.34   867714.50 **

                        ****

                        ** TESTS=1 PASS=1 FAIL=0 SKIP=0   297000.00   0.50   597465.16 **

                        ****

make[1]: Leaving directory '/c/Users/alper/Desktop/EE/EE5-2/EE446/Prelim/Exp4/Pipeline_ARM/Test'

(base) PS C:\Users\alper\Desktop\EE\EE5-2\EE446\Prelim\Exp4\Pipeline_ARM\Test>