writeMem(10, 16'b0110000100101111);

writeReg( 2, 16'h0112);

writeMem(16'h0112, 12);

run(10,1);

readReg(1, out);

if(out == 12)

$display("----------------good cp1" );

else

$display("-----------------bad cp1" );

writeMem(11, 16'b0110000100100111);

writeReg( 2, 16'h0033);

run(11,1);

readReg(1, out);

if(out == 16'h0033)

$display("----------------good cp2" );

else

$display("-----------------bad cp2" );

writeMem(12, 16'b0110000100100100);

writeReg( 2, 16'h0022);

run(12,1);

readReg(1, out);

if(out == 16'h0033)

$display("----------------good cp3" );

else

$display("-----------------bad cp3" );

writeMem(13, 16'b0000000100100111);

writeReg( 1, 16'h0002);

writeReg( 2, 16'h0003);

run(13,1);

readReg(1, out);

if(out == 16'h0005)

$display("----------------good add1" );

else

$display("-----------------bad add1" );

writeMem(14, 16'b0000000100101111);

writeReg( 1, 16'h0003);

writeReg( 2, 16'h0002);

writeMem( 2, 4);

run(14,1);

readReg(1, out);

if(out == 16'h0007)

$display("----------------good add2" );

else

$display("-----------------bad add2" );

writeMem(15, 16'b0000000100100110);

writeReg( 1, 16'h0002);

writeReg( 2, 16'h0003);

run(15,1);

readReg(1, out);

if(out == 16'h0002)

$display("----------------good add3" );

else

$display("-----------------bad add3" );

writeMem(16, 16'b0000000100100111);

writeReg( 1, 16'h7fff);

writeReg( 2, 16'h0001);

run(16,1);

readReg(1, out);

if(out == 16'h8000)

$display("----------------good add4" );

else

$display("-----------------bad add4" );

writeMem(17, 16'b0100000100100111);

writeReg( 1, 16'h0002);

writeReg( 2, 16'h0003);

run(17,1);

readReg(1, out);

if(out == 16'hffff)

$display("----------------good sub1" );

else

$display("-----------------bad sub1" );

writeMem(18, 16'b0100000100101111);

writeReg( 1, 16'h0003);

writeReg( 2, 16'h0002);

writeMem( 2, 1);

run(18,1);

readReg(1, out);

if(out == 16'h0002)

$display("----------------good sub2" );

else

$display("-----------------bad sub2" );

writeMem(19, 16'b0100000100100100);

writeReg( 1, 16'h0002);

writeReg( 2, 16'h0003);

run(19,1);

readReg(1, out);

if(out == 16'h0002)

$display("----------------good sub3" );

else

$display("-----------------bad sub3" );

writeMem(20, 16'b0100000100100111);

writeReg( 1, 16'h7fff);

writeReg( 2, 16'hffff);

run(20,1);

readReg(1, out);

if(out == 16'h8000)

$display("----------------good sub4" );

else

$display("-----------------bad sub4" );

// writeMem(21, 16'b0101000100100111);

// writeReg( 1, 16'h0002);

// writeReg( 2, 16'h0003);

// run(21,1);

// readReg(1, out);

// if(out == 16'hffff)

// $display("----------------good cmp1" );

// else

// $display("-----------------bad cmp1" );

//

// writeMem(22, 16'b0101000100101111);

// writeReg( 1, 16'h0003);

// writeReg( 2, 16'h0002);

// writeMem( 2, 1);

// run(22,1);

// readReg(1, out);

// if(out == 16'h0002)

// $display("----------------good cmp2" );

// else

// $display("-----------------bad cmp2" );

//

// writeMem(23, 16'b0101000100100100);

// writeReg( 1, 16'h0002);

// writeReg( 2, 16'h0003);

// run(23,1);

// readReg(1, out);

// if(out == 16'h0002)

// $display("----------------good cmp3" );

// else

// $display("-----------------bad cmp3" );

writeMem(24, 16'b1000000100100111);

writeReg( 1, 16'h0003);

writeReg( 2, 16'h0005);

run(24,1);

readReg(1, out);

if(out == 16'h0001)

$display("----------------good and1" );

else

$display("-----------------bad and1" );

writeMem(25, 16'b1000000100101111);

writeReg( 1, 16'h0003);

writeReg( 2, 16'h0002);

writeMem( 2, 4);

run(25,1);

readReg(1, out);

if(out == 16'h0000)

$display("----------------good and2" );

else

$display("-----------------bad and2" );

writeMem(26, 16'b1000000100100100);

writeReg( 1, 16'h0002);

writeReg( 2, 16'h0003);

run(26,1);

readReg(1, out);

if(out == 16'h0002)

$display("----------------good and3" );

else

$display("-----------------bad and3" );

writeMem(27, 16'b1001000100100111);

writeReg( 1, 16'h0003);

writeReg( 2, 16'h0005);

run(27,1);

readReg(1, out);

if(out == 16'h0004)

$display("----------------good xor1" );

else

$display("-----------------bad xor1" );

writeMem(28, 16'b1001000100101111);

writeReg( 1, 16'h0003);

writeReg( 2, 16'h0002);

writeMem( 2, 6);

run(28,1);

readReg(1, out);

if(out == 16'h0005)

$display("----------------good xor2" );

else

$display("-----------------bad xor2" );

writeMem(29, 16'b1001000100100100);

writeReg( 1, 16'h0002);

writeReg( 2, 16'h0003);

run(29,1);

readReg(1, out);

if(out == 16'h0002)

$display("----------------good xor3" );

else

$display("-----------------bad xor3" );

writeMem(30, 16'b1100000100100111);

writeReg( 1, 16'h0003);

writeReg( 2, 16'h0005);

run(30,1);

readReg(1, out);

if(out == 16'h0007)

$display("----------------good or1" );

else

$display("-----------------bad or1" );

writeMem(31, 16'b1100000100101111);

writeReg( 1, 16'h0003);

writeReg( 2, 16'h0002);

writeMem( 2, 6);

run(31,1);

readReg(1, out);

if(out == 16'h0007)

$display("----------------good or2" );

else

$display("-----------------bad or2" );

writeMem(32, 16'b1100000100100100);

writeReg( 1, 16'h0002);

writeReg( 2, 16'h0003);

run(32,1);

readReg(1, out);

if(out == 16'h0002)

$display("----------------good or3" );

else

$display("-----------------bad or3" );