

RV32I I-Type Design

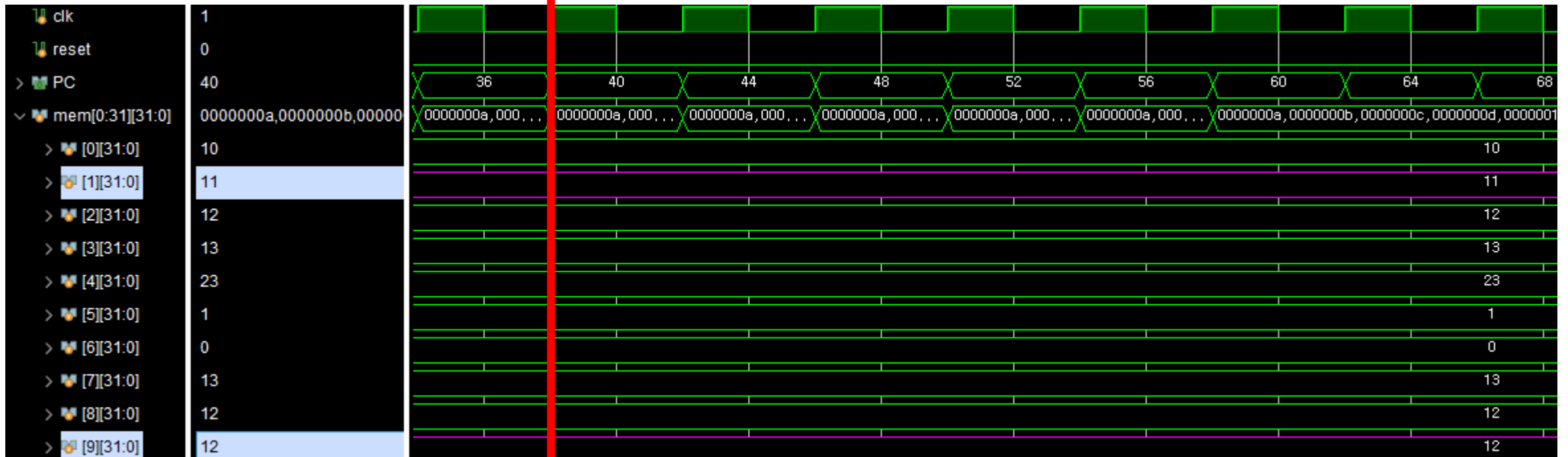
대한상공회의소 AI 시스템반도체 설계 2기

최현우

ROM 코드

```
//rom[x]=32'b imm12 _ rs1 _ f3 _ rd _ op //I-Type
rom[6] = 32'b000000000001_00001_000_01001_0010011;//addi x9, x1, 1
rom[7] = 32'b000000000100_00010_111_01010_0010011;//andi x10, x2, 2
rom[8] = 32'b000000000001_00010_110_01011_0010011;//ori x11, x2, 1
rom[9] = 32'b000000000101_00010_001_01100_0010011;//slli x12, x2, 5
rom[10] = 32'b000000000101_00010_101_01101_0010011;//srli x13, x2, 5
rom[11] = 32'b010000000011_11100_101_01110_0010011;//srai x14, x28, 3
rom[12] = 32'b000000001010_11100_010_01111_0010011;//slti x15, x28, 10
rom[13] = 32'b000000000101_00010_011_10000_0010011;//sltiu x16, x2, 5
rom[14] = 32'b000000000111_00001_100_10001_0010011;//xori x17, x1, 7
end
```

addi x9, x1, 1

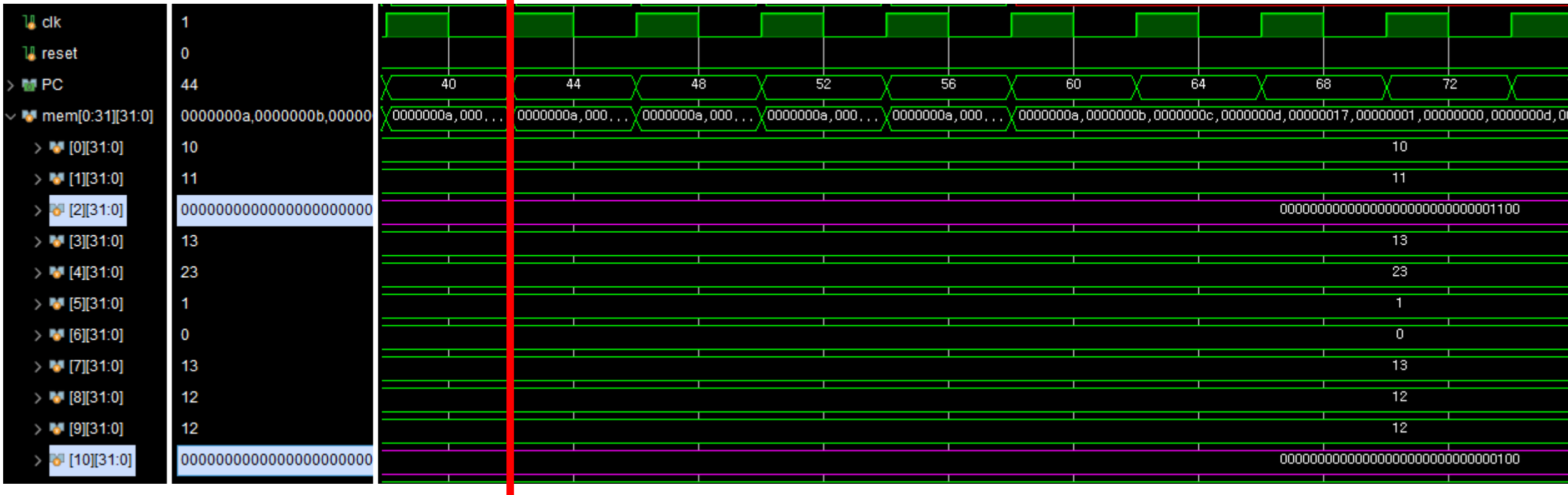


X1 = 11

Imm = 1

X9 = 12

andi x10, x2, 2

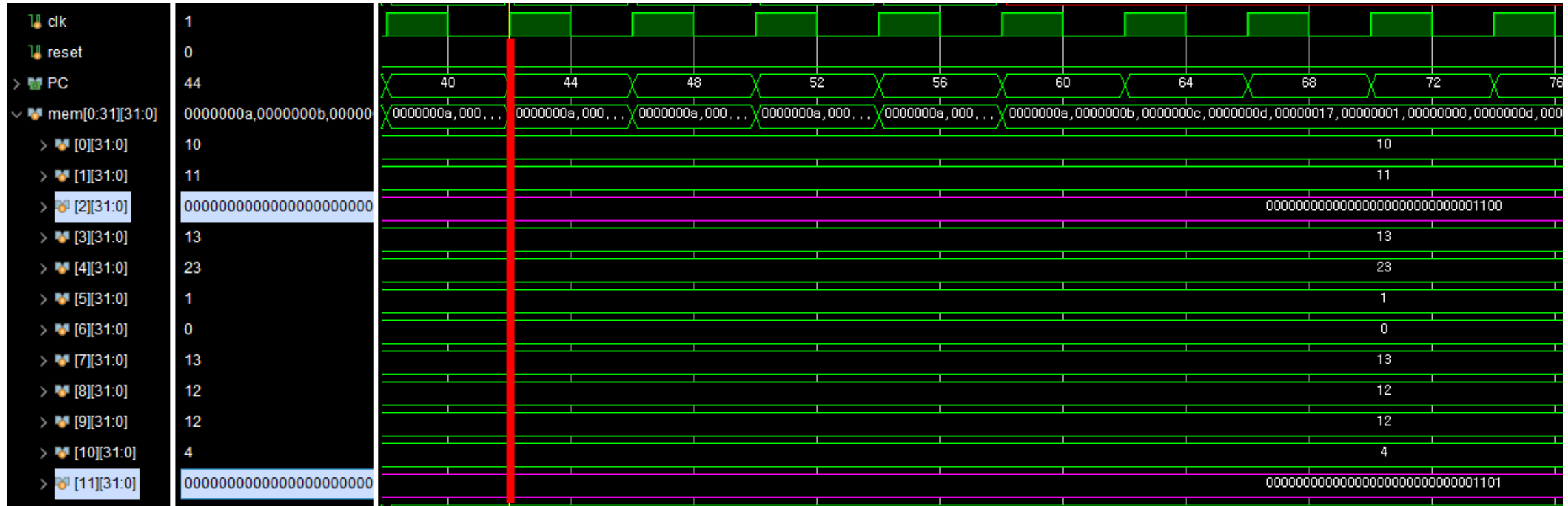


X2 = 32'b000000000000000000000000000000001100

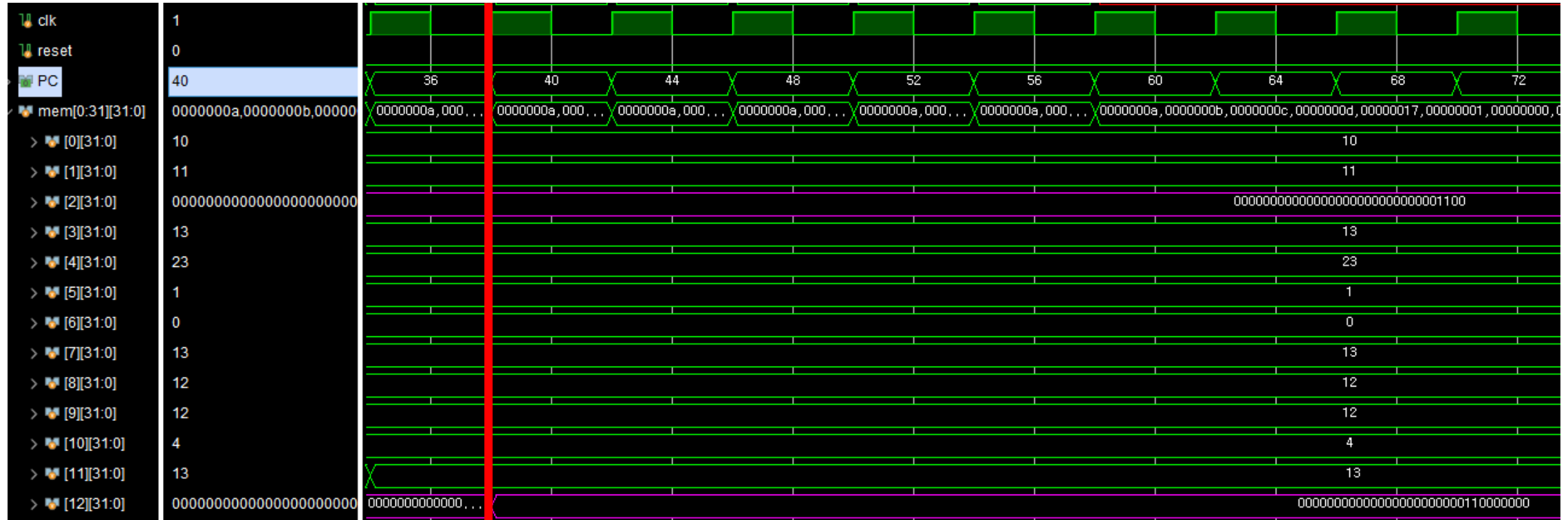
imm = 32'b00000000000000000000000000000000010

X10 = 32'b00000000000000000000000000000000

```
ori x11, x2, 1
```

[illegible][illegible][illegible]

```
slli x12, x2, 5
```

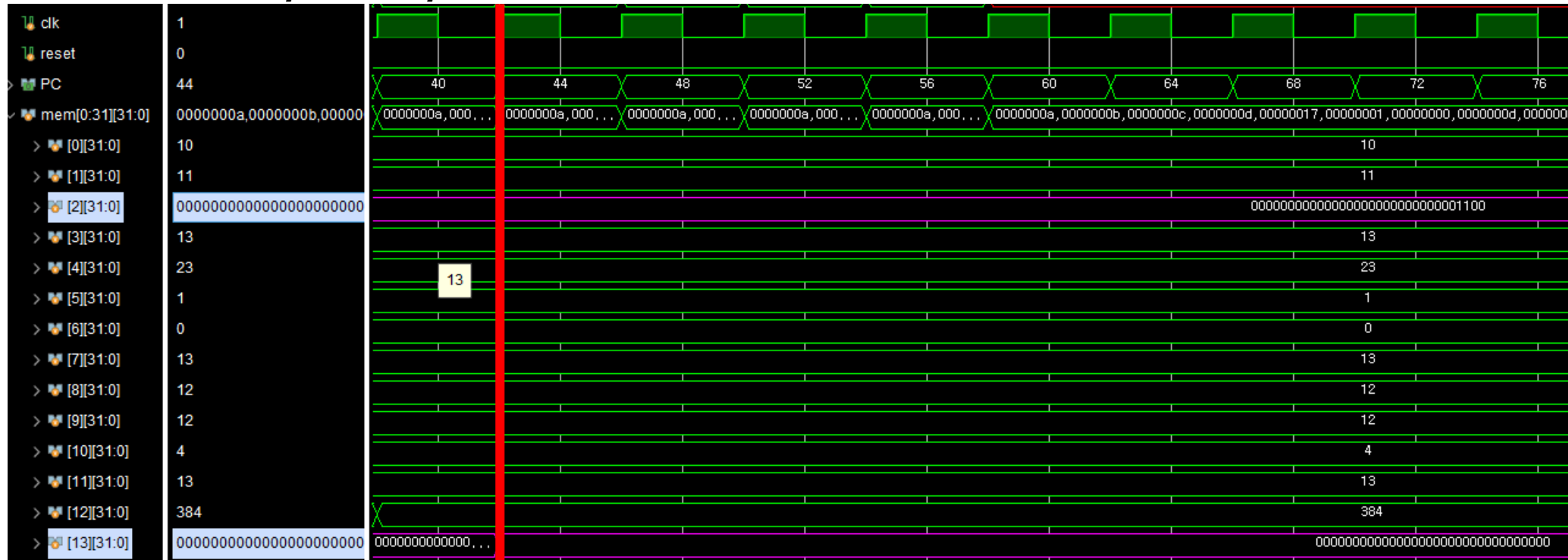


X2 = 32'b000000000000000000000000000000001100

imm = 5

X12 = 32'b0000000000000000000000000000000011**000000**

```
srli x13, x2, 5
```

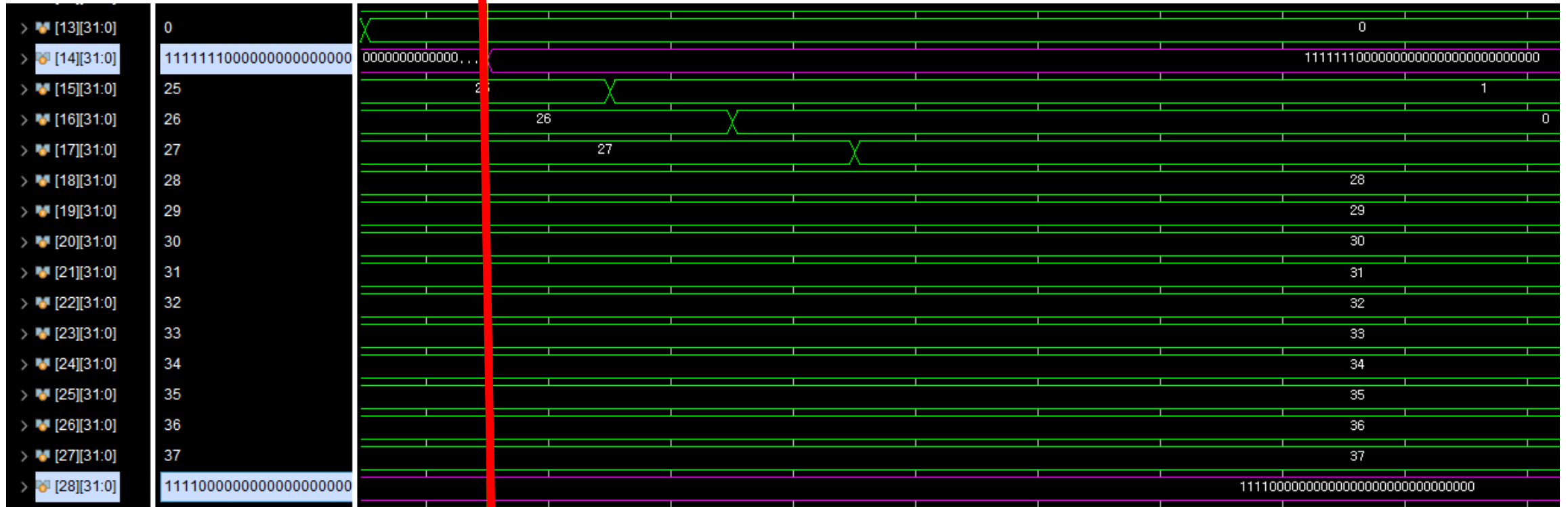


X2 = 32'b000000000000000000000000000000001100

imm = 5

X13 = 32'b00000000000000000000000000000000

srai x14, x28, 3



X28 = 32'b11110000000000000000000000000000

imm = 3

X14 = 32'b11111110000000000000000000000000

slti x15, x28, 10

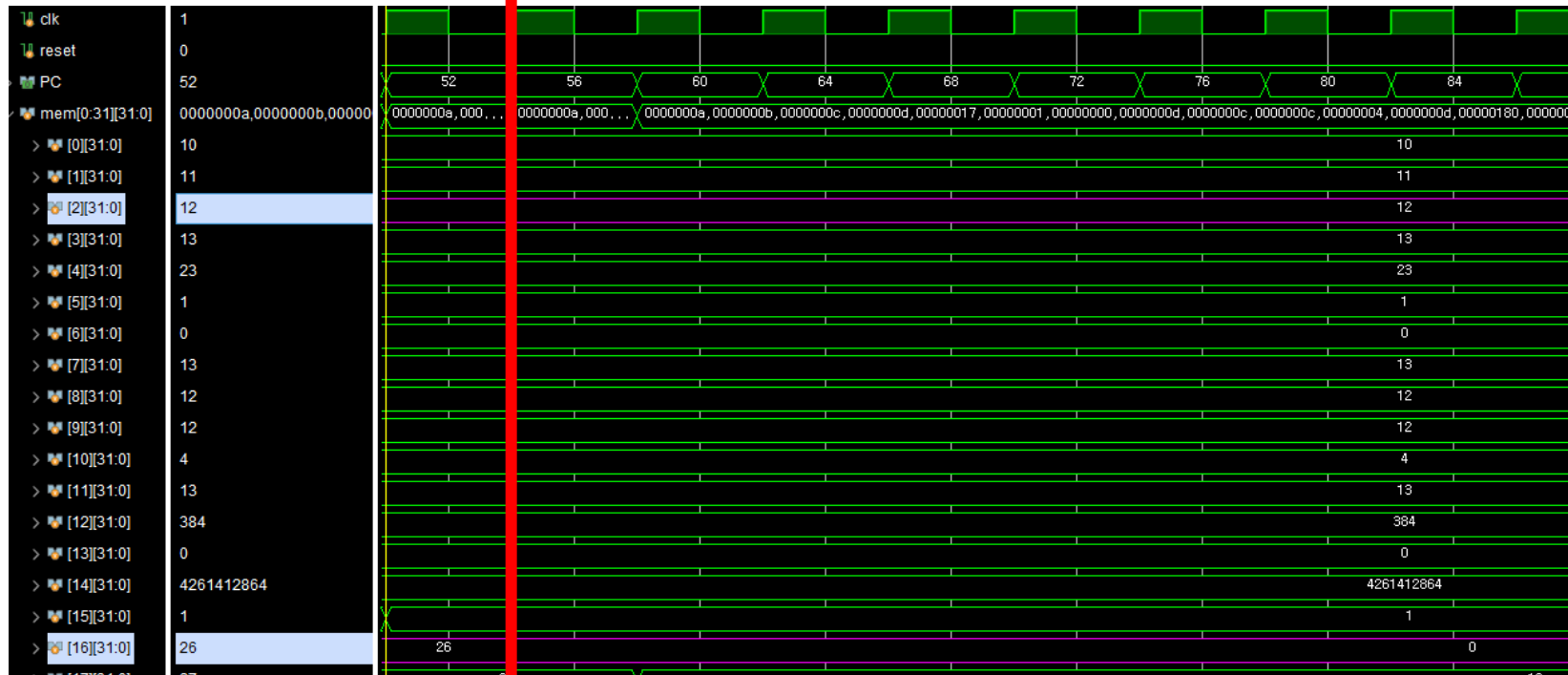


X28 = -32'd-268435456

imm = 10

X15 = 32'd1

```
sltiu x16, x2, 5
```

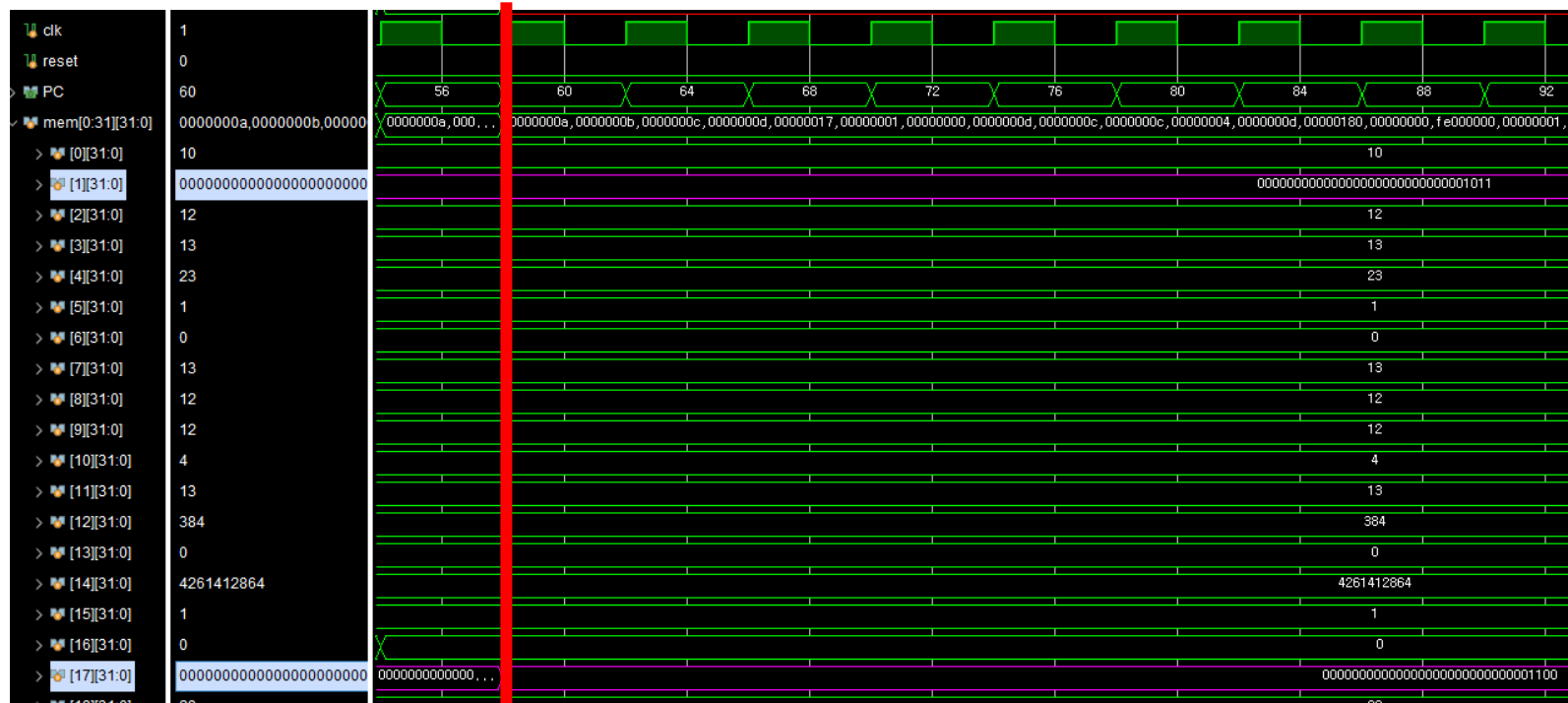


X2 = 12

imm = 5

X16 = 0

xori x17, x1, 7



X1 = 32'b000000000000000000000000000000001011

imm = 32'b000000000000000000000000000000000111

X17 = 32'b0000000000000000000000000000000001100