DCS Lab03
Maxmin

姚遠

Maxmin

- Find maximum and minimum in a sequence
- You'll be given a sequence of 15 numbers
  - e.g. 1 : [255, 102, 28, 13, 55, 76, 116 , 33, 195, 47, 206, 93, 27, 133, 109]
  - Maximum: 255
  - Minimum: 13

- Input numbers are eight bits (0~255)

Maxmin.sv

Input Signal	Bit width	Definition
clk	1	10ns clock signal
rst_n	1	Asynchronous negedge reset signal
in_num	8	Random 8-bit input number
in_valid	1	Pulled high during number inputs

Output Signal	Bit width	Definition
out_max	8	maximum
out_min	8	minimum
out_valid	1	Pulled high during output

※All output signals should be reset to make sure it's not unknown

Output & Waveform

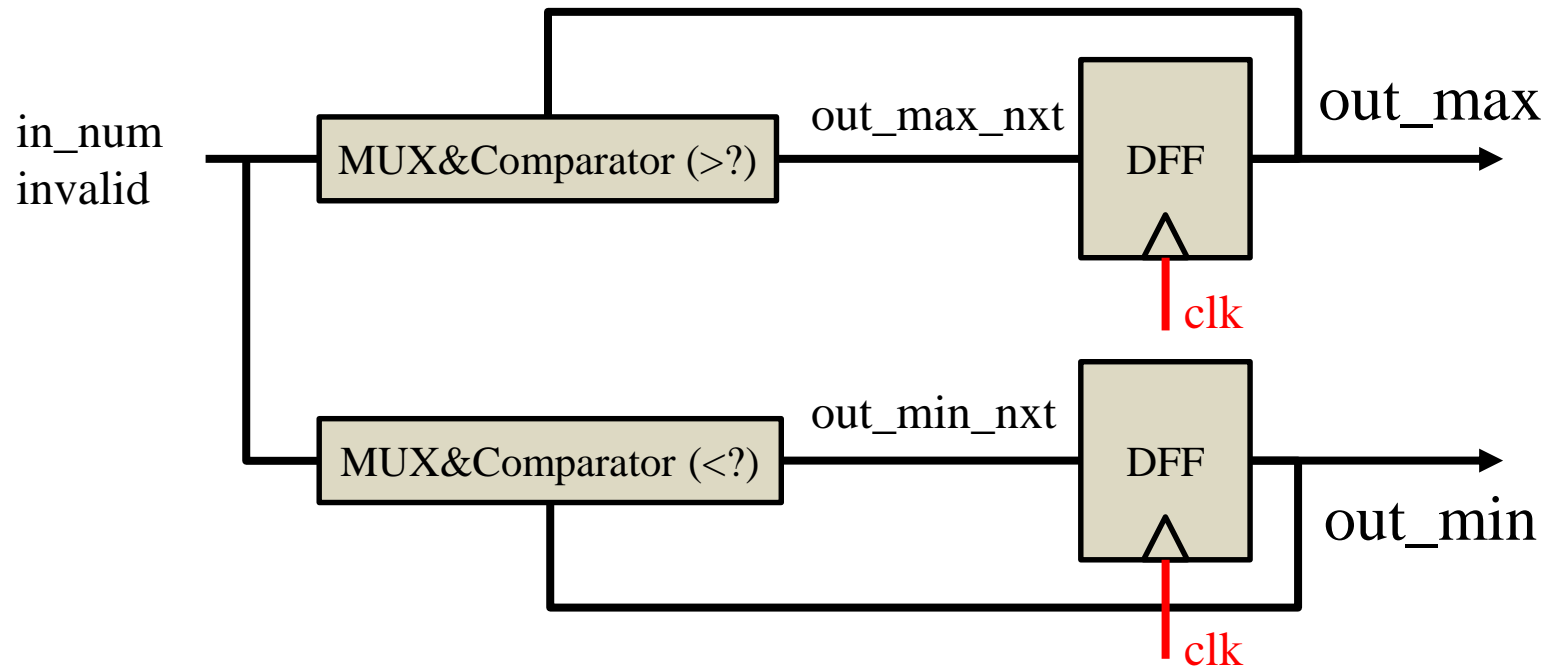negative trigger asynchronous reset

next input pattern
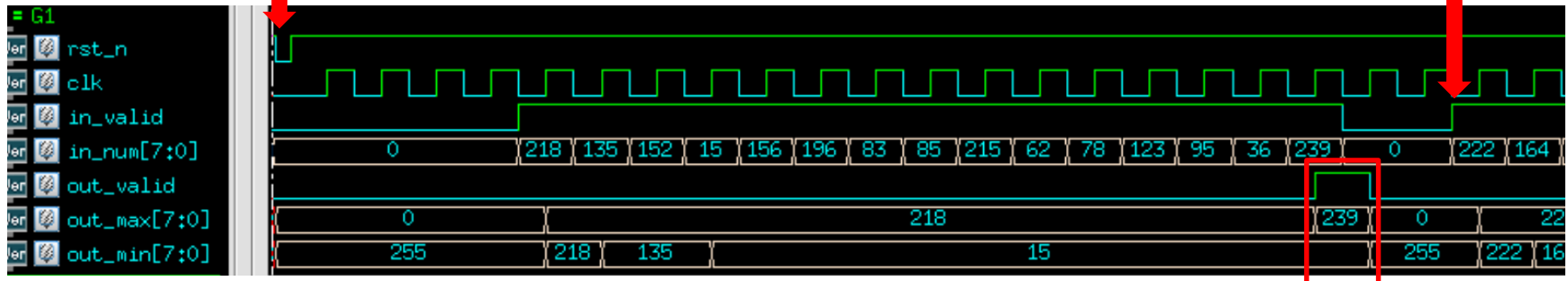
output maximum and minimum in one cycle

VLSI Signal Processing Lab.

Block diagram for your reference

Just a rough block diagram, some details are omitted, fill them in by yourself

Command

- tar -xvf ~dcsta01/Lab03.tar
- 02_SYN
  - No Latch
  - No error
  - No timing violation (MET)

- Separate combinational and sequential blocks

DEMO1: 3/17 16:25:00

DEMO2: 3/17 23:59:59

VLSI Signal Processing Lab.