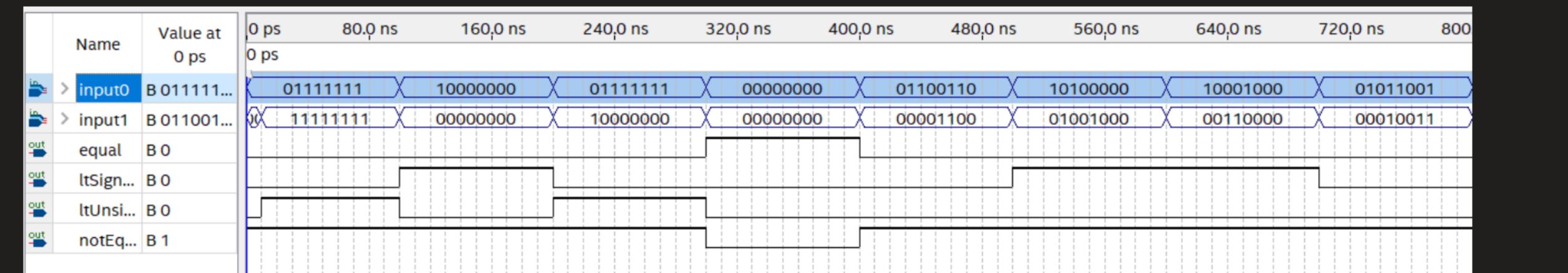
## Magnitude Comparator

```
Tuesday, April 27, 2021
                      5:04 PM
library IEEE;
use IEEE.STD LOGIC 1164.all;
use IEEE.NUMERIC STD.all;
entity CmpN is
generic (N : positive := 8);
                                                            input1[7..0]
port(input0 : in std logic vector(N-1 downto 0);
     input1 : in std logic vector(N-1 downto 0);
                                                            input0[7..0]
      equal : out std logic;
   notEqual : out std logic;
  ltSigned : out std logic;
ltUnsigned : out std logic);
end CmpN;
architecture Behavioral of CmpN is
begin
       equal <= '1' when (input0 = input1) else '0';
       notEqual <= '1' when (input0 /= input1) else '0';</pre>
       ltSigned <= '1' when (signed(input0) < signed(input1)) else '0';</pre>
       ltUnsigned <= '1' when (unsigned(input0) < unsigned(input1)) else '0';</pre>
end Behavioral;
```



LessThan0

LessThan1

notEqual~not

OUT

OUT

ltSigned

ltUnsigned

equal

notEqual

1'h0 cin

A[7..0]

B[7..0]

A[7..0]

B[7..0]

1'h0 cin

Equal0

OUT

A[7..0]

B[7..0]