數位系統導論既實習

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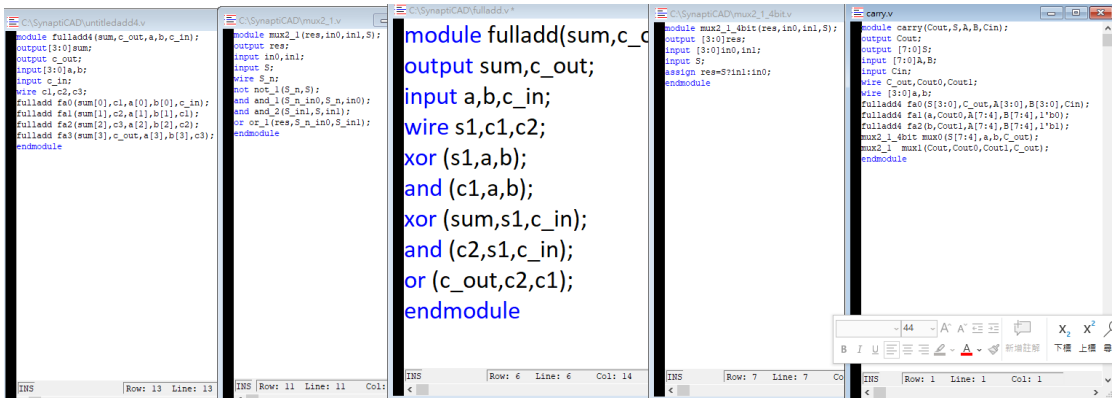
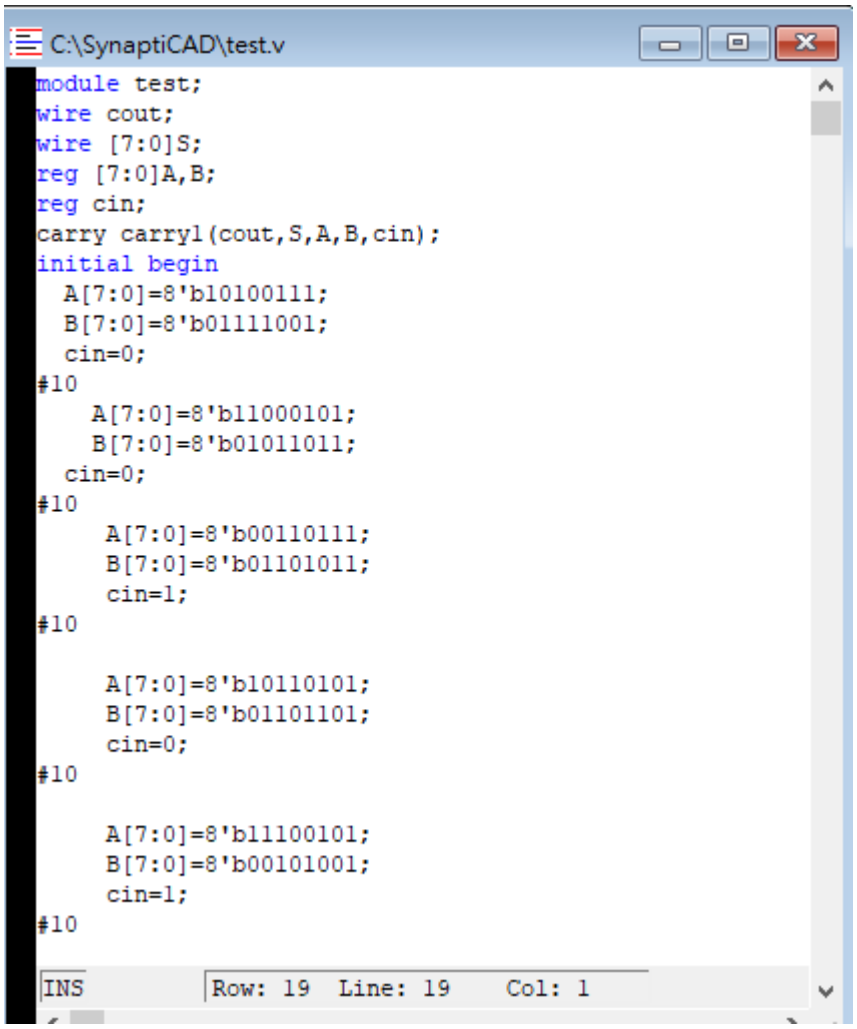
姓名:詹幼綺

程式碼內容:



```
module fulladd(sum,c_c
output sum,c_out;
input a,b,c_in;
wire s1,c1,c2;
xor (s1,a,b);
and (c1,a,b);
xor (sum,s1,c_in);
and (c2,s1,c_in);
or (c_out,c2,c1);
endmodule
```

測試檔內容:

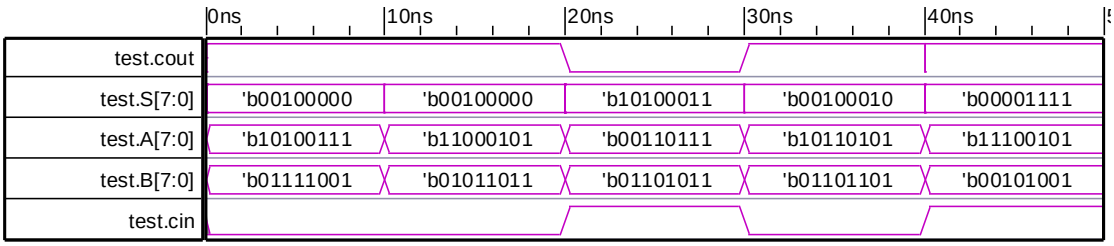


C:\SynaptiCAD\test.v

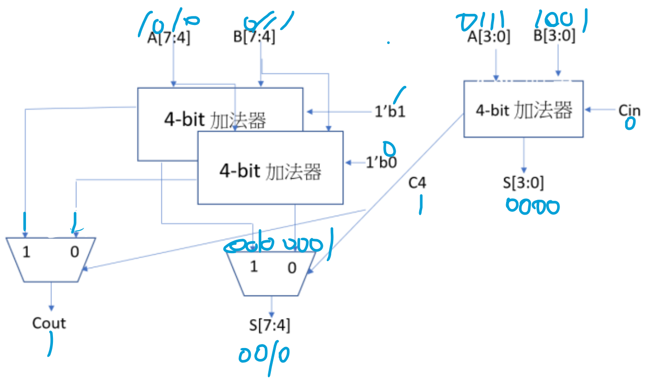
```
module test;
wire cout;
wire [7:0]S;
reg [7:0]A,B;
reg cin;
carry carry1(cout,S,A,B,cin);
initial begin
  A[7:0]=8'b10100111;
  B[7:0]=8'b01111001;
  cin=0;
#10
    A[7:0]=8'b11000101;
    B[7:0]=8'b01011011;
  cin=0;
#10
     A[7:0]=8'b00110111;
     B[7:0]=8'b01101011;
     cin=1;
#10

     A[7:0]=8'b10110101;
     B[7:0]=8'b01101101;
     cin=0;
#10

     A[7:0]=8'b11100101;
     B[7:0]=8'b00101001;
     cin=1;
#10
```

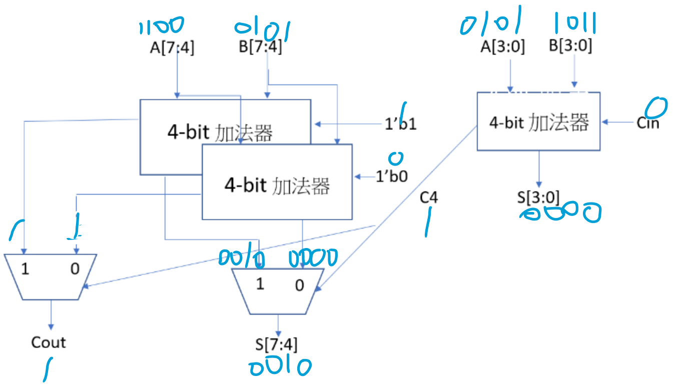
INS Row: 19 Line: 19 Col: 1

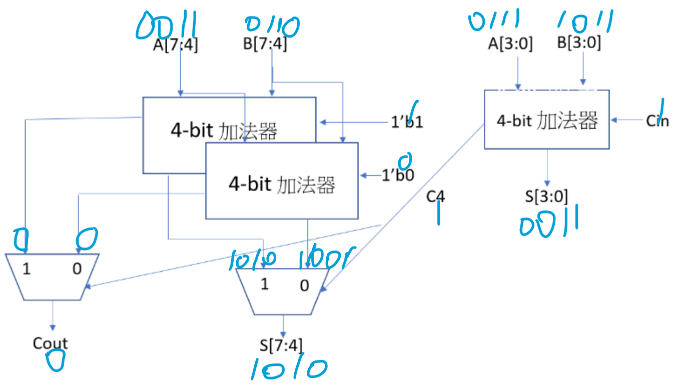
波形圖:

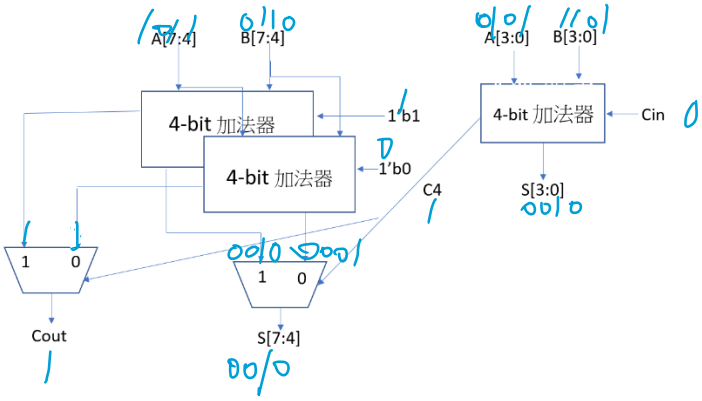

0ns
10ns
20ns
30ns
40ns
test.cout
test.S[7:0]
'b00100000
'b00100000
'b10100011
'b00100010
'b00001111
test.A[7:0]
'b10100111
'b11000101
'b00110111
'b10110101
'b11100101
test.B[7:0]
'b01111001
'b01011011
'b01101011
'b01101101
'b00101001
test.cin

手寫測試檔:


A[7:4]
B[7:4]
A[3:0]
B[3:0]
4-bit 加法器
4-bit 加法器
4-bit 加法器
1'b1
1'b0
Cin
C4
S[3:0]
1
0
1
0
Cout
S[7:4]


A[7:4]
B[7:4]
A[3:0]
B[3:0]
4-bit 加法器
4-bit 加法器
4-bit 加法器
1'b1
1'b0
Cin
C4
S[3:0]
1
0
1
0
Cout
S[7:4]


A[7:4]
B[7:4]
A[3:0]
B[3:0]
4-bit 加法器
4-bit 加法器
4-bit 加法器
1'b1
1'b0
Cin
C4
S[3:0]
1
0
1
0
Cout
S[7:4]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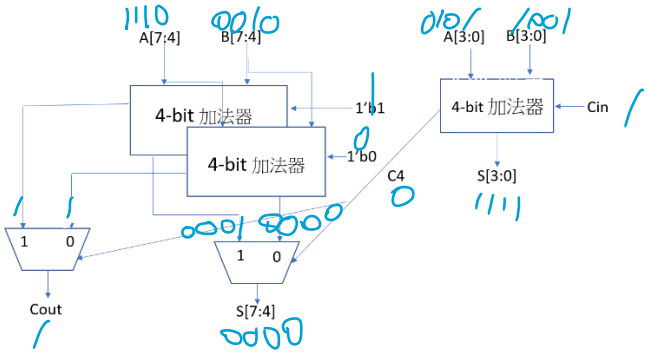
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C4
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0
1
0
Cout
S[7:4]

心得:

OK!