2021 Digital IC Design Homework 1

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Simulation Result

Functional simulation	pass	Gate-level simulation	pass	Gate-level simulation time	N/A

(your pre-s

```
#         494 data is correct
#         495 data is correct
#         496 data is correct
#         497 data is correct
#         498 data is correct
#         499 data is correct
#         500 data is correct
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#         506 data is correct
#         507 data is correct
#         508 data is correct
#         509 data is correct
#         510 data is correct
#         511 data is correct
# --------------------PASS--------------------
# All data have been generated successfully!
# Break in Module RCA_tb at D:/classes/DIC/HW1/RCA_tb.v line 45
```

im result)

(your post

```
#         495 data is correct
#         496 data is correct
#         497 data is correct
#         498 data is correct
#         499 data is correct
#         500 data is correct
#         501 data is correct
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# --------------------PASS--------------------
# All data have been generated successfully!
# Break in Module RCA_tb at D:/classes/DIC/HW1/RCA_tb.v line 45
```

sim result)

Synthesis Result

Total logic elements	10
Total memory bit	0
Embedded multiplier 9-bit element	0
Clock Width (Cycle)	10

Flow Summary	
Flow Status	Successful - Wed Mar 31 12:58:41 2021
Quartus II 64-Bit Version	13.0.1 Build 232 06/12/2013 SP 1 SJ Web Edition
Revision Name	RCA
Top-level Entity Name	RCA
Family	Cyclone II
Device	EP2C70F896C8
Timing Models	Final
Total logic elements	10 / 68,416 (< 1 %)
Total combinational functions	10 / 68,416 (< 1 %)
Dedicated logic registers	0 / 68,416 (0 %)
Total registers	0
Total pins	14 / 622 (2 %)
Total virtual pins	0
Total memory bits	0 / 1,152,000 (0 %)
Embedded Multiplier 9-bit elements	0 / 300 (0 %)
Total PLLs	0 / 4 (0 %)

Description of your design

First design a gate-level half adder with XOR and AND gate. Then combine two half adder to get a full adder, which is the basic element for target ripple carry adder.

To get a 4-bits full adder, we connect four basic full adder to reach out target.