

2021 Digital IC Design Homework 3

NAME	楊承翰				
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Simulation Result					
Functional simulation	Pass	Gate-level simulation	Pass	Gate-level simulation time	85450 (ns)
<pre># Object43: PASS # Object44: PASS # Object45: PASS # Object46: PASS # Object47: PASS # Object48: PASS # Object49: PASS # Object50: PASS # # ----- # -- Simulation finish, ALL PASS -- # # ** Note: \$finish : C:/Users/sam24/Desktop/DIC/hw3/file/presim/tb.sv(180) # Time: 85450 ns Iteration: 1 Instance: /testfixture # 1 # Break in Module testfixture at C:/Users/sam24/Desktop/DIC/hw3/file/presim/tb.sv line 180</pre>			<pre># Object43: PASS # Object44: PASS # Object45: PASS # Object46: PASS # Object47: PASS # Object48: PASS # Object49: PASS # Object50: PASS # # ----- # -- Simulation finish, ALL PASS -- # # ** Note: \$finish : C:/Users/sam24/Desktop/DIC/hw3/file/postsim/tb.sv(180) # Time: 85450 ns Iteration: 1 Instance: /testfixture # 1 # Break in Module testfixture at C:/Users/sam24/Desktop/DIC/hw3/file/postsim/tb.sv line 180</pre>		
Synthesis Result					
Total logic elements			453		
Total memory bit			0		
Embedded multiplier 9-bit element			2		
Clock width (Cycle)			50		
Flow Summary					
Flow Status		Successful - Thu May 13 13:46:48 2021			
Quartus II 64-Bit Version		13.0.1 Build 232 06/12/2013 SP 1 SJ Web Edition			
Revision Name		PSE			
Top-level Entity Name		PSE			
Family		Cyclone II			
Device		EP2C70F896C8			
Timing Models		Final			
Total logic elements		453 / 68,416 (< 1 %)			
Total combinational functions		453 / 68,416 (< 1 %)			
Dedicated logic registers		197 / 68,416 (< 1 %)			
Total registers		197			
Total pins		46 / 622 (7 %)			
Total virtual pins		0			
Total memory bits		0 / 1,152,000 (0 %)			
Embedded Multiplier 9-bit elements		2 / 300 (< 1 %)			
Total PLLs		0 / 4 (0 %)			
Description of your design					

我先寫了一個 FSM 來控制 data 的 input 及 output
分成四個 state
第一個 reset
用來 reset 各個 reg 的
第二個 load
會根據輸入的 point_num 的值來決定要跑幾個 cycle，每個 cycle 會去讀 Xin,
Yin 並分別存到 coordinate_x, coordinate_y
第三個 sort
做 bubble sort
第四個 write
依序將排序好的座標送給 Xout,Yout

Scoring = Total logic elements