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Brief introduction about the overall system. What is observed & learned?

這個 lab 讓我稍微了解 Vitis 和 vivado 的操作過程，我發現到 vivado 有許多功能等著我去探索，之後可以利用 waveform 的功能來幫助我了解電路。

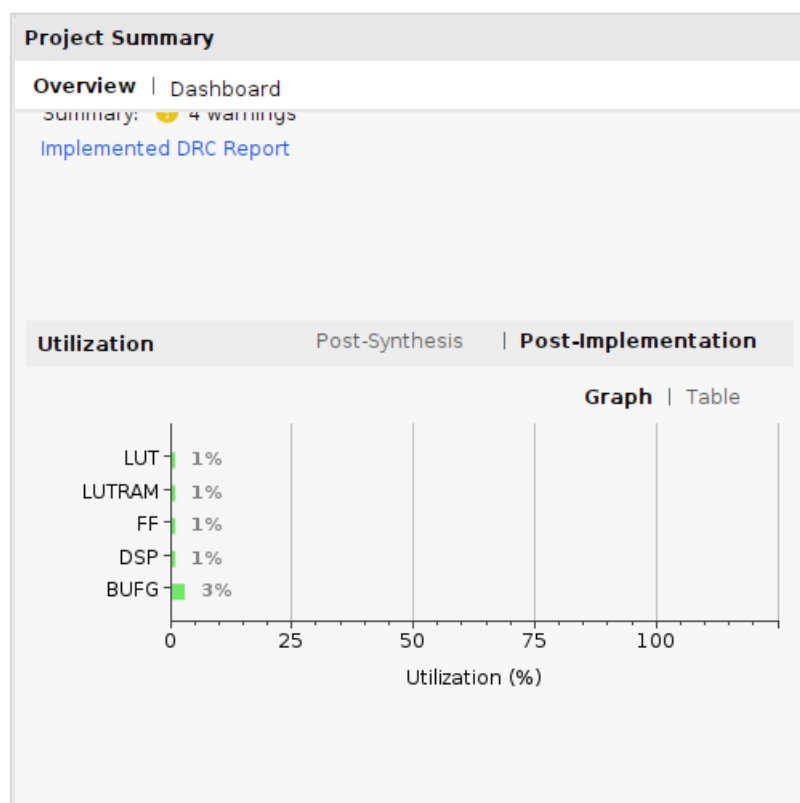
Screen dump – Performance

Performance & Resource Estimates ⓘ

✓ Modules ✓ Loops

Modules & Loops	Issue Type	Violation Type	Distance	Slack	Latency(cycles)	Latency(ns)	Iteration Latency	Interval	Trip Count	Pipelined	BRAM	DSP	FF	LUT	URAM	
<div><div></div> multip_2num</div>				-	3	30.000		-	4	-	no	0	3	409	307	0

Screen dump – Utilization



Screen dump – Interface

HW Interfaces

S_AXILITE Interfaces

Interface	Data Width	Address Width	Offset	Register
s_axi_control	32	6	16	0

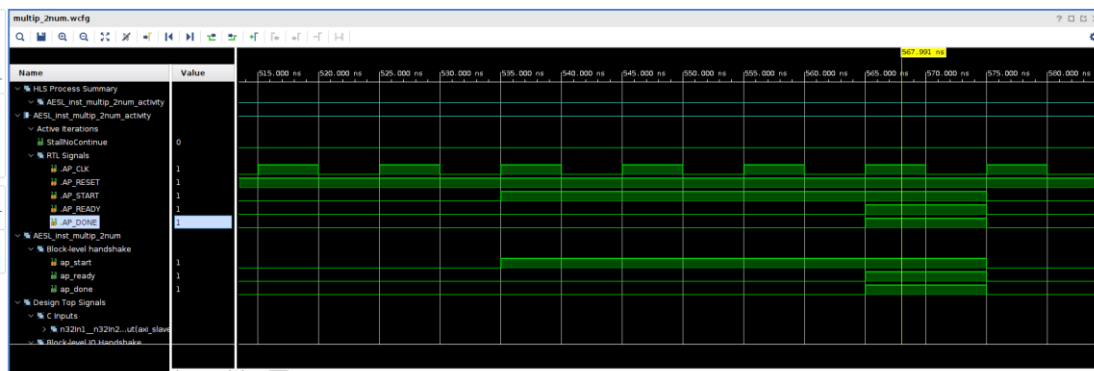
S_AXILITE Registers

Interface	Register	Offset	Width	Access	Description	Bit Fields
s_axi_control	n32In1	0x10	32	W	Data signal of n32In1	
s_axi_control	n32In2	0x18	32	W	Data signal of n32In2	
s_axi_control	pn32ResOut	0x20	32	R	Data signal of pn32ResOut	
s_axi_control	pn32ResOut_ctrl	0x24	32	R	Control signal of pn32ResOut	0=pn32ResOut_ap_vld

TOP LEVEL CONTROL

Interface	Type	Ports
ap_clk	clock	ap_clk
ap_rst_n	reset	ap_rst_n
ap_ctrl	ap_ctrl_none	

Screen dump -Co-simulation transcript/waveform



Screen dump - Jupyter Notebook execution results

```
print(str(i + 1) + " * " + str(j + 1) + " = " + str(Res))  
print("=====")  
print("Exit process")
```

Entry: /usr/local/share/pynq-venv/lib/python3.8/site-packages/ipykernel_launcher.py
System argument(s): 3
Start of "/usr/local/share/pynq-venv/lib/python3.8/site-packages/ipykernel_launcher.py"

```
1 * 1 = 1  
1 * 2 = 2  
1 * 3 = 3  
1 * 4 = 4  
1 * 5 = 5  
1 * 6 = 6  
1 * 7 = 7  
1 * 8 = 8  
1 * 9 = 9
```

```
2 * 1 = 2  
2 * 2 = 4  
2 * 3 = 6  
2 * 4 = 8  
2 * 5 = 10  
2 * 6 = 12  
2 * 7 = 14  
2 * 8 = 16  
2 * 9 = 18
```

```
3 * 1 = 3  
3 * 2 = 6  
3 * 3 = 9  
3 * 4 = 12  
3 * 5 = 15  
3 * 6 = 18  
3 * 7 = 21  
3 * 8 = 24  
3 * 9 = 27
```

```
4 * 1 = 4  
4 * 2 = 8  
4 * 3 = 12  
4 * 4 = 16  
4 * 5 = 20  
4 * 6 = 24  
4 * 7 = 28  
4 * 8 = 32  
4 * 9 = 36
```

```
5 * 1 = 5  
5 * 2 = 10  
5 * 3 = 15  
5 * 4 = 20  
5 * 5 = 25  
5 * 6 = 30  
5 * 7 = 35  
5 * 8 = 40  
5 * 9 = 45
```

```
6 * 1 = 6  
6 * 2 = 12  
6 * 3 = 18  
6 * 4 = 24  
6 * 5 = 30  
6 * 6 = 36  
6 * 7 = 42  
6 * 8 = 48
```

$$6 * 9 = 54$$

$$7 * 1 = 7$$

$$7 * 2 = 14$$

$$7 * 3 = 21$$

$$7 * 4 = 28$$

$$7 * 5 = 35$$

$$7 * 6 = 42$$

$$7 * 7 = 49$$

$$7 * 8 = 56$$

$$7 * 9 = 63$$

$$8 * 1 = 8$$

$$8 * 2 = 16$$

$$8 * 3 = 24$$

$$8 * 4 = 32$$

$$8 * 5 = 40$$

$$8 * 6 = 48$$

$$8 * 7 = 56$$

$$8 * 8 = 64$$

$$8 * 9 = 72$$

$$9 * 1 = 9$$

$$9 * 2 = 18$$

$$9 * 3 = 27$$

$$9 * 4 = 36$$

$$9 * 5 = 45$$

$$9 * 6 = 54$$

$$9 * 7 = 63$$

$$9 * 8 = 72$$

$$9 * 9 = 81$$

Exit process