VLSI DESIGN AND AUTOMATION SUMMER INTERNSHIP

WEEK 5 SUBMISSION

RESOURCE HERE : WEEK 5 (ENC and NETLIST files are here)

BEFORE FILE TEXT :

tempus 5> report_timing -late

###
#####

Generated by: Cadence Tempus 20.20-p001_1

OS: Linux x86_64(Host ID vlsidaug9.jiit.ac.in)

Generated on: Mon Jul 14 13:51:23 2025

Design: vending_machine

Command: report_timing -late

###
#####

Path 1: MET Setup Check with Pin out_reg/CK

Endpoint: out_reg/SE (v) checked with leading edge of 'clk'

Beginpoint: in[0] (v) triggered by leading edge of 'clk'

Path Groups: {clk}

Analysis View: WORST

Other End Arrival Time 0.000

- Setup 0.230

+ Phase Shift 10.000

- Uncertainty 0.200

= Required Time 9.570

- Arrival Time 0.448

= Slack Time 9.123

Clock Rise Edge 0.000

+ Input Delay 0.300

= Beginpoint Arrival Time 0.300

Instance	Arc	Cell	Delay	Arrival Time	Required Time
	in[0] v			0.300	9.423
g411	A v -> Y ^	INVX1	0.023	0.324	9.446
g409	A0 ^ -> Y v	OAI21XL	0.124	0.448	9.570
out_reg	SE v	SDFFTRX1	0.000	0.448	9.570

tempus 4> tempus 4> report_timing -early

##########

#####

Generated by: Cadence Tempus 20.20-p001_1

OS: Linux x86_64(Host ID vlsidaug9.jiit.ac.in)

Generated on: Mon Jul 14 13:49:51 2025

Design: vending_machine

Command: report_timing -early

##

Path 1: VIOLATED Hold Check with Pin present_state_reg/CK

Endpoint: present_state_reg/D (v) checked with leading edge of 'clk'

Beginpoint: next_state_reg/Q (v) triggered by leading edge of 'clk'

Path Groups: {clk}

Analysis View: BEST

Other End Arrival Time	0.000
+ Hold	0.031
+ Phase Shift	0.000
+ Uncertainty	0.200
= Required Time	0.231
Arrival Time	0.116
Slack Time	-0.116
Clock Rise Edge	0.000
+ Clock Network Latency (Ideal)	0.000
= Beginpoint Arrival Time	0.000

Instance	Arc	Cell	Delay	Arrival Time	Required Time

```
|------------------+------------+--------+------+--------+---------|
  | next_state_reg   | CK ^       |        |      |  0.000 |   0.116 |
| next_state_reg   | CK ^ -> Q v | DFFX1  | 0.116 |  0.116 |   0.231 |
| present_state_reg | D v        | DFFTRX1 | 0.000 |  0.116 |   0.231 |
   +-------------------------------------------------------------------+
```


SCREENSHOTS :