

Ahsanullah University of Science and Technology

Department of Electrical and Electronic Engineering

4th Year 1st Semester

ASSIGNMENT

Course No. : **EEE-4133**

Course Title : **VLSI-I**

Section : **D1**

Group : **G1**

Submitted By,

SL No.	Student Name	Student ID
01	Md. Mamunar Rahoman Roton	20200105196

Submitted To,

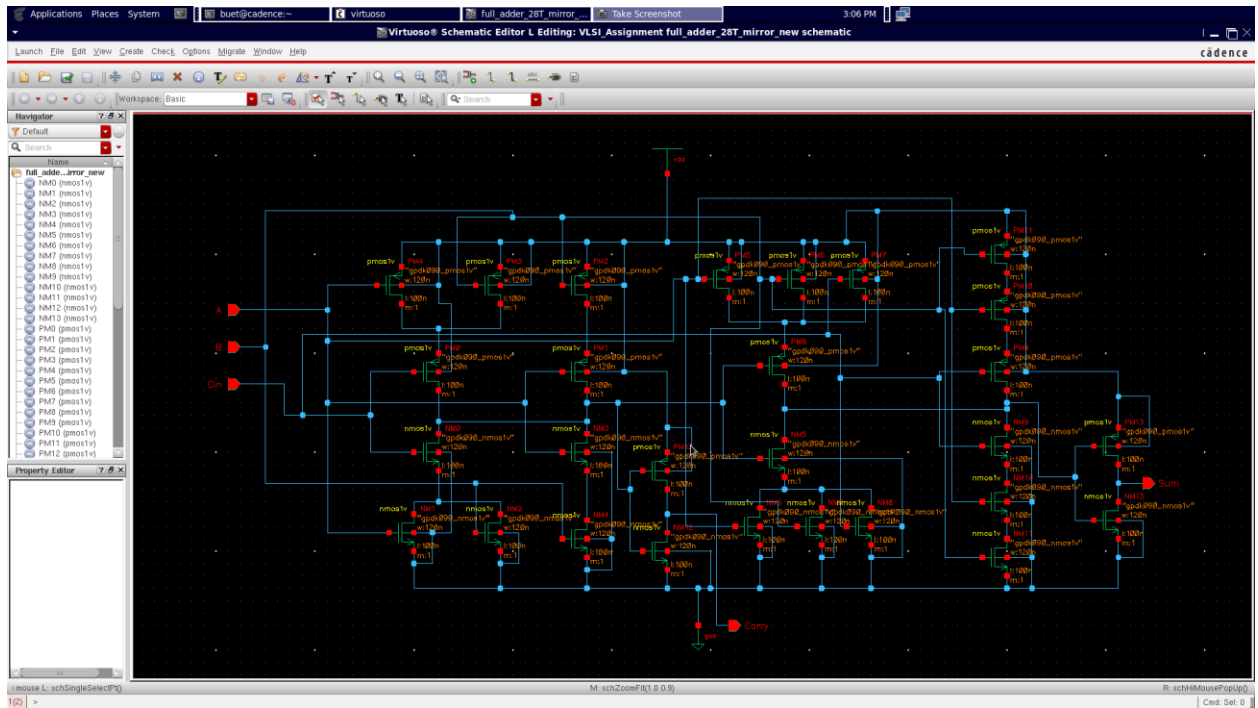
Mr. Dewan Monzurul Islam

Department of Electrical and Electronic Engineering

Ahsanullah University of Science and Technology

Assignment Topic : Assignment on 28-T CMOS Mirror Full Adder.

Schematic on Virtuoso :

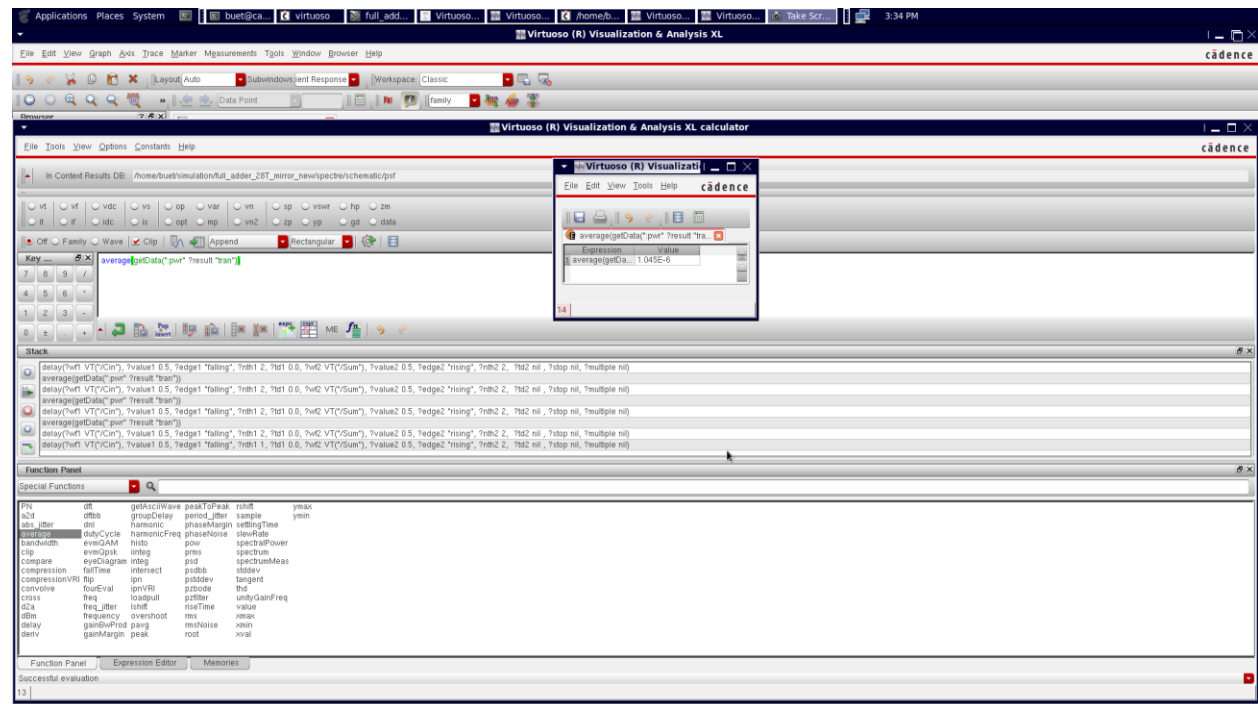


Output Wave Shape :

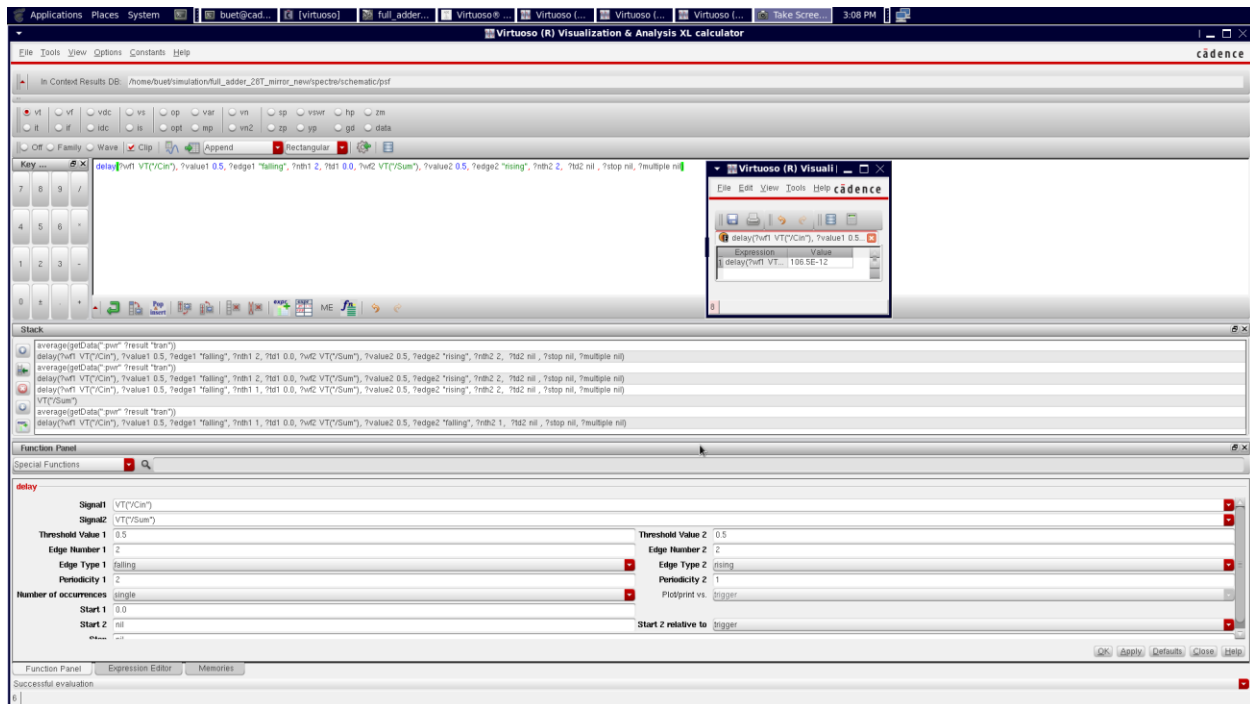


The screenshot displays the Virtuoso (R) Visualization & Analysis XL calculator interface. The main window shows a circuit schematic with various components like resistors, capacitors, and inductors. A 'Function Panel' is open on the left, displaying a list of functions. A 'Special Functions' section is also visible. The top status bar indicates 'Virtuoso (R) Visualization & Analysis XL calculator' and 'cadence'.

Average Power After Transistor Sizing :

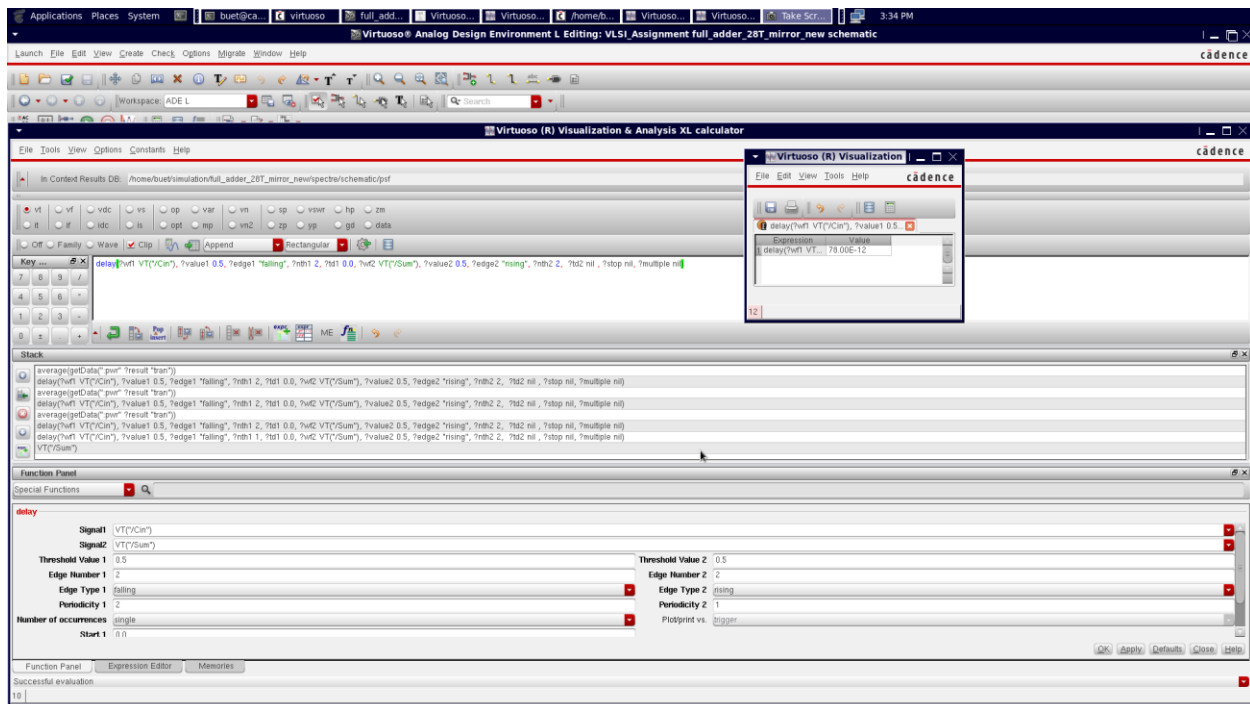


Propagation Delay Before Transistor Sizing :



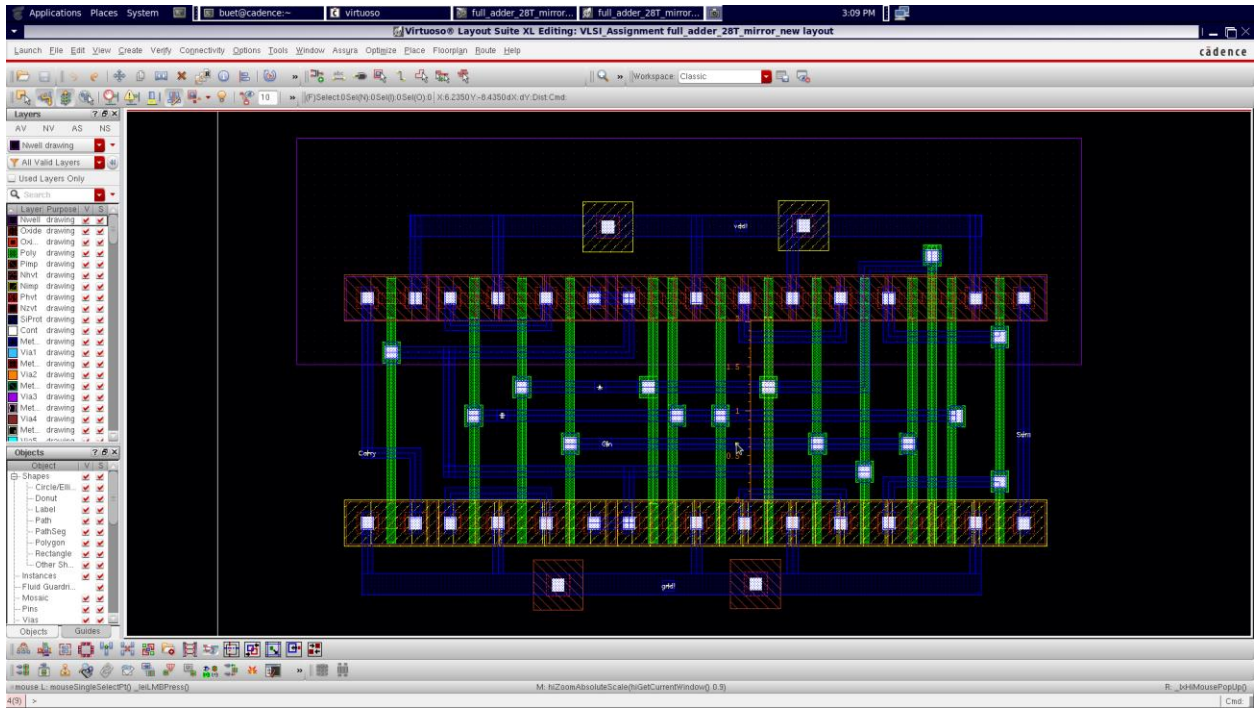
Propagation Delay Before Transistor Sizing = 106.4 E-12 s

Propagation Delay After Transistor Sizing :

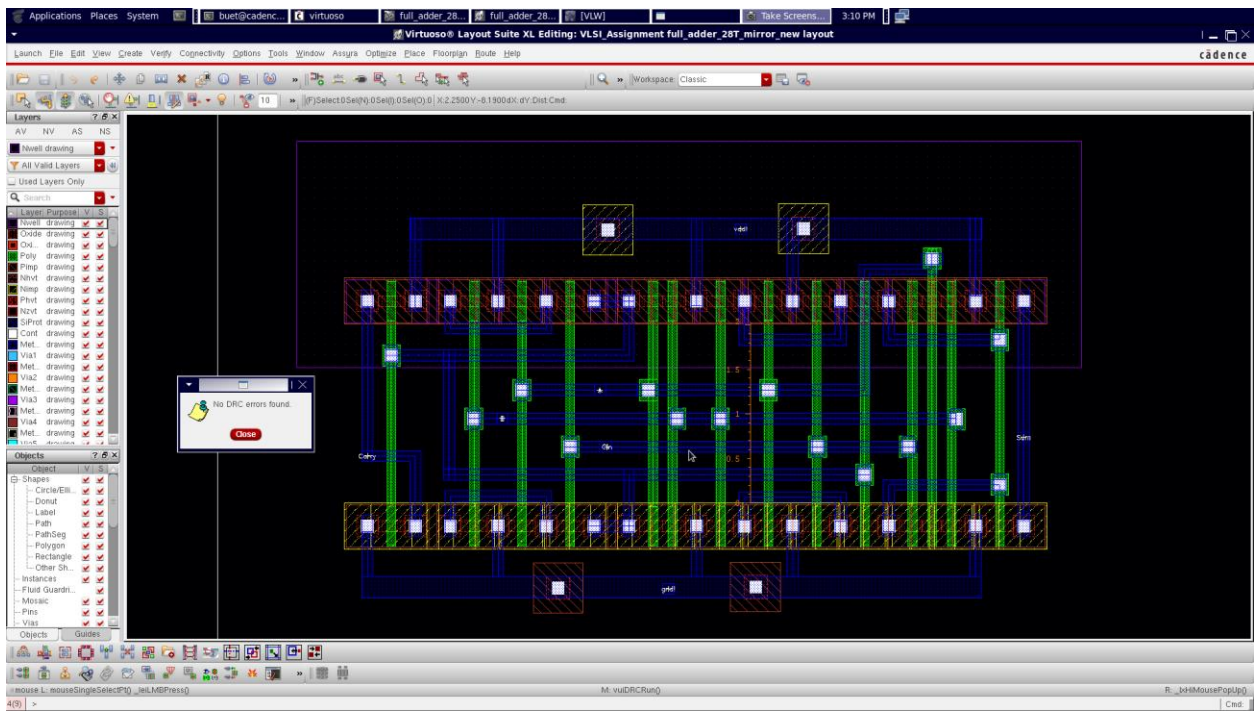


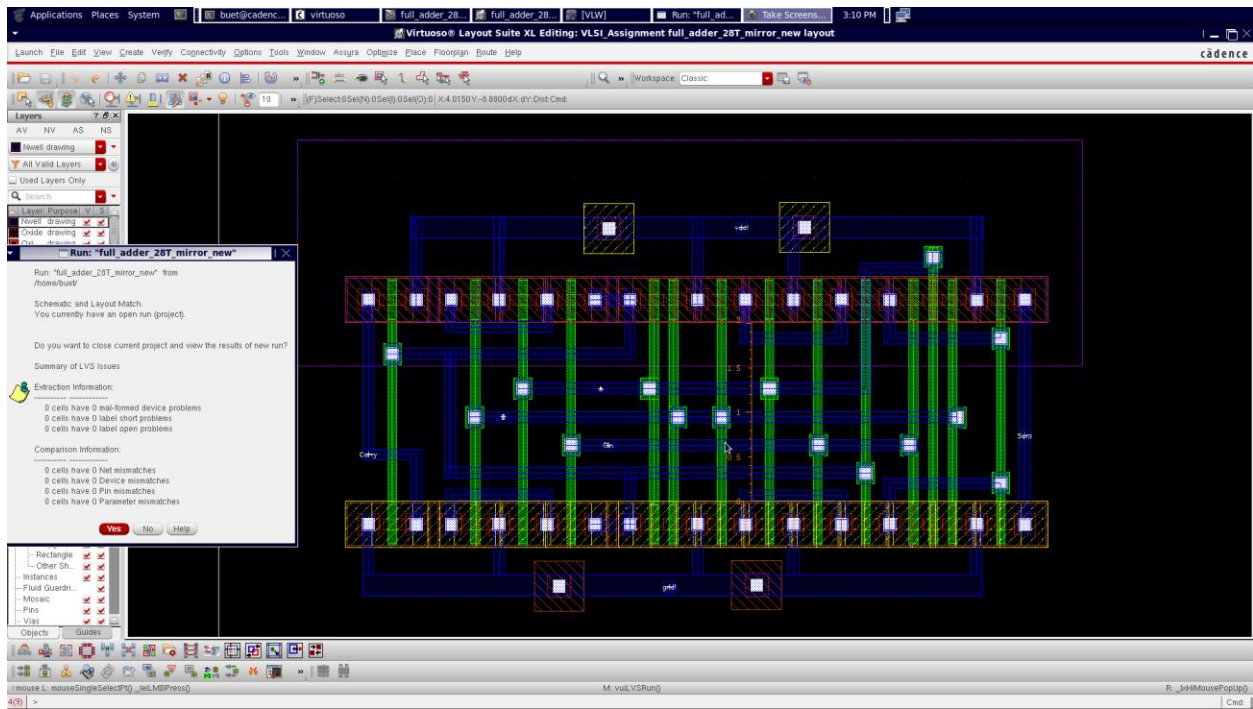
Propagation Delay After Transistor Sizing = 78.00 E-12 s

Layout Before Transistor Sizing :

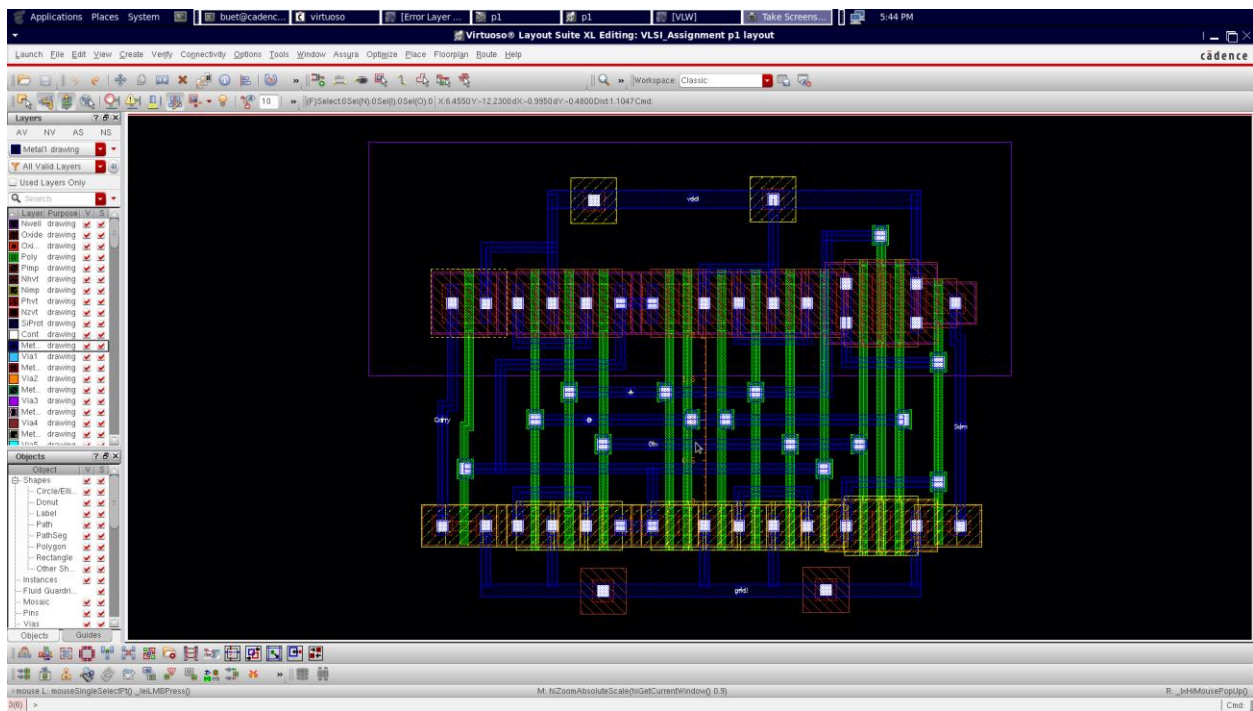


DRC AND LVS check :

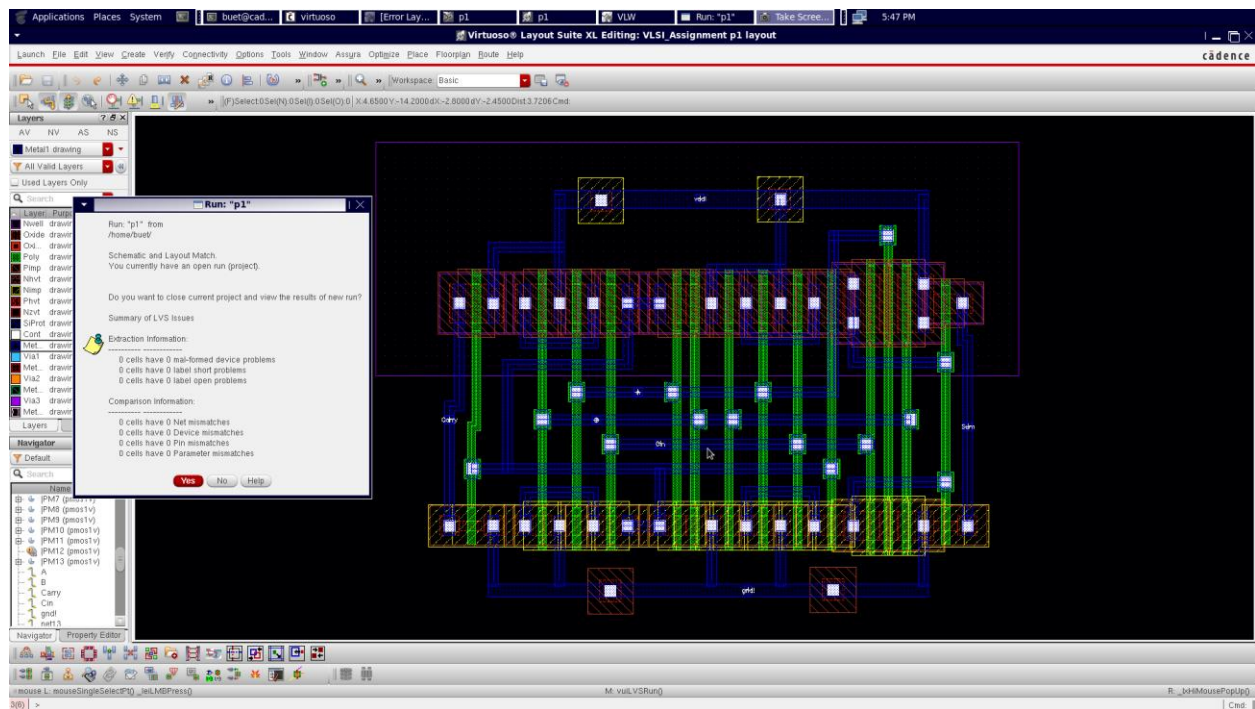
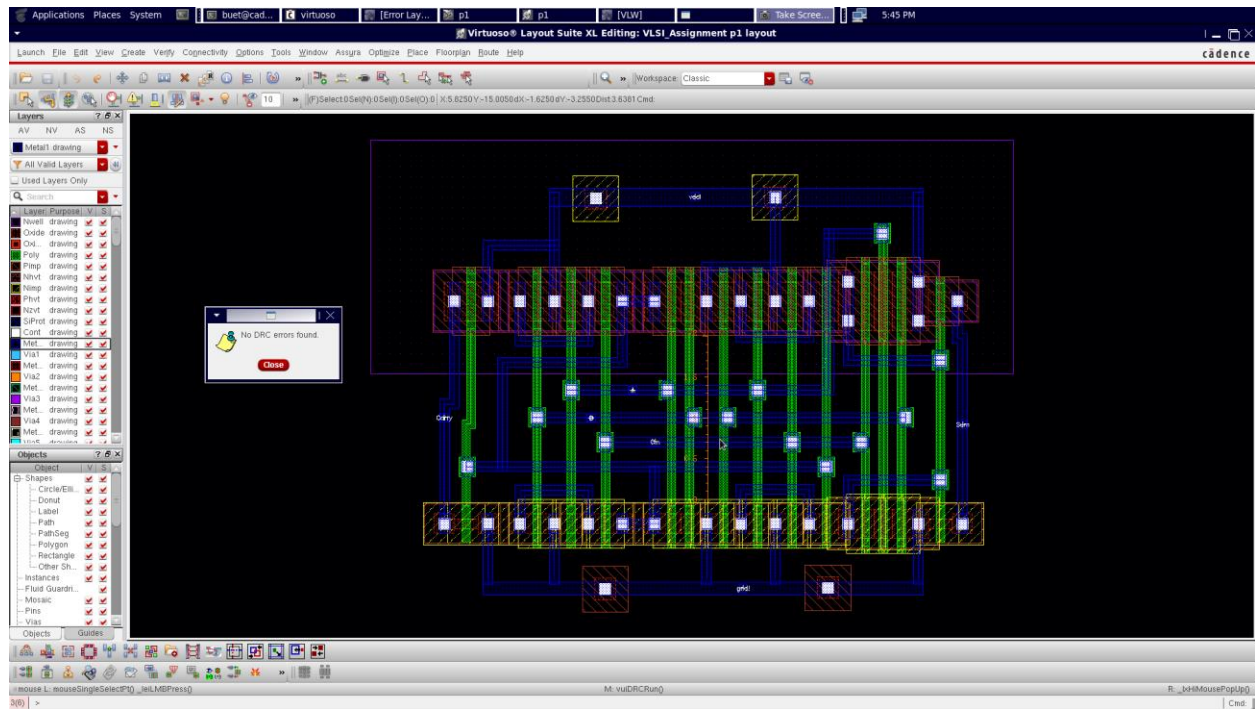




Layout After Transistor Sizing :



DRC AND LVS check :



Power Delay product before transistor sizing, PDP : 5072.088 E-20 J

Power Delay product after transistor sizing, PDP : 8182.200 E-20 J

Energy Delay Product before transistor sizing, EDP : 53.9670 E-28 Js

Energy Delay Product after transistor sizing, EDP : 63.8211 E-28 Js

Result Comparison			
Before Transistor sizing		After Transistor Sizing	
Avg. Power	476.7 E-9 W	Avg. Power	1.049 E-6 W
Propagation Delay	106.4 E-12 s	Propagation Delay	78.00 E-12 s
PDP	5072.088 E-20 J	PDP	8182.200 E-20 J
EDP	53.9670 E-28 Js	EDP	63.8211 E-28 Js