

Experiment 2

Aim: To verify truth table of AND gate using esim software

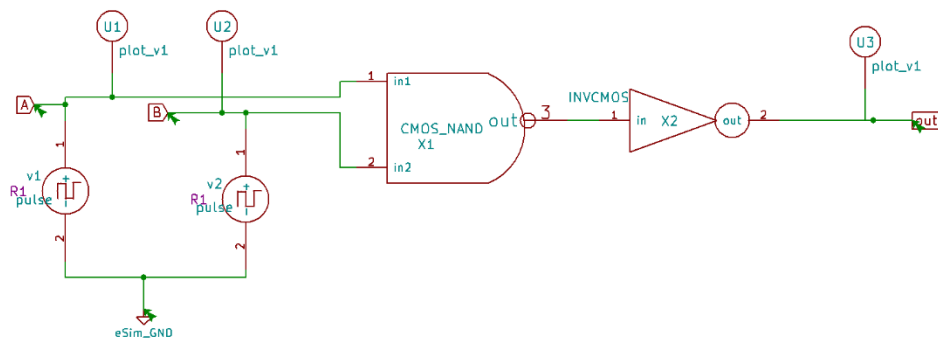
Theory: AND gate:

The AND gate is an electronic circuit that gives a **high** output (1) only if **all** its inputs are high. A dot (.) is used to show the AND operation i.e. A.B. Bear in mind that this dot is sometimes omitted i.e. AB

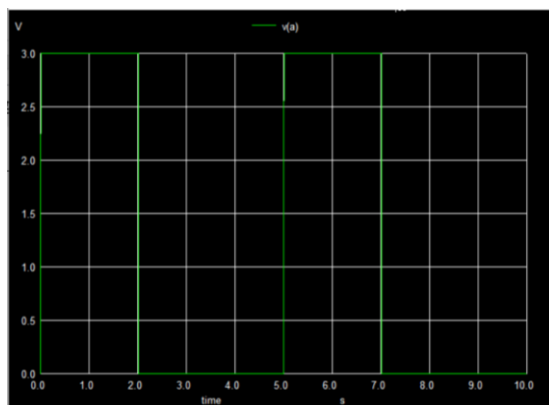
2 Input AND gate		
A	B	A.B
0	0	0
0	1	0
1	0	0
1	1	1



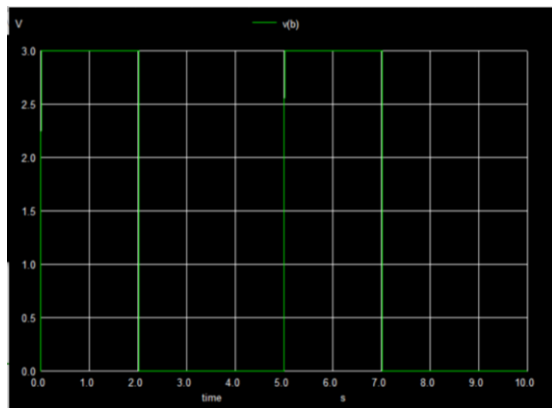
Circuit Diagram:



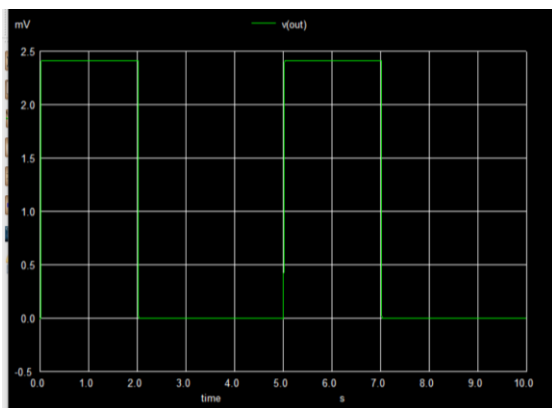
NGSPICE Plot of Input a:



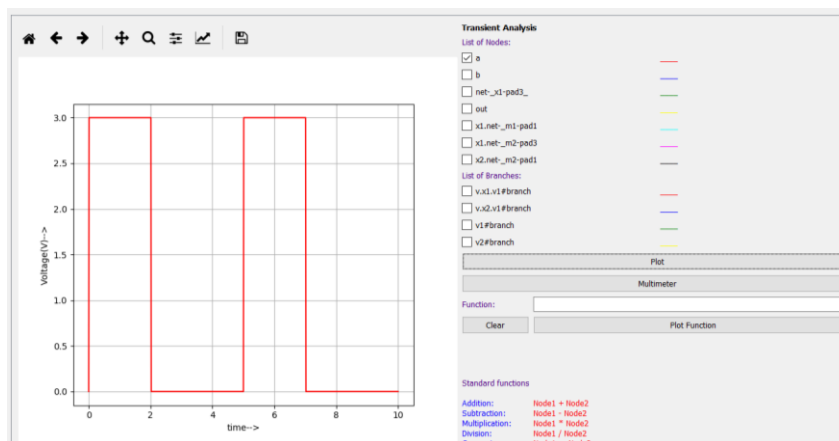
NGSPICE Plot of input b:



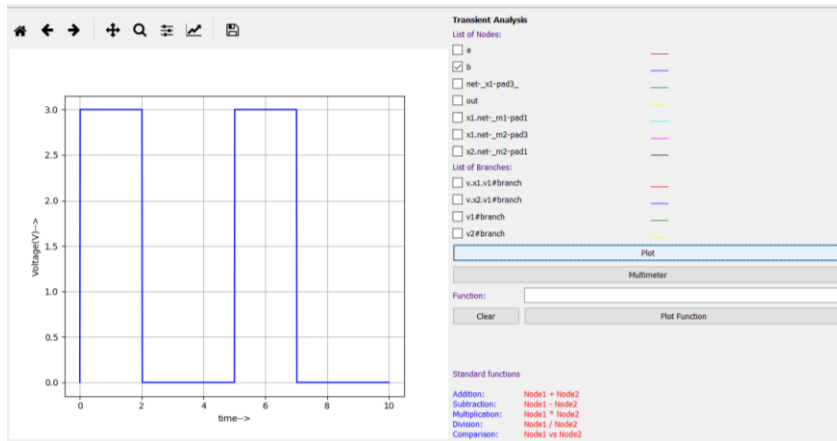
NGSPICE plot of output :



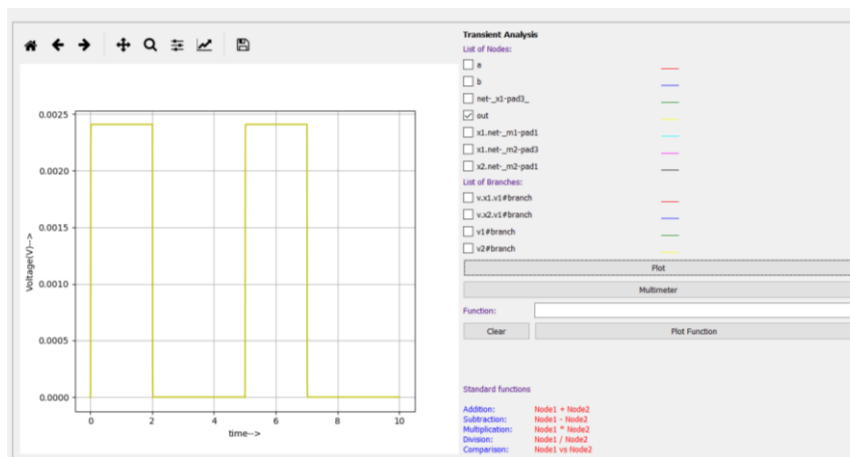
Python Plot of input a:



Python Plot of input b:



Python Plot of output:



Source/Reference(s) :

1) Digital logic and computer Design by Morris Mano

2)CMOS VLSI Design A circuit and systems perspective by Neil H.E.Weste,David M.Harris. fourth edition.