

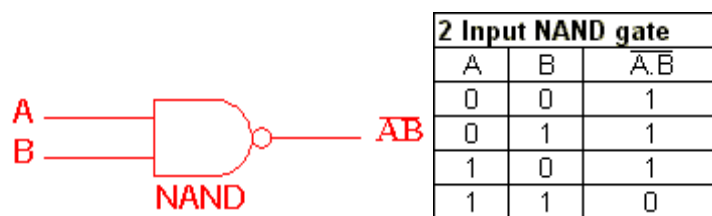
Experiment 3

Aim: To verify truth table of NAND gate.

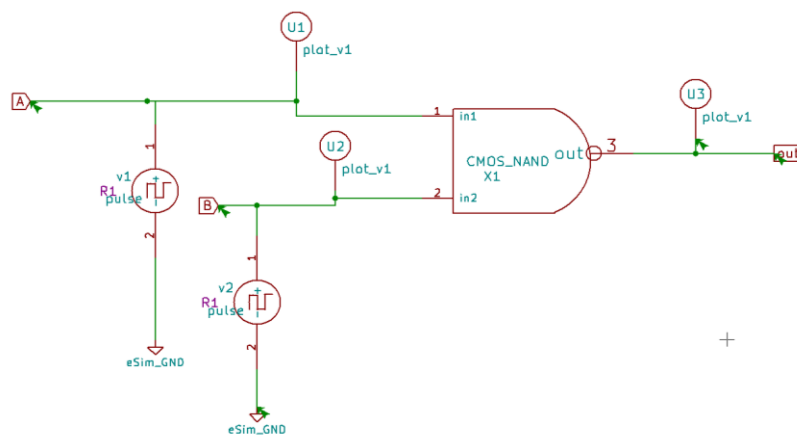
Theory:

NAND gate:

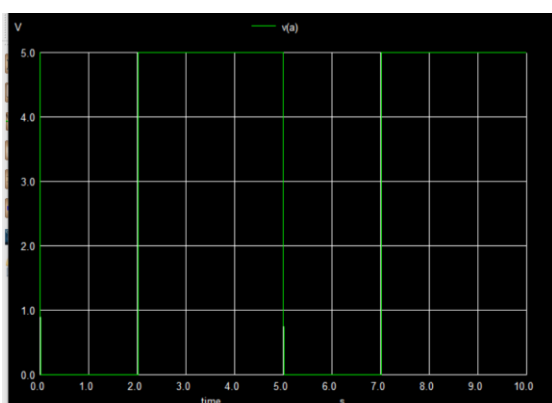
This is a NOT-AND gate which is equal to an AND gate followed by a NOT gate. The outputs of all NAND gates are high if **any** of the inputs are low. The symbol is an AND gate with a small circle on the output. The small circle represents inversion.



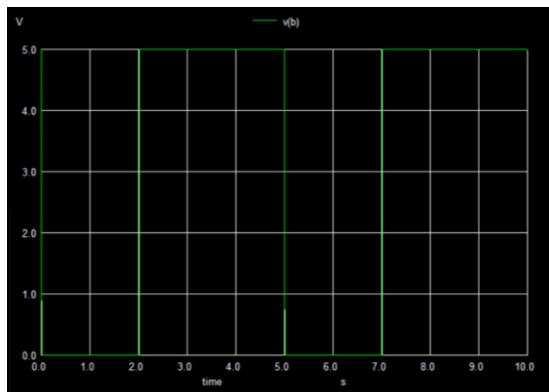
Circuit Diagram:



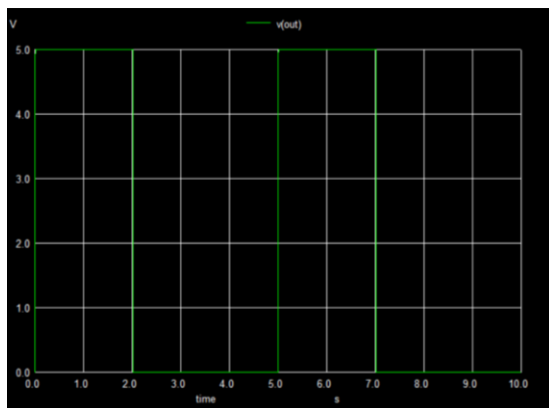
NGSPICE plot of input A:



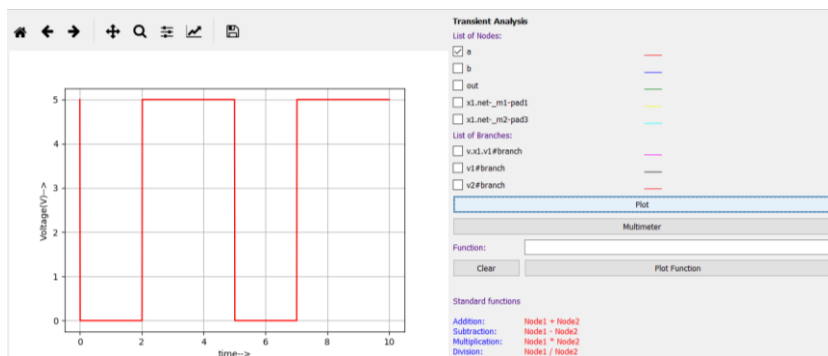
NGSPICE plot of input B:



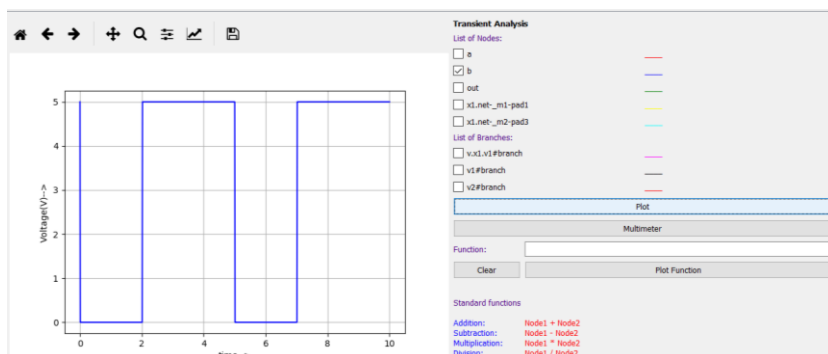
NGSPICE plot of output:



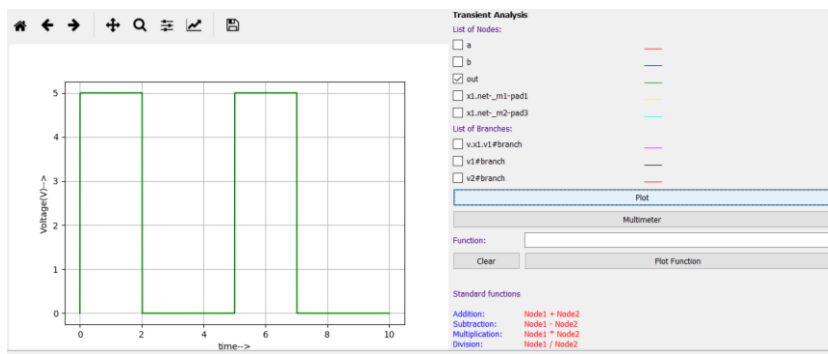
Python Plot input A:



Python Plot input B:



Python plot of output:



Source/Reference(s) :

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