TITLE OF THE EXPERIMENT

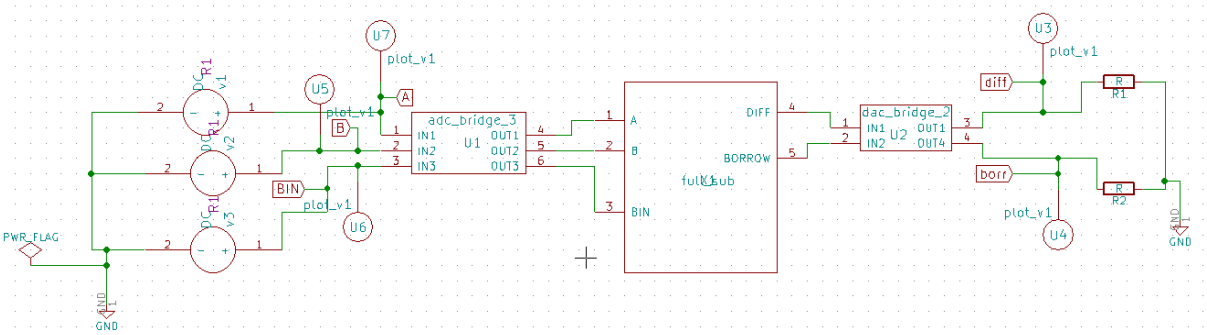
DESIGN OF FULL SUBTRACTOR USING SUBCIRCUIT BUILDER

THEORY

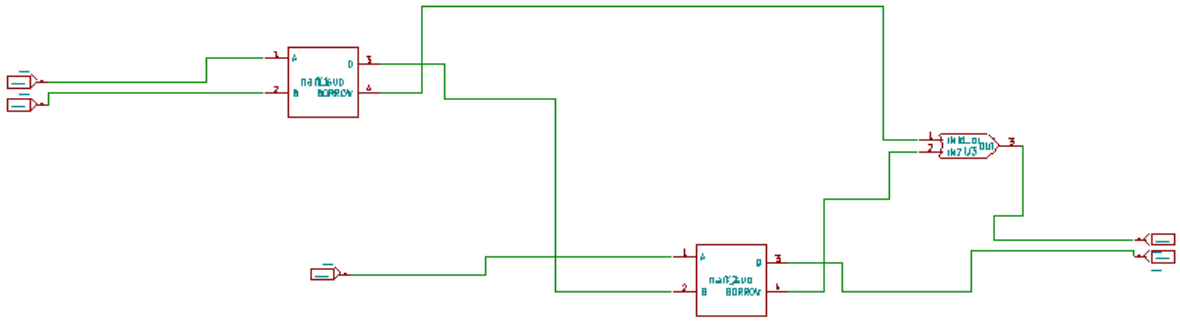
Generally, the full subtractor is one of the most used and essential combinational logic circuits. It is a basic electronic device, used to perform subtraction of two binary numbers. In the earlier article, already we have given the basic theory of half adder & a full adder which uses the binary digits for the computation. Likewise, the full-subtractor uses binary digits like 0,1 for the subtraction. The circuit of full subtractor can be built with subcircuit of half subtractor(which is build using AND and XOR gates) and OR gateThe inputs of this subtractor are A, B, Bin and outputs are Diff, Borr.

Schematic Diagram

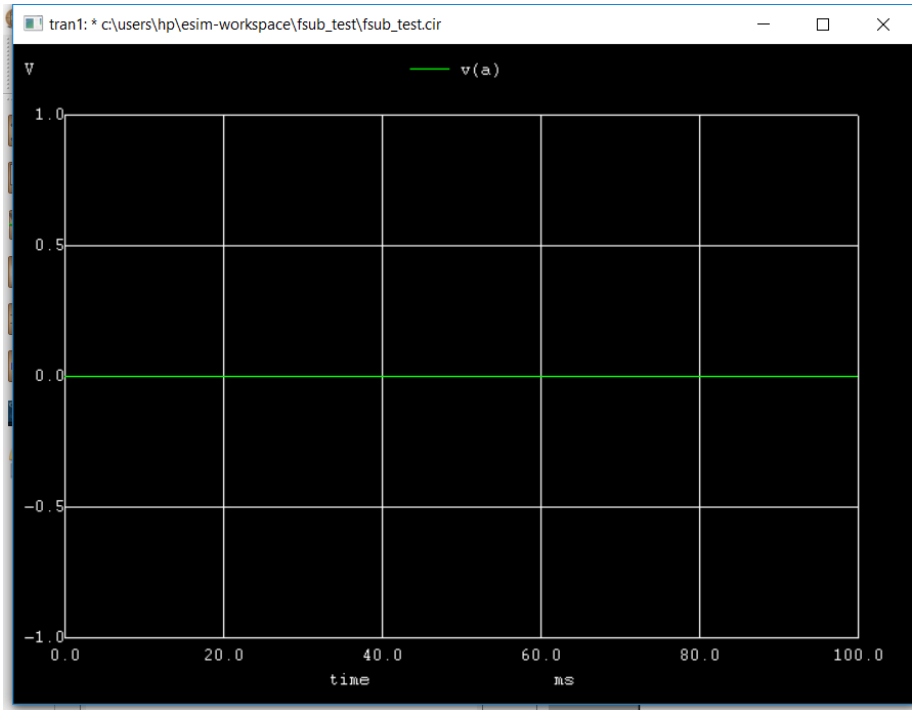
The schematic diagram of full subtractor is.

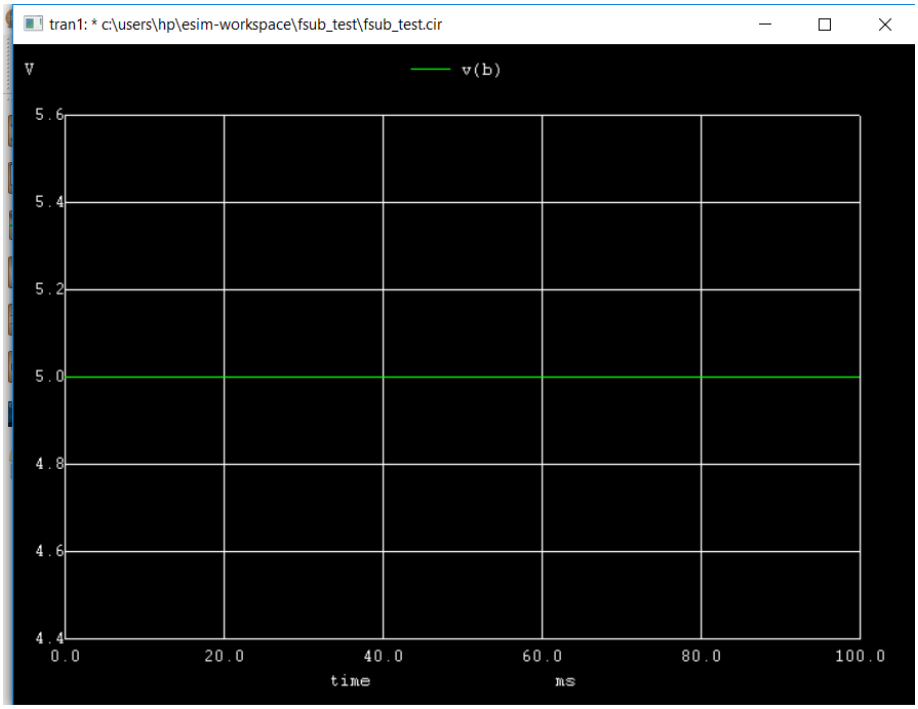


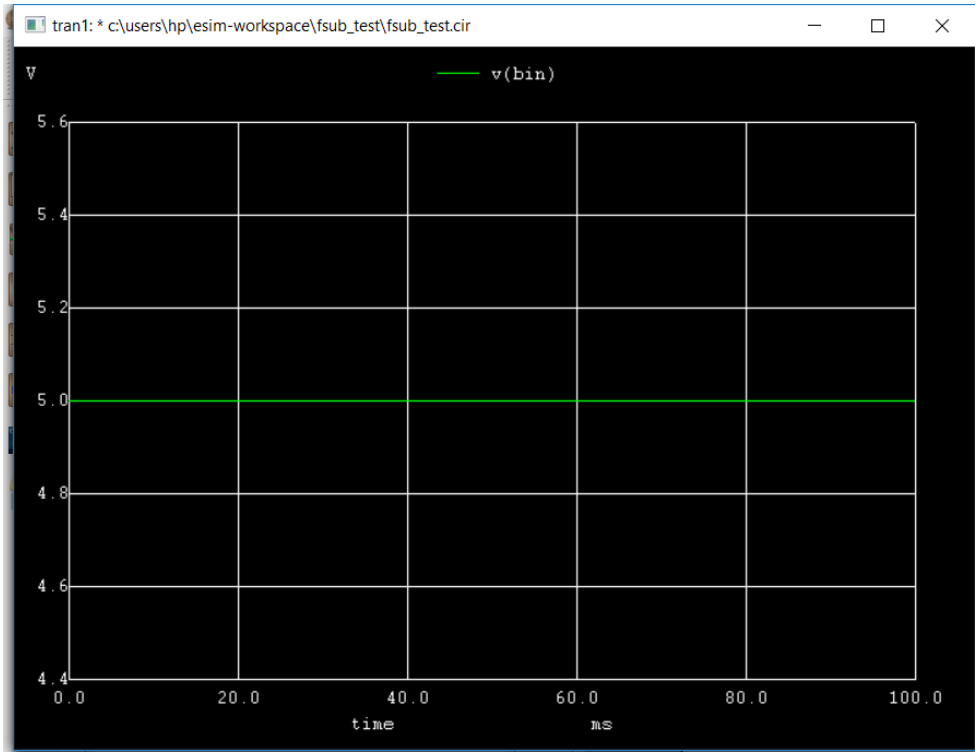
Here I used a subcircuit for subtraction.The internal structure of full subtractor is shown below.



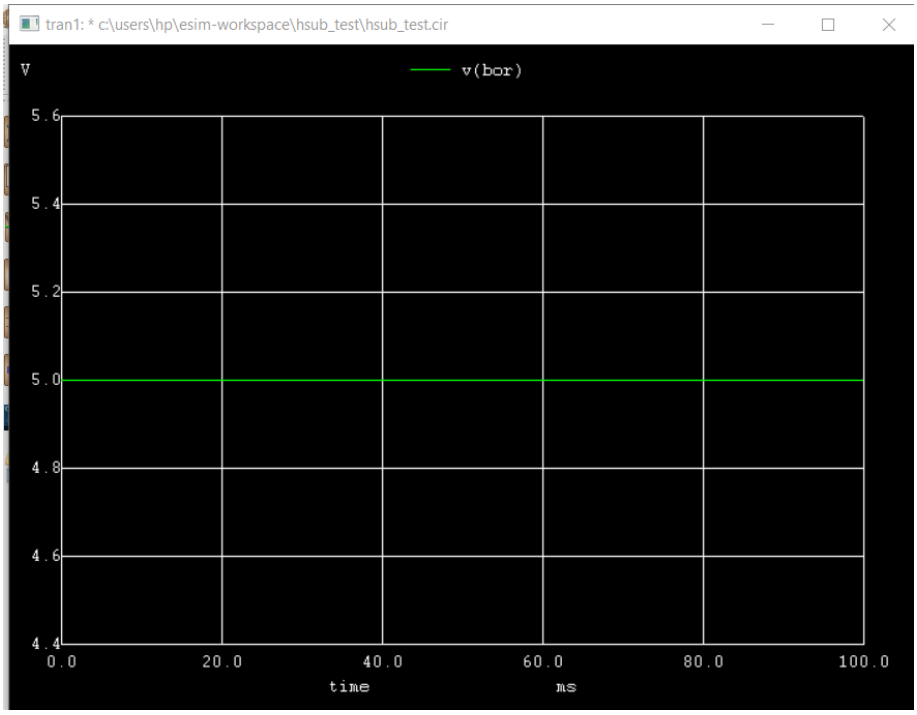
Input Ngspice Plots:

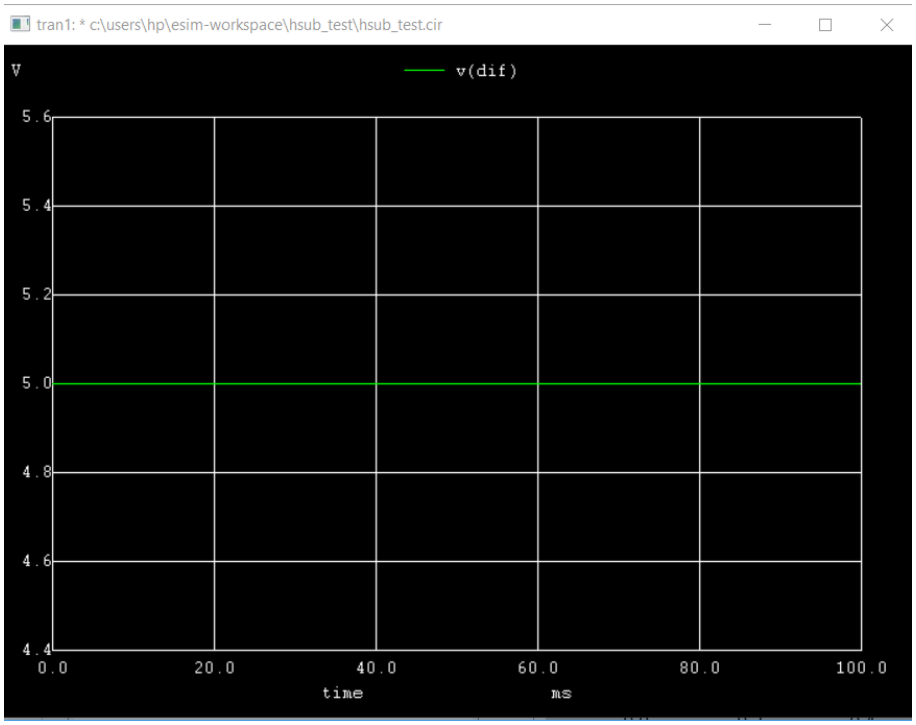




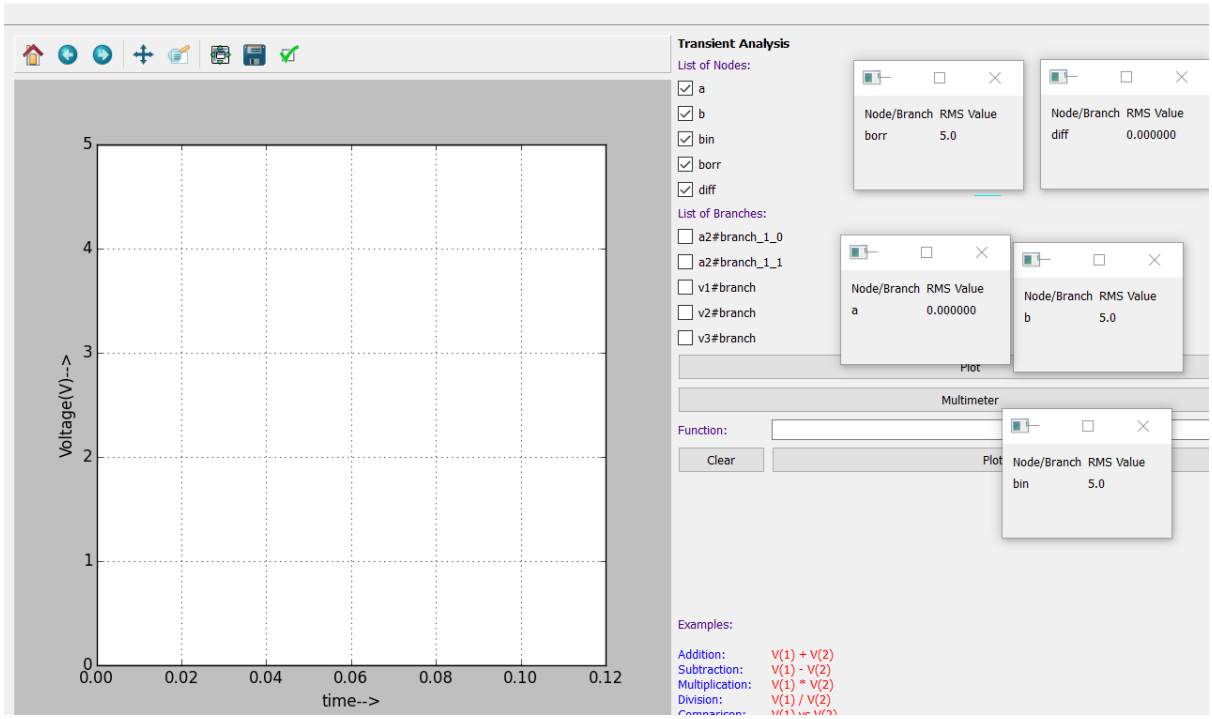


Output Ngspice Plots:





Python Plot:



References:

https://www.elprocus.com/full-subtractor-circuit-using-logic-gates/