Digital Logic Practical

Experiment No:

1. Familiarization with AND, OR and INVERTER Gates.
2. Familiarization with two and three input NAND, NOR, XOR, and XNOR gates.
3. Boolean Identities verification (Any Three)
4. Verification of DeMorgan's first and second law. Investigate the operation of OR-INVERT, AND-INVERT and INVERT-OR and INVERT-AND.
5. Build a 4 input AND from three 2 input AND gates.
6. Build a 3 input OR gate from two 2 input OR gates.
7. Design of half adder and full adder.
8. Implement full adder using two half adder.
9. Implement full subtractor using two half adder.
10. Design two to four line decoder.
11. Design 3 to 8 line decoder.
12. Design 2 to 1 line multiplexer.
13. Design of flip flops.
14. Design of counter.

Report Format:

EXPERIMENT NO: 1

Familiarization of INVERTER Gate.

OBJECTIVE:

To investigate the input and output of an inverter.

THEORY:

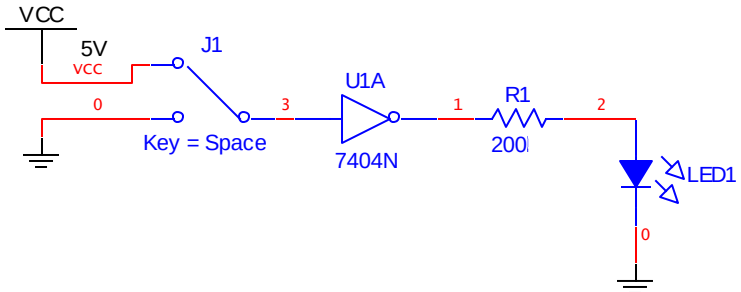
An inverter is simply a gate whose output is the inversion of its input. If logic-1 is present at the input, logic-0 is present at the output. Also if logic-0 is present at the input, logic 1 is present at the output.

EQUIPMENT REQUIRED:

Power Supply, Ground, Switch Module, Hex Inverter (7404), Light Emitting Diode (LED), Resistor.

PROCEDURE:

Step 1. Connect the circuit as in figure.



Step 2. Note the condition of LED for HIGH (1 or ON) and LOW (0 or OFF).

Step 3. Note the output in Table.

Input A	Output F
Low	High
High	Low

CONCLUSION:

Hence the behavior of the inverter gate is observed.