BBM233: Logic Design Lab
2023 Fall
Lab Experiment #(add experiment no. here) Report

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1 Question and Curcuit

The single-bit output of your digital system will be remotely connected to the alarm on the chief's smartphone, and it should be triggered (HIGH) in the following three cases:

Case 1: During the night shift, if the guard is snoring and some motion is detected.
Case 2: During the day, if the guard is asleep and there is some motion.
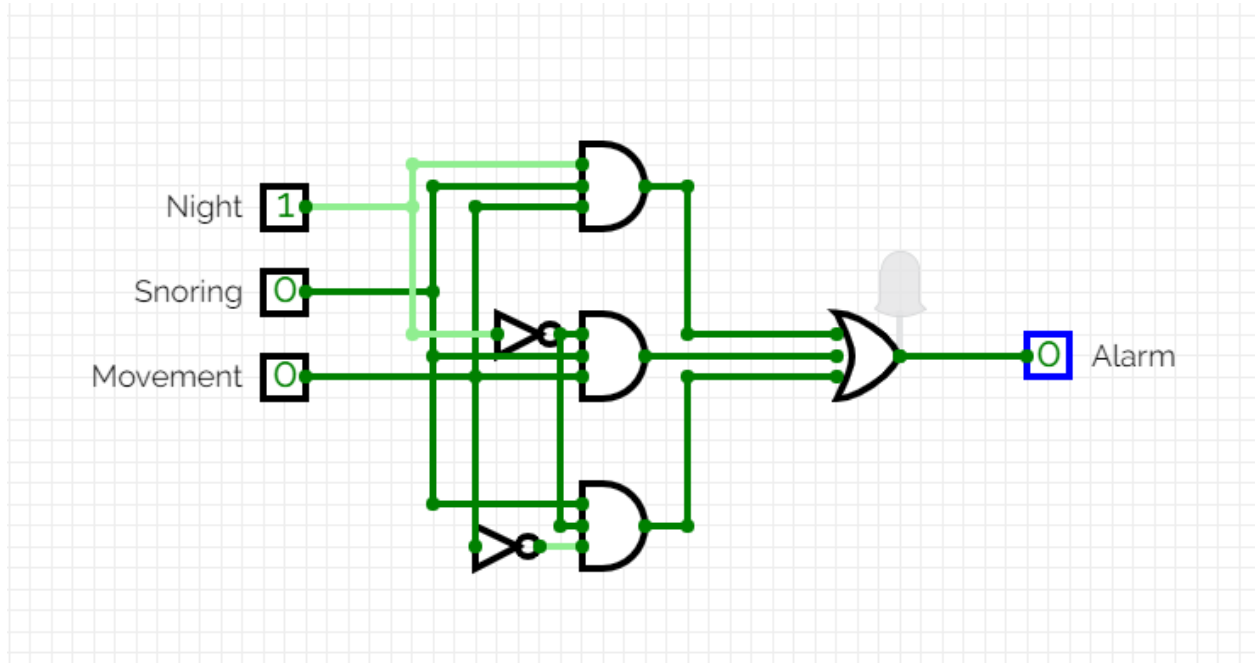**Case 3:** During the day, if the guard is asleep and there is no motion detected.

Figure 1: My circuit

2 Equation

$Alarm(N, S, M) = N.S.M + (\neg N).S.M + (\neg N).S.(\neg M)$

3 Truth Table

N	S	M	Alarm
0	0	0	0
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	1

References

- https://circuitverse.org/simulator