Taylor Cowley

220 Lab 01 Breadboard

April 28 2016

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cord | Low Bat | Temp | Fan | Alarm |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 1 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

**Preparation**

Truth tables and equations:

Alarm = (low bat) \* (cord)’

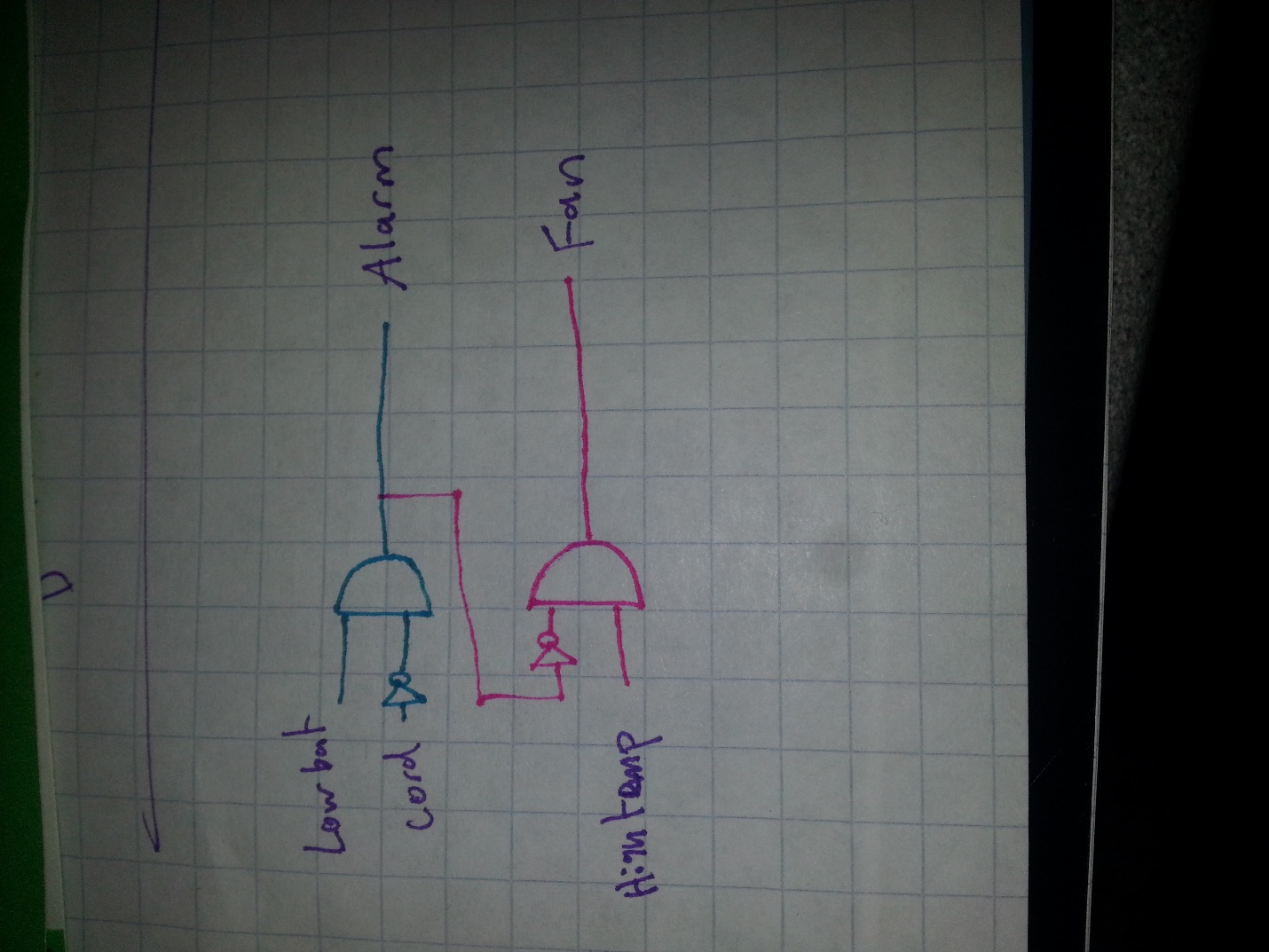
**G = B \* A’**

Fan = (temp) \* (((Low bat) \* (cord)’)’ + (low bat)’)

Fan= temp \* alarm’

**F = C \* G’**

English:

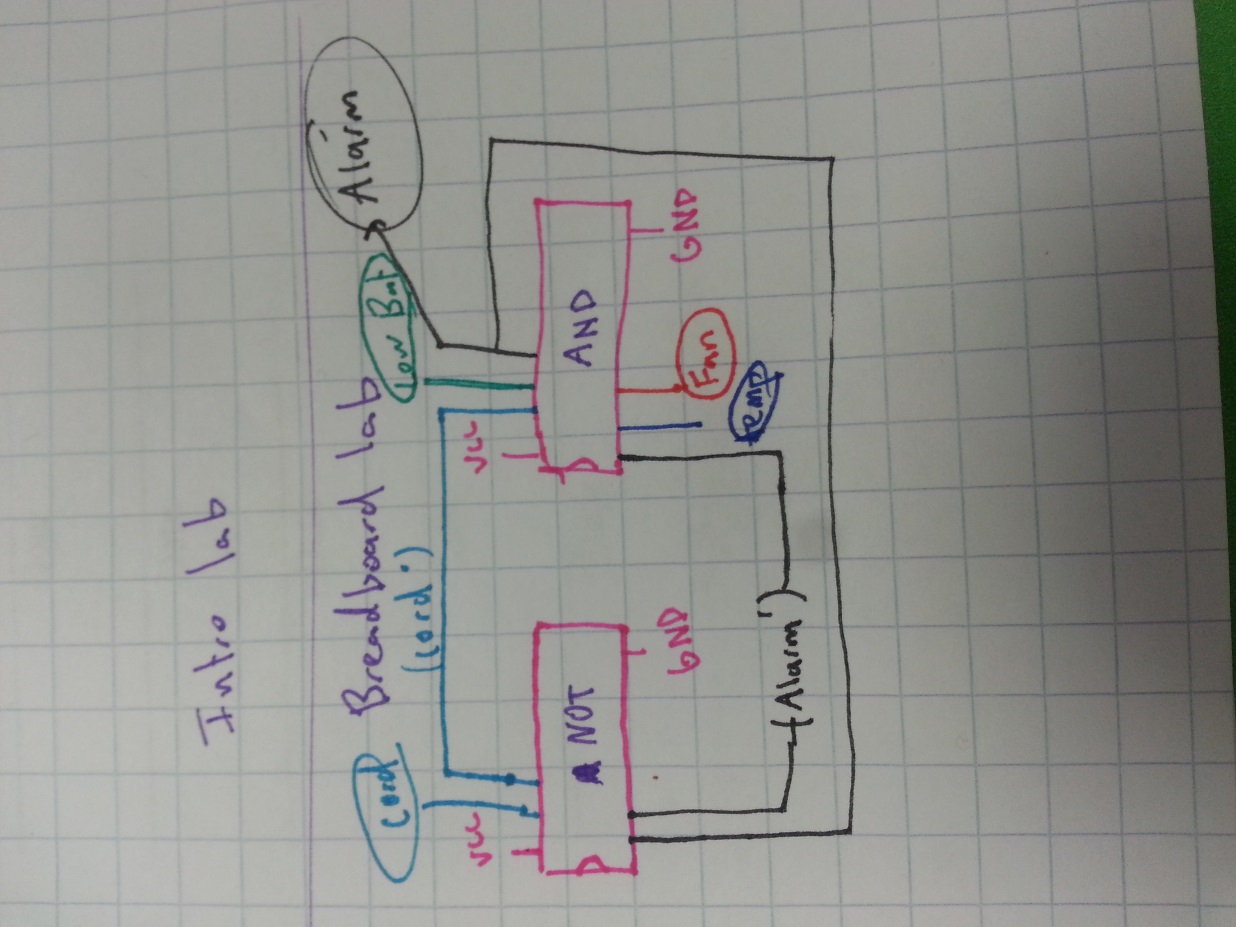
The Alarm sounds when we have a low battery and are not

plugged in.

The Fan turns on when we have a high temperature and the

alarm is not sounding (high temperature and if low battery, has a cord)

Draw the schematic:

**Procedure**

What I actually used:

Tested results of the circuit:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cord | Low Bat | Temp | Fan | Alarm |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 1 | 0 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

**Anomalies**

My only problem was that I mixed up my AND and NOT chips, so nothing was plugged in properly.