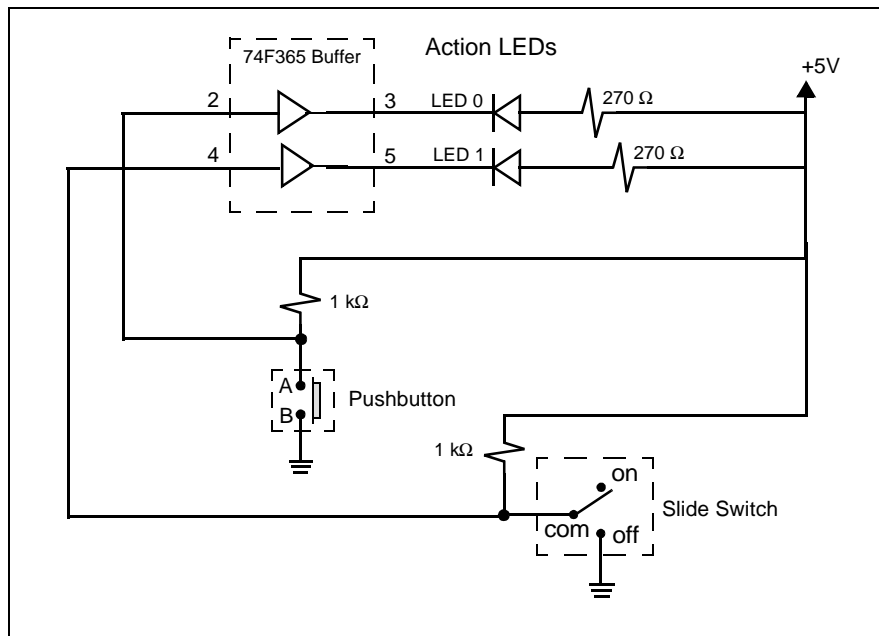


## Laboratory Worksheet #1

### Digital Input and Output Exercise

Throughout the semester, we will be doing some “In-Lab” work which will highlight the main topics associated with the Embedded Control course. In order to do so, it is necessary to build and test small circuits that will later be expanded upon. This first project involves the use of a couple key components that play an important role in both digital input and output.

After the TAs have handed out your protoboards and components, please construct this circuit, which will eventually be tested with a Logic Probe. Directions on using the logic probe can be found not only in the LITEC Multimedia Tutorials, but also in Chapter 2 of your lab manual. Also, please refer to page 164 in the lab manual concerning the connections of **+5V** and **Ground** from the Smart Car connection board.



#### Questions:

1. Using the on-line data sheets, determine which pins of the 74F365 need to be connected to power ( $V_{CC}$ ) and Ground.
2. Using the Logic Probe, what value (high/low) do you get when you test pin# 16 on the 74F365 Buffer?
3. What about when you test pin# 1 on the same chip? Why is this so?
4. What happens to the outputs (pin# 3 for LED0 and pin# 5 for LED1) when you activate the switches?