

Lab07 - Part C: Blinking Lights, Switches and Programming a Combination Lock

1. Using your BS2 from Lab07 part B write the following program

```
x var bit
y var bit
output 0
output 1
out0=1
out1=1
Input 8
Input 9
get_status:
    x=in8
    y=in9
if x+y=0 then double_blink
goto get_status
double_blink:
    low 0
    low 1
    pause 200
    high 0
    high 1
    pause 200
goto get_status
```

2. Programming Details
 - a. The program is going to “make a decision”, based on the condition of two Switches. Only when both Switches 1 and 2 are LOW will the program will jump to the appropriate “blink” routine . The microcontroller is sensing an input, making a decision, and then creating an output.
 - b. Variables must be “declared” before using them in a program. Declaring a variable is simply a statement in your program that tells the microcontroller the name of the variable and how big it is. Lines “x var bit” and “y var bit” declare the variables x and y to be 1 bit each.
3. Write a program which uses declared variables to only blink when you have entered your first initial in ASCII. For example if your name is “David”, your first initial is “D” = 44 hex = 0100,0100. Then only when those switches are set to that value 44 hex should a light blink.
 - a. Test to make sure no blinking occurs when all switches are set high.
 - b. Test to make sure no blinking occurs when all switches are set low.
4. **Show to TA:**
 - a. **Your filled in table below on following page.**
 - b. **Your program with comments**
 - c. **Your protoboard with the working program to the TA.**

Example Table

Name	David							
Initial	D							
Hex	44							
Binary	0100,0100							
Switch #	1	2	3	4	5	6	7	8
Bit #	0	1	2	3	4	5	6	7
ASCII Initial	0	0	1	0	0	0	1	0
	Note bit order reversed since high order bit is on the right side.							
Switch Setting To Cause Blinking	ON	ON	OFF	ON	ON	ON	OFF	ON

Name								
Initial								
Hex								
Binary								
Switch #	1	2	3	4	5	6	7	8
Bit #	0	1	2	3	4	5	6	7
ASCII Initial								
	Note bit order reversed since high order bit is on the right side.							
Switch Setting To Cause Blinking								