

Laboratory Task Sheet 02

Title: LED Operated by Button

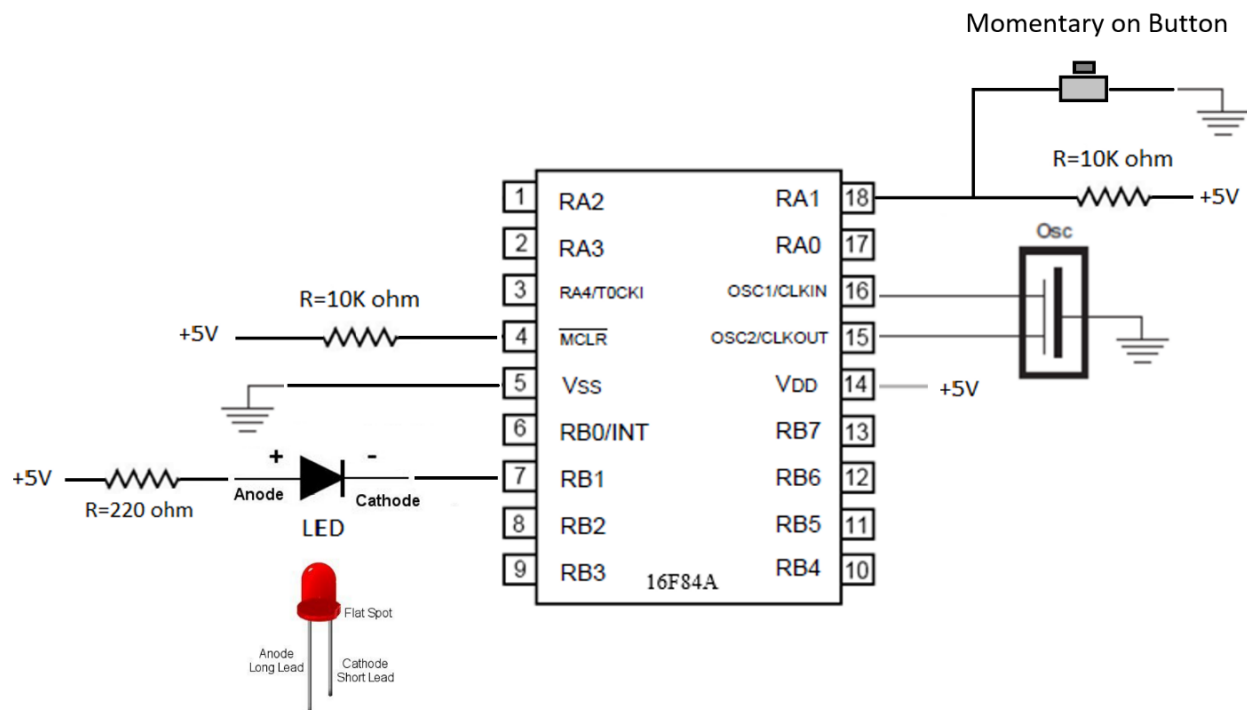
Registers to be learned: PORTA & PORTB & TRISA & TRISB

Section A

Objective: Program the microcontroller to turn on the LED when the button is pressed.

Tasks

1. Create the circuit below where the LED is connected to RB1 and Button is connected to RA1.



2. Make a copy of the P16f84A_Template file and name it TASK02AGroup00. Open the file in MPLAB Software and use the table below to construct the code.

Suggested Code Structure
Start
Call Initialization Go to Main
Main Move the value in PORTA to the Work Register Move the value in the Work Register to PORTB Go to the Main
Initialization Bank1 Use TRISA to define PORTA,1 as input Use TRISB to define PORTB,1 as output Bank0 Initialize PORTB,1 to turn off the LED Return
end

3. Program the microcontroller and test it on the circuit.
4. Demonstrate the result to the instructor.
5. Upload the code on D2L and save it for yourself.

Section B

Objective: Program the microcontroller to turn on the LED when the button is NOT pressed.

Tasks

1. Use the circuit from section A.
2. Make a copy of the P16f84A_Template file and name it TASK02BGroup00. Open the file in MPLAB Software and use the table below to construct the code.

Suggested Code Structure
Start
Call Initialization Go to Main
Main Check if the button is pressed or not If it is pressed, go to TurnOFF If it is not pressed, go to TurnON
TurnON Turn on the LED Go to Main
TurnOFF Turn off the LED Go to Main
Initialization Bank1 Use TRISA to define PORTA1 as input Use TRISB to define PORTB1 as output Bank0 Initialize PORTB1 to turn on the LED Return
end

3. Program the microcontroller and test it on the circuit.
4. Demonstrate the result to the instructor.
5. Upload the code on D2L and save it for yourself.