



Programming Learning Activity: 1.5

“ Button Control!”

SPIN language terms you need to know:

- **INA** – a command that represents an “INPUT” register followed by a pin # or variable
- **REPEAT UNTIL** – repeats “until” a condition is met
- **BLINK** – the name of a SUBROUTINE (method) that is called from 1 PUB method to another
- **REPEAT 5** – another way of getting a routine to play through a given number times

Type the code in figure 1 into the Propeller Spin Tool program:

```
PUB PB_Controlled_LED

  REPEAT

    DIRA[24] := 1

    OUTA[24] := 1

    REPEAT UNTIL INA[10]

    BLINK

    WAITCNT(CLKFREQ/2 + CNT)

PUB BLINK

  DIRA[24] := 1

  REPEAT 5

    WAITCNT(CLKFREQ/2 + CNT)

    OUTA[24] := 1

    WAITCNT(CLKFREQ/2 + CNT)

    OUTA[24] := 0
```

Figure 1:

**Press the F10 key to load the code to the Propeller Chip or press F11 to load the code to EEPROM **

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“Button Control”

1. What happens when the program is loaded?
2. What happens when you push the button connected to pin 10?
3. Could you change the number of times the LED flashes after the button is pushed? Make the change in the code and give it a try?
4. Can you use what you have PREVIOUSLY learned to change the amount of time the LED stays on and off? Make a change to the code and give it a try.
5. We called the second PUB method “BLINK”. However, it could be called just about anything.(We used “BLINK” to help you make a connection to what the subroutine does.) Can YOU figure out how to change the name of the PUB method and make it run the same program like it does now? Make the changes to the code and give it a try!
6. Could you change WHICH LED flashes when the code is run? Make some changes to the code and see if you can get the LED connected to PIN 23 to FLASH.
7. We used a pushbutton connected to PIN 10. Could you use another Push Button? If so, how?
8. Could you make more than 1 LED flash when a button is pushed? Make some changes to the code and give it a try!
9. In the last 5 lab activities we have been learning a lot of new things! In the space below, write a short three sentence summary of what you have learned about programming so far!
