VIRTUAL COURSE
BUILD YOUR OWN DATA LOGGER

WILDLABS.NET
[ The conservation technology network ]

FREAKLABS
MODULE 3 - SUBMODULE 1 - LAB 3

CHANGING PARAMETERS IN REAL TIME
Goal:

- Go deeper into understanding how to pass arguments from the serial console to dynamically set and control parameters in our application

- Dynamically control the rate at which we blink our LED through the serial monitor / console
Blinking an LED – module 2

```c
void setup() {
  // put your setup code here, to run once:
  pinMode(13, OUTPUT);
  digitalWrite(13, LOW);
}

void loop() {
  // put your main code here, to run repeatedly:
  digitalWrite(13, HIGH);
  delay(1000);
  digitalWrite(13, LOW);
  delay(1000);
}
```

Set pin number as an int variable

Set delayTime as a variable, So we can the speed at which the LED blinks through the serial monitor.
Let’s get coding!

Dynamically changing the rate at which we blink our LED

`cmdBlink`
cmdBlink Function

```c
#include "cmdArduino.h"

int pinLed = 13;
int delayTime = 10000;

void setup() {
    cmd.begin(57600);
    Serial.println("Lab 1c - Command Blink");
    pinMode(pinLed, OUTPUT);
    digitalWrite(pinLed, LOW);
    cmd.add("blink", cmdBlink);
}

void loop() {
    // put your main code here, to run repeatedly:
    cmd.poll();
    digitalWrite(pinLed, HIGH);
    delay(delayTime);
    digitalWrite(pinLed, LOW);
    delay(delayTime);
}

void cmdBlink(int argCnt, char **args) {
    delayTime = cmd.conv(args[1]);
}
```
cmdBlink Function

```cpp
#include "cmdArduino.h"

int pinled = 13;
int delayTime = 1000;

void setup() {
  cmd.begin(57600);
  Serial.println("Lab 3 - Command Blink");
  pinMode(pinled, OUTPUT);
  digitalWrite(pinled, LOW);
  cmd.add("blink", cmdBlink);
}

void loop() {
  // put your main code here, to run repeatedly:
  cmd.poll();
  digitalWrite(pinled, HIGH);
  delay(delayTime);
  digitalWrite(pinled, LOW);
  delay(delayTime);
}

void cmdBlink(int argcnt, char **args) {
  delayTime = cmd.conv(args[1]);
}
```
cmdBlink Function – CHALLENGE

There are 3 pins with LEDs on the WildLogger board. Pins 13, 4, 27.

Try editing the cmdBlink code so you can dynamically change the pin and speed through the serial console with the following commands.

blink 27 500
blink 4 2000
blink 13 300

*Pause the video if you like*
Challenge Code

Congratulations!!
Troubleshooting!

If your code doesn’t verify check:

• The correct board is selected
• The correct port is selected
• There’s no typos in your code
• Function and variables names are consistent (case sensitive)
• Each opening bracket has a closing bracket
• Each statement has a semi-colon at the end
COMING UP - MODULE 3 - SUBMODULE 2
TEMPERATURE & HUMIDITY SENSING