```
TERRAN BLAKE // ECE 241 // LAB 8

#include <TimerOne.h>

  int ledPin = 13;   //pin for the led
  unsigned long Timer2 = 0;
  const long Timer2Interval = 10;        //values for the timer
  unsigned long currentMillis = millis();
  const long DutyCycle = 551;       //value for the PWM, has been edited for parts of lab

void setup() {
  pinMode (10,OUTPUT);
  pinMode (12,OUTPUT);       //pin modes for the reading

  Timer1.pwm(10, DutyCycle, 100);  //setup for the sampling
  Timer1.initialize(5);

}

void loop() {
  if( millis() - Timer2 >= Timer2Interval) { //keeps the program in a 10ms interval
    Timer2 = Timer2 + Timer2Interval;
    digitalWrite(ledPin, HIGH);       //Turn on LED
    analogRead(A0);
    bitSet(PORTB,5);  //saves the frequency
    Timer1.pwm(10, analogRead(A0));    //reads the frequency
    digitalWrite(ledPin, LOW); //Turns off LED
    bitClear(PORTD,5);

  }
}
```