```
void loop() {
  y = 0;        // clear out variables
  x = 0;

  for (i=0; i < 4 ; i++ ){        // do it four times to build up an average - not
really neccessary but takes out some jitter

      // LOW-to-HIGH transition
    //PORTB = PORTB | 1;                    // Same as line below -  shows programmer
chops but doesn't really buy any more speed
    digitalWrite(8, HIGH);
    // output pin is PortB0 (Arduino 8), sensor pin is PortB1
(Arduinio09)
    //while ((PINB & B10) != B10 ) {         // while the sense pin is not high
    while (digitalRead(9) != 1) {    // same as above port manipulation above - only 20
times slower!
      x++;
    }
    delay(1);

    //  HIGH-to-LOW transition
    // PORTB = PORTB & 0xFE;                   // Same as line below - these shows
programmer chops but doesn't really buy any more speed
    digitalWrite(8, LOW);
    //while((PINB & B10) != 0 ){              // while pin is not low  -- same as below
only 20 times faster
    while(digitalRead(9) != 0 ) {     // same as above port manipulation - only 20
times slower!
      y++;
    }
    delay(1);
  }

  fout =  (fval * (float)x) + ((1-fval) * accum);  // Easy smoothing filter "fval"
determines amount of new data in fout
  accum = fout;
  store++;
  if (store<50) {
    nonTouched = fout;
  }
  if (store>50){
    store = 50;
  }
  Serial.print((long)x, DEC);     // raw data - Low to High
  Serial.print( "   ");
  Serial.print((long)y, DEC);     // raw data - High to Low
  Serial.print( "   ");
  Serial.print( (long)fout, DEC); // Smoothed Low to High
  Serial.print( "   ");
  Serial.println( (long)nonTouched, DEC); // Smoothed Low to High
  if (fout>nonTouched+3){
    analogWrite(ledPin,255);
  }
  else{
    analogWrite(ledPin,0);
  }
}
```

PHOTOS: