// PROJECT  :IRLEDControl

// PURPOSE  :ACES Adaptation of Shirriff's IRrecvDump Example

// DEVICE   :Arduino + Sharp GP1UX511QS (38kHz, 8.5m,5V) + Bicolor LED

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// uC       :328

// COURSE   :ICS3U

// STATUS   :Working

// REF1     :IRremote library: <https://github.com/z3t0/Arduino-IRremote>

// REF2:<https://en.wikibooks.org/wiki/C_Programming/Preprocessor_directives_and_macros>

// REF3     :Shirriff's IR Blog:<http://www.righto.com/search?q=IR>

// REF4     :Find IR Codes: <http://irdb.tk/find/>

#include <IRremote.h>

#define RECV\_PIN 11         //GP1UX511QS: pin 1 VOUT

#define GND 10              //GP1UX511QS: pin 2 GND

#define VCC 9               //GP1UX511QS: pin 3 5V

//Compiler Preprocessor Directives...

#define DEBUG               //conditional serial monitoring (See: REF2)

//#define NEC               //<https://www.sbprojects.net/knowledge/ir/nec.php>

//#define SONY              //<https://www.sbprojects.net/knowledge/ir/sirc.php>

//#define SHARP             //<https://www.sbprojects.net/knowledge/ir/sharp.php>

//#define GENERIC           //Generic...labelled: LCD Remote

#define SMARTBOARD          //DES Smartboard Remote Control

#ifdef NEC                  //

  #define ON\_OFF 0x61A028D7

#else

  #ifdef SMARTBOARD

    #define ON\_OFF 0xD15348B7

  #else

    #ifdef GENERIC

      #define ON\_OFF 0x61D648B7

    #endif

  #endif

#endif

#define TERMINATOR 0xFFFFFFFF   //Universal? Not sure…

**IRrecv** irrecv(RECV\_PIN);

**decode\_results** results;         //results data structure

#define RED PD7                 //Red anode

#define GREEN PD6               //Green anode

void setup() {

  **Serial**.begin(9600);

  irrecv.enableIRIn();          //Start the Detector

  pinMode(VCC, OUTPUT);         //identify supply lines

  pinMode(GND, OUTPUT);         //

  digitalWrite(VCC, HIGH);      //provide 5V supply

  digitalWrite(GND, LOW);       //provide GND supply

  DDRD |= 1 << RED | 1 << GREEN; //set LED leads to output

  PORTD &= ~(1 << RED | 1 << GREEN);   //ground 'em both

  showRed();                              //start with red to confirm

}

void showRed() {            //turn on the Red lamp

  PORTD &= ~(1 << GREEN);   //set Green lead LOW

  PORTD |= (1 << RED);      //set Red lead HIGH

}

void showGreen() {          //turn on the Green lamp

  PORTD &= ~(1 << RED);     //set Red lead LOW

  PORTD |= (1 << GREEN);    //set Green lead HIGH

}

void loop() {

  if (irrecv.decode(&results)) {    //if there's a signal, demodulate & record

    #ifdef DEBUG                    //suspend this code when deployed

      **Serial**.println(results.value, HEX);

    #endif

    if (results.value == ON\_OFF){

        showGreen();

        delay(3000);

        showRed();

    }

    irrecv.resume();                //prepare for next IR signal

  }

}

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