#include <SPI.h>

int local;

unsigned long secondTimer;

float Temperature;

float ThermoCouple;

// function to read temperature from Max6675

float Read\_SPI\_Temperature(){

//set up the SPI

SPI.beginTransaction(SPISettings(8000000, MSBFIRST, SPI\_MODE0));

//set the chip select low

PORTC &= ~0x04;

int TempData = SPI.transfer16(0);

PORTC |= 0x04;

SPI.endTransaction();

TempData = (TempData / 8 ) & 0x0fff;

Temperature = 0.25 \* (float) TempData;

Temperature = 1.8\*Temperature + 32.0;

return Temperature;

} // end of Read\_SPI\_Temperature

void setup() {

//Setup Chip Select Pin and set as inactive.

pinMode( A2, OUTPUT);

digitalWrite( A2, HIGH );

//initialize SPI:

SPI.begin();

SPI.setClockDivider( SPI\_CLOCK\_DIV2 );

SPI.setBitOrder( MSBFIRST );

SPI.setDataMode(SPI\_MODE0);

//setup serial port

Serial.begin( 9600);

//prepare timer.

secondTimer = millis();

}

void loop() {

if( millis() - secondTimer >= 1000 ){

// Read Temperature sensor

ThermoCouple = Read\_SPI\_Temperature( );

secondTimer += 1000;

//report data

Serial.print( "Temp = ");

Serial.println( ThermoCouple );

}

}