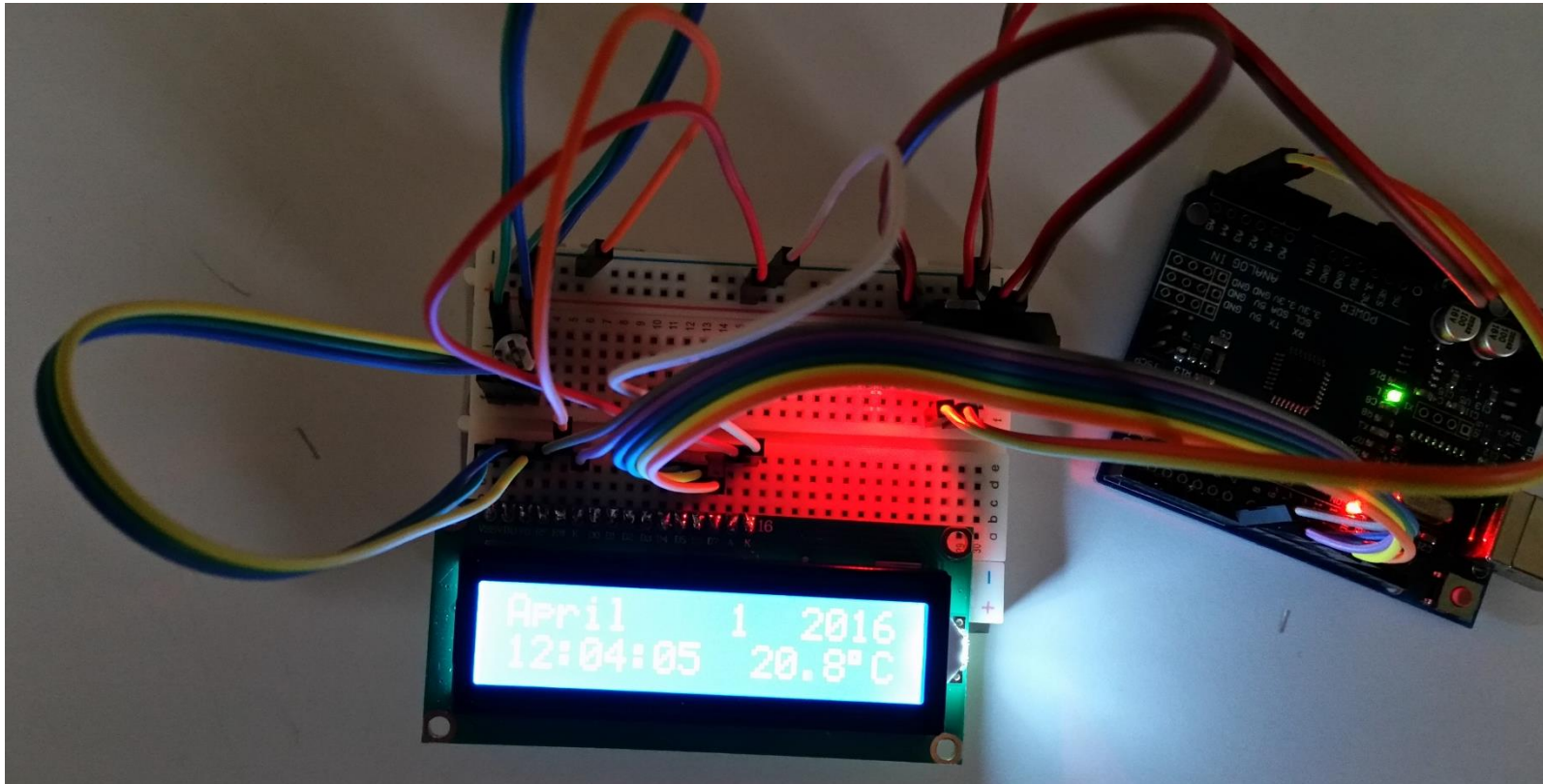


GoldSTEM_Lesson_25_LCD_Clock_Calander_Temperature_F

tm 4-02-2016

For this experiment uses the same setup as Lesson 21.



Load the Code

GoldSTEM_Lesson_25_LCD_Clock_Calander_Temperature

```
//GoldSTEM_Lesson_25_LCD_Clock_Calander_Temperature tm 04-01-2016
```

```
#include <Wire.h>
#include "ds3231.h"
#include <LiquidCrystal.h>

LiquidCrystal lcd(7,8,9,10,11,12);

#define BUFF_MAX 128

uint8_t time[8];
char recv[BUFF_MAX];
unsigned int recv_size = 0;
unsigned long prev, interval = 1000;

void setup()
{
  Serial.begin(9600);
  Wire.begin();
  DS3231_init(DS3231_INTCN);
  memset(recv, 0, BUFF_MAX);

  lcd.begin(16, 2);

}

void loop()
{
  char in;
```

```
char tempF[6];
float temperature;
char buff[BUFF_MAX];
unsigned long now = millis();
struct ts t;

// show time
if ((now - prev > interval) && (Serial.available() <= 0)) {
    DS3231_get(&t); //Get time

    temperature = DS3231_get_treg(); //Get temperature
    dtostrf(temperature, 5, 1, tempF);

    lcd.clear();
    lcd.setCursor(0,0);

    printMonth(t.mon);
    if(t.mday<10)
    {
        lcd.print(" ");
    }
    lcd.print(t.mday);
    lcd.print(" ");
    lcd.print(t.year);

    lcd.setCursor(0,1); //Go to second line of the LCD Screen
    lcd.print(t.hour);
    lcd.print(":");
    if(t.min<10)
    {
        lcd.print("0");
    }
}
```

```
lcd.print(t.min);  
lcd.print(":");  
if(t.sec<10)  
{  
  lcd.print("0");  
}  
lcd.print(t.sec);
```

```
lcd.print(' ');  
lcd.print(tempF);  
lcd.print((char)223);  
lcd.print("C ");  
prev = now;
```

```
}
```

```
}
```

```
void printMonth(int month)
```

```
{
```

```
  switch(month)
```

```
  {
```

```
    case 1: lcd.print("January ");break;
```

```
    case 2: lcd.print("February ");break;
```

```
    case 3: lcd.print("March ");break;
```

```
    case 4: lcd.print("April ");break;
```

```
    case 5: lcd.print("May ");break;
```

```
    case 6: lcd.print("June ");break;
```

```
    case 7: lcd.print("July ");break;
```

```
    case 8: lcd.print("August ");break;
```

```
    case 9: lcd.print("September");break;
```

```
    case 10: lcd.print("October ");break;
```

```
    case 11: lcd.print("November ");break;
```

```
case 12: lcd.print("December ");break;  
default: lcd.print("Error ");break;  
}  
}
```

Questions

This is your final lesson, can you change the code to display the temperature in Degrees F?
Send the code and picture of the display to Certificate_STEM_105@GoldSTEM.com

End of Lesson