

Arduino sprintf float not formatting

Asked 6 years, 6 months ago Active 1 year ago Viewed 73k times



I have this arduino sketch,

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```
char temperature[10];  
float temp = 10.55;  
sprintf(temperature,"%f F", temp);  
Serial.println(temperature);
```



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temperature prints out as

? F

Any thoughts on how to format this float? I need it to be a char string.

c++ arduino printf

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edited Feb 18 '15 at 3:12



Dinal24

2,851 2 15 31

asked Dec 25 '14 at 21:54



Mistergreen

912 1 7 15

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Due to some performance reasons %f is not included in the Arduino's implementation of sprintf(). A better option would be to use dtostrf() - you convert the floating point value to a C-style string, Method signature looks like:

```
char *dtostrf(double val, signed char width, unsigned char prec, char *s)
```

Use this method to convert it to a C-Style string and then use sprintf, eg:

```
char str_temp[6];  
  
/* 4 is minimum width, 2 is precision; float value is copied onto str_temp*/  
dtostrf(temp, 4, 2, str_temp);  
sprintf(temperature,"%s F", str_temp);
```

You can change the minimum width and precision to match the float you are converting.

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4 Worked fine in my case. Thumbs up! – [Fahad Siddiqui](#) Mar 4 '16 at 9:51

just a caution, the width of your buffer: str_temp is very tight at 6 characters – [Paulus](#) Jun 15 '18 at 13:20



As has been stated before Float support is not included in `sprintf` on Arduino.

7

String class



Arduino has its own [String](#) class.



```
String value = String(3.14);
```

then,

```
char *result = value.c_str();
```

String class reference, link above

Constructs an instance of the String class. There are multiple versions that construct Strings from different data types (i.e. format them as sequences of characters), including:

- a constant string of characters, in double quotes (i.e. a char array)
- a single constant character, in single quotes
- another instance of the String object
- a constant integer or long integer
- a constant integer or long integer, using a specified base
- an integer or long integer variable
- an integer or long integer variable, using a specified base
- **a float or double, using a specified decimal palces**

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edited Mar 31 '18 at 11:08

answered Jul 31 '17 at 18:49



Cameron Lowell Palmer

18k

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3 Important notice to the pointer above: "When you modify the String object, or when it is destroyed, any pointer previously returned by `c_str()` becomes invalid and should not be used any longer." – [JrBenito](#) Aug 31 '17 at 3:54

1 I would say, obviously, but yes, that is an excellent point for people new to Arduino programming. – [Cameron Lowell Palmer](#) Aug 31 '17 at 8:05

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- 1 @CameronLowellPalmer You're right, my mistake. The most recent Arduino release does include String support for double and float. I'm using an older release included with Ubuntu that pre-dates this, and throws a compiler error when I try to pass a float to String(). – [Cerin](#) Mar 31 '18 at 18:03 
- 1 It even takes second parameter as precision, String(3.1434, 4) – [Orkhan Alikhanov](#) Aug 17 '19 at 12:35



I've struggled for a few hours on getting this right, but I did finally. And this uses modern Espressif C++ provided by Platformio, and my target MCU is an ESP32.

2



I wanted to display a prefix label, the float/int value, then the unit, all inline.



I can't relay on separate Serial.print() statements, as I am using an OLED display.

Here's my code example:

```
int strLenLight = sizeof("Light ADC: 0000");
int strLenTemp = sizeof("Temp: 000.0 °C");
int strLenHumd = sizeof("Humd: 00.0 %");

char displayLight[strLenLight] = "Light ADC: ";
char displayTemp[strLenTemp] = "Temp: ";
char displayHumd[strLenHumd] = "Humd: ";

snprintf(strchr(displayLight, '\0'), sizeof(displayLight), "%d", light_value);
snprintf(strchr(displayTemp, '\0'), sizeof(displayTemp), "%.1f °C",
temperature);
snprintf(strchr(displayHumd, '\0'), sizeof(displayHumd), "%.1f %", humidity);

Serial.println(displayLight);
Serial.println(displayTemp);
Serial.println(displayHumd);
```

Which displays:

```
Light ADC: 1777
Temp: 25.4 °C
Humd: 55.0 %
```

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answered Jul 8 '20 at 20:50



[Excalibur](#)

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dtostrf() is deprecated, and it doesn't exist on every board core platforms. On the other hand, sprintf() doesn't format floats on AVR platforms!

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edited Feb 18 '20 at 14:29

answered Feb 18 '20 at 13:27



[Gerhard](#)

6,129

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48

76



[Helmut Wunder](#)

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