

Arduino popularity largely dependent on a large number of excellent and easy to use Library. The Arduino Library using object-oriented C++ class library from, you can use it easily without knowing the implementation details of the Library.

You can find Arduino Library in the path: \arduino-1.0.5\libraries. And there's an example in it, which have some demo to help you understand and use the Library.

It's very easy to use a Library, here we introduce how to write a Library.

Then let's go, we write a simple calculate Library here. Include the following function:

```
int sum(int a, int b);  
int minus(int a, int b);
```

Yes, It's very simple, it's obvious that the first function return the sum of two numbers, while the second function return minus.

Firstly, we built a folder named Calc, it's also the name of the Library.

Then we built a Calc.h file, and fill it:

```
#ifndef __CALC_H__  
#define __CALC_H__  
  
class Calc{  
public:  
    int sum(int a, int b);           // return sum  
    int minus(int a, int b);        // return difference  
};  
#endif
```

Then Calc.cpp:

```
#include "Calc.h"  
  
int Calc::sum(int a, int b)  
{  
    return (a+b);  
}  
  
int minus(int a, int b)  
{  
    return (a-b);  
}
```

To help users to understand the use of the Library, we built an examples folder. And there's a demo named calc_test, code following:

```
// demo of calc library  
#include <Calc.h>  
  
void setup()  
{  
    Serial.begin(9600);
```

```

Serial.print("10+15 = ");
Serial.println(calc.sum(10, 15));
Serial.print("100-19 = ");
Serial.println(calc.minus(100, 19));

Serial.println("Calc Library test over!");
}

void loop()
{

}

```

When using the Arduino IDE, you will see some library functions will be displayed in red, while others do not. Obviously, let the function name and the header file names as well as some macro definitions displayed in red makes the code look more beautiful, and easy to check for errors.

To help us create this library can be displayed on the IDE into the red; you need to add a keyboards.txt file in Calc folder, keyboards.txt as follows:

```

#####
# Syntax Coloring Map For Calc
#####

#####
# Datatypes (KEYWORD1)
#####
Calc KEYWORD1
calc KEYWORD1

#####
# Methods and Functions (KEYWORD2)
#####
sum KEYWORD2
minus KEYWORD2

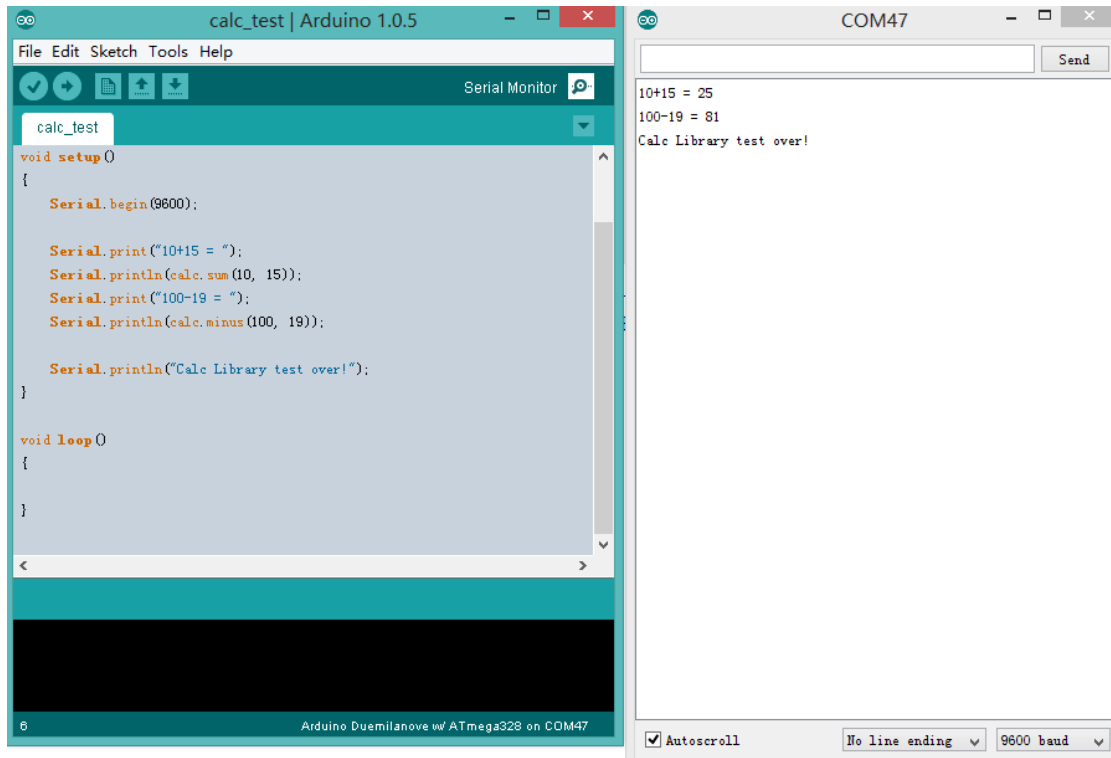
#####
# Constants (LITERAL1)
#####

```

As you can see, the class name or file name written before KEYWORD1, the function name written before KEYWORD2. As for LITERAL1, used to highlight the name of the macro definition, which is not related to this library, so empty. Note that between the name and KEYWORD1 has only one tabs, no spaces.

Thus, we finish our Calc Library, and it works fine. If you want to try at the library and not bother to type even bother to copy, you can go to my github and download it:

<https://github.com/loovee/Calc>



The screenshot displays the Arduino IDE interface. The main window shows a sketch named 'calc_test' with the following code:

```
void setup()
{
  Serial.begin(9600);

  Serial.print("10+15 = ");
  Serial.println(calc.sum(10, 15));
  Serial.print("100-19 = ");
  Serial.println(calc.minus(100, 19));

  Serial.println("Calc Library test over!");
}

void loop()
{
}
```

The Serial Monitor window, titled 'COM47', shows the output of the sketch:

```
10+15 = 25
100-19 = 81
Calc Library test over!
```

The status bar at the bottom of the IDE indicates 'Arduino Duemilanove w/ ATmega328 on COM47'.