Arduino IDE Libraries
Do It Yourself

San Diego Arduino Enthusiasts

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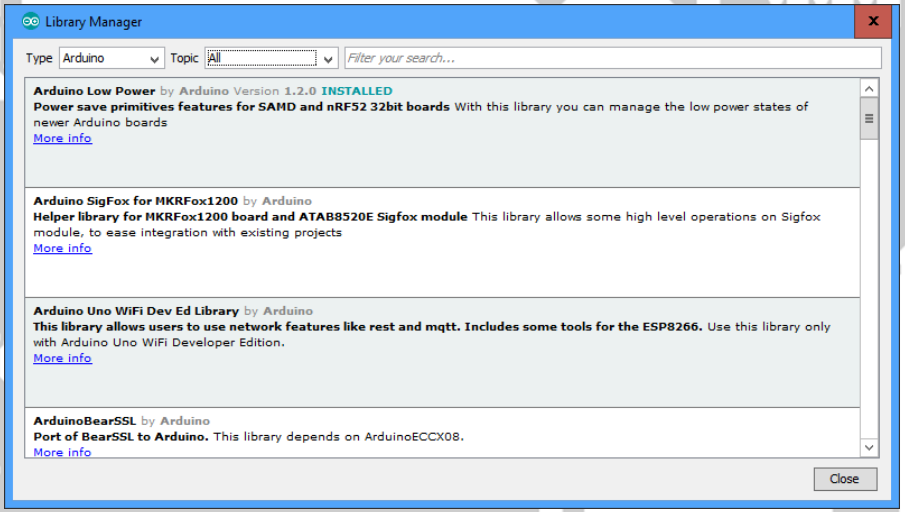
Arduino Libraries

- Supported Libraries
  - The Library Manager



  - Examples
  - DHT, SPI, Adafruit_Sensor, SoftwareSerial, SD, Wire, EEPROM, DigitalIO, RH_RF95,

- "Private Libraries"

Tonight's Goals

- Info a little about libraries
- Give you a skeleton to create your own library
- Show a simple example of how I use my own library

Elements of a Library

- Code
  - .h file – header file – declarations
  - .cpp file – procedural C++ code
- library.properies file – library metadata

My Library – drmlib

drmLib.h

```
/* drmLib.h - Utility Library for drm */
. . .
// Doug's Data structures, constants and enums
#define ER_BADID -20 // bad ID on requested operation

. . .


// Routines in this Library
int drmBcd2Dec(int inbyte);
unsigned short drmSerialNo();
char * drmSAMSerialNo(char *outbuf, int buflen); // New 20160902
void drmStartPrint(const char *drmversion);
void drmPrtLead0(long in, int places);
void printTime(unsigned long milli_time);
```

My Library – drmlib (cont)

library.properties file

```
name=drmLib
version=2.1.0
author=drm
maintainer=drm
sentence=Doug's utility library.
paragraph=General support/utility routines for Arduino programming
category=Other
url=https://github.com/douman/Arduino_Play
architectures=*
```

My Library – drmlib (cont)

```
/*
 drmLib.cpp - Utility Library for drm
 Created by drm 20151213
 History
V2.0 --> adding RTC routines to this library, did not work (see comments)
 V2.1 --> ifdef(ing) for M0 cases
 V2.2 --> more on SAM serialno
*/
#include "drmLib.h"
// return the the byte BCD encoded value as a int
int drmBcd2Dec(int inbyte)
{
 return (((inbyte & 0b11110000)>>4)*10 + (inbyte & 0b00001111));
}
// Printout the standard drm Arduino start message
void drmStartPrint(const char *drmversion)
{
 Serial.print(drmversion);
 Serial.print(F(" SN#"));
 Serial.println(drmSerialNo());
 Serial.print(F("Compiled-> "));
 Serial.print(F(__DATE__));
 Serial.print(F(" "));
 Serial.println(F(__TIME__));
}
```

KiCad Update

KiCad 5 – A New Generation

- *2018-07-22*
- Almost a year after the release of KiCad 4.0.7, the KiCad development team is proud to present a new and improved KiCad 5.0 release!
- The stable release version 5.0.0 is made from the stable 5.0 branch.
- KiCad binaries should be available now or in the very near future for download for Windows, macOS and Linux. See the download page for guidance.
- Instructions for packagers can be found on the download page describing how to build from source . Below are also some packaging packaging related changes since the 4.0 releases.
- The official KiCad libraries have also seen a lot of improvement in management, style and consistency by the librarians. Read more about this on the new library section on the website.