ENHANCEMENT PROGRAM: WEEK 2 DAY 1

How to create your own libraries in Adruino?

What does a library contain?

Header File(.h)*: library's definitions

Source Code(.cpp)*: code for the library

Keywords(.txt): contains the keywords used in the library.

Readme file(.txt): other information about the library.

Examples (.ino): codes that use the library, that can be referred to.

*- these are compulsory. The remaining files are good to have in the library, but the library will still work fine without them.

H file:

1. Star with #ifndef. It is called “if not defined” and it checks to make sure that a library with this name does not exist. This is usually paired with a #endif at the end of program. This setup is called **Include Guard**.

2. After checking for duplicates, the library has to be defined. Use #define libraryname.

3. Since we don’t want to define functions like digitalWrite etc, we then put #include “Arduino.h”.

4. A class has to be created for all functions that are part of this library.

5. Constructor. It has the same name as the class that it is a part of. In the class, declare a constructor with the desired parameters.

6. After the constructor, define all the functions required in the library under public.

7. Under private variables, declare the parameters you used in the constructor but with an underscore before it, to denote that they are private.

Save the file with extension .h, with type as C++ source file.

Source code:

1. First include Arduino, then the header file you just created.

```
#include<Arduino.h>

#include<libraryname.h>
```

2. In the constructor, declare the pinModes. Equate the parameters of constructor to the ones in private.

3. Define the functions previously mentioned.

Save this file with the extension .cpp, with type as C++ source file.

Keywords:

i) Name of the library (also the name of class): KEYWORD1
ii) Name of all the functions used: KEYWORD2

Readme: Include all other details about the library.

Examples: Include a few example code files that use your header file.