

## Lab 5: Using A Menu

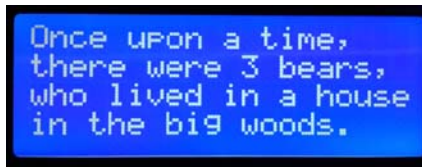
[7 marks] Write a program with the following nested menu system, and the code to carry out the items indicated in the menus:

```
Main Menu
1.  LEDs
2.  LCD
```

```
LED Menu
1.  Red On
2.  Yellow On
3.  Green On
4.  Red Off
5.  Yellow Off
6.  Green Off
7.  All On
8.  All Off
M.  Main Menu
```

```
LCD Menu
1.  Clear LCD Screen
2.  Display LCD Story
M.  Main Menu
```

Here's the "LCD Story":



```
Once upon a time,
there were 3 bears,
who lived in a house
in the big woods.
```

### Code Submission: [3 marks]

Place your "main.c" file for this project, clearly identified as yours, in the Lab 4 Dropbox so your instructor can grade your descriptive file headers, your code documentation and your use of libraries, and, where appropriate, discuss your coding techniques. Also include your "LCD\_Lib.c" library.

Hints:

1. Your menus will be displayed using a number of constant strings. If you use "carriage return/line feed" at the end of each, you should be in the right place for a new line, so you shouldn't have to repetitively locate your position on the screen. (Carriage return is *escape 0x0d* or, in a string, `\r`; line feed is *escape 0x0a* or, in a string, `\n`.)
2. With nine items available in the LED Menu, you'll probably want to use a "switch". You can use ASCII characters in your switch. For example, you could use *case '1'*.
3. One good way to handle nested menus is to use the exit selection (in this case, 'M') as the condition for staying in the current loop, rather than treating it as one of the menu selections.
4. Your program should respond to both 'm' and 'M'.