Interfacing LCD with Arduino using AVR-GCC

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***Abstract*—This manual shows how to interface an Arduino to a 16×2 LCD display using AVR-GCC. This framework provides a useful platform for displaying the output of AVR-Assembly programs.**

1 Components

Component	Value	Quantity
Breadboard		1
Arduino	Uno	1
LCD	16×2	1
Jumper Wires		20

TABLE 0

2 Display Number on LCD

1. Plug the LCD in Fig. 2 to the breadboard.
2. Connect the Arduino pins to LCD pins as per Table 2.
3. Download the following directory from

```
svn checkout https://github.com/gadepall/
    arduino/trunk/avr-gcc/lcd/codes
```

and execute **main.c**

4. Modify the above code to display a string.

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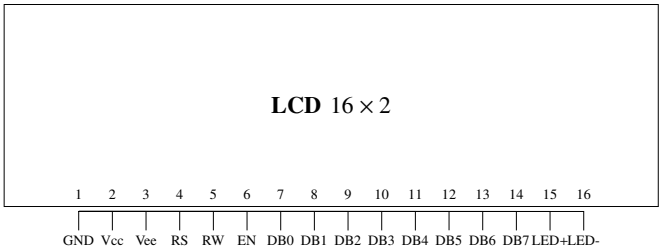

Fig. 2: LCD

TABLE 2: Arduino to LCD Pin Connection.

Arduino Pins	LCD Pins	LCD Pin Label	LCD Pin Description
GND	1	GND	
5V	2	Vcc	
GND	3	Vee	Contrast
D8	4	RS	Register Select
GND	5	R/W	Read/Write
D9	6	EN	Enable
D10	11	DB4	Serial Connection
D11	12	DB5	Serial Connection
D12	13	DB6	Serial Connection
D13	14	DB7	Serial Connection
5V	15	LED+	Backlight
GND	16	LED-	Backlight

5. Modify the above code to obtain a decade counter so that the numbers from 0 to 9 are displayed on the lcd repeatedly.
6. Repeat the above exercies to display a string on the first line and a number on the second line of the lcd.
7. Write assembly routines for driving the lcd.