```c
// Serial Example
// Jason Losh

//-----------------------------------------------------------------------------
// Hardware Target
//-----------------------------------------------------------------------------

// Target Platform: EK-TM4C123GXL Evaluation Board
// Target uC:       TM4C123GH6PM
// System Clock:    40 MHz

// Hardware configuration:
// Red LED:
//   PF1 drives an NPN transistor that powers the red LED
// Green LED:
//   PF3 drives an NPN transistor that powers the green LED
// UART Interface:
//   U0TX (PA1) and U0RX (PA0) are connected to the 2nd controller
//   The USB on the 2nd controller enumerates to an ICDI interface and a virtual COM port
//   Configured to 115,200 baud, 8N1

//-----------------------------------------------------------------------------
// Device includes, defines, and assembler directives
//-----------------------------------------------------------------------------

#include <stdint.h>
#include <stdbool.h>
#include <string.h>
#include "tm4c123gh6pm.h"
#include "clock.h"
#include "gpio.h"
#include "uart0.h"

// Pins
#define RED_LED PORTF,1
#define GREEN_LED PORTF,3

//-----------------------------------------------------------------------------
// Subroutines
//-----------------------------------------------------------------------------

// Initialize Hardware
void initHw()
{
    // Initialize system clock to 40 MHz
    initSystemClockTo40Mhz();

    // Enable clocks
    enablePort(PORTF);

    // Configure LED and pushbutton pins
    selectPinPushPullOutput(GREEN_LED);
    selectPinPushPullOutput(RED_LED);
}

//-----------------------------------------------------------------------------
// Main
//-----------------------------------------------------------------------------

int main(void)
{
    // Initialize hardware
    initHw();
    initUart0();

    // Setup UART0 baud rate
    setUart0BaudRate(115200, 40e6);

    // Display greeting
```

```
70      putsUart0("Serial Example\r\n");
71      putsUart0("Press '0' or '1'\r\n");
72      putcUart0('>');
73
74      // For each received character, toggle the green LED
75      // For each received "1", set the red LED
76      // For each received "0", clear the red LED
77
78      while(true)
79      {
80          char c = getcUart0();
81          setPinValue(GREEN_LED, !getPinValue(GREEN_LED));
82          if (c == '1')
83              setPinValue(RED_LED, 1);
84          if (c == '0')
85              setPinValue(RED_LED, 0);
86      }
87  }
88
```