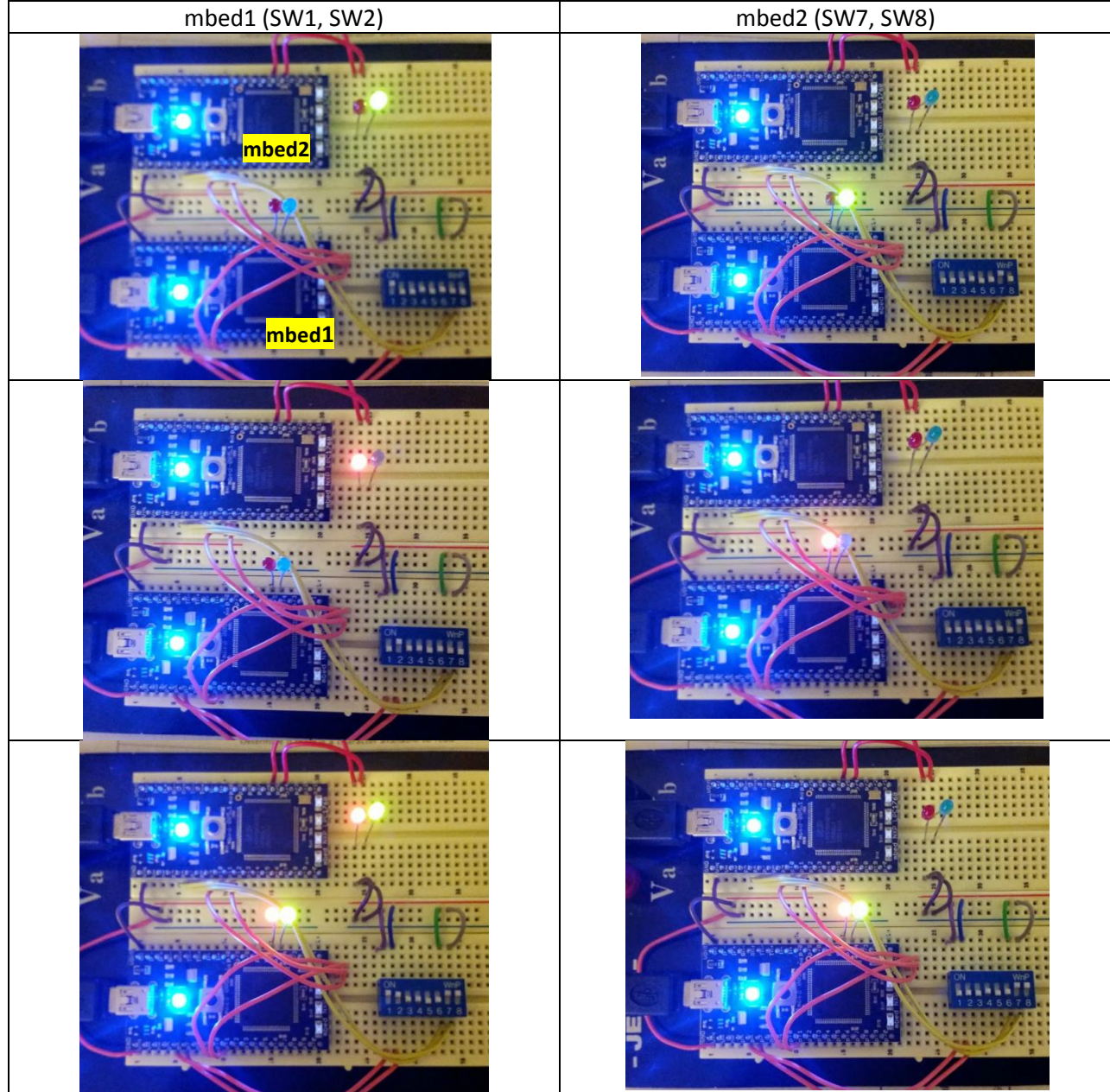


4357. Embedded Firmware Essentials
Homework #3
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Source

```
//  
// example 7.9  
// Async communication  
  
#include "mbed.h"  
  
Serial async_port(p9, p10);  
DigitalOut red_led(p25);  
DigitalOut green_led(p26);  
DigitalOut strobe(p7);  
DigitalIn switch_ip1(p5);  
DigitalIn switch_ip2(p6);  
  
char switch_word;  
char recd_val;  
  
int main()  
{  
    async_port.baud(9600);  
  
    while (1) {  
        switch_word = 0xa0;  
        if (switch_ip1 == 1)  
            switch_word |= 0x01;  
        if (switch_ip2 == 1)  
            switch_word |= 0x02;  
  
        strobe = 1;  
        wait_us(10);  
        strobe = 0;  
        async_port.putc(switch_word);  
  
        if (async_port.readable() == 1)  
            recd_val = async_port.getc();  
  
        //  
        red_led = 0;  
        green_led = 0;  
        recd_val &= 0x03;  
  
        if (recd_val == 1)  
            red_led = 1;  
        if (recd_val == 2)  
            green_led = 1;  
        if (recd_val == 3) {  
            red_led = 1;  
            green_led = 1;  
        }  
    }  
}
```

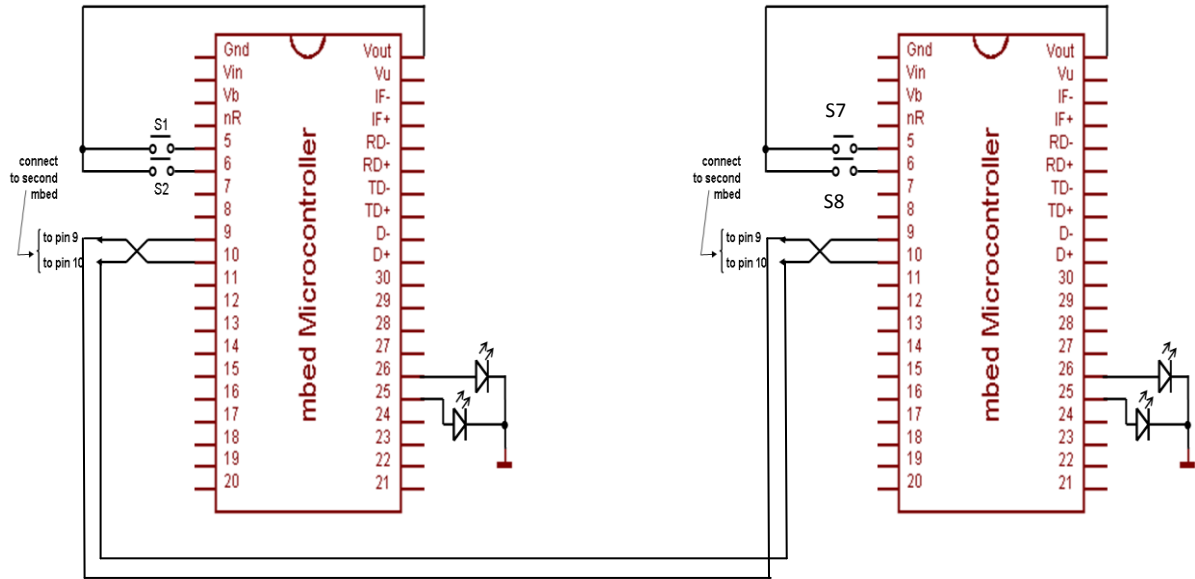
Pictures working with program for bidirectional data transfer between two mbed UARTs



mbed – Serial class

```

Serial(PinName tx, PinName rx, const char *name = NULL)
void attach(T* tptr, void(T::*)(void) mptr, IrqType type = RxIrq)
void baud(int baudrate)
void format(int bits = 9, Parity parity = SerialBase::None, int stop_bits = 1)
int readable()
void send_break()
void set_flow_control(Flow type, PinName flow1 = NC, PinName flow2 = NC)
    
```



Total spent hours: 4.5 hours

- mbed hardware setting and testing (SPI, I2C, UART): 1.5
- mbed library review: 2
- Report: 1