Embedded Microcontroller Programming

Homework #3

This homework requires you to become familiar with using the 8051's internal timers and basic I/O port capabilities.   As we discussed in class, the 8051 has two independent internal timers, timer0 and timer1. Each of these can be setup to operate independently in several different operating modes. For this homework assignment, it is easiest to just use one of the two timers

The homework assignment is to use a timer to generate a serial data sequence formatted as 9600 baud, 1 start bit, 1 stop bit, and 8 data bits. The waveform should be like the one shown in the text.

Your homework is to write a program which calls a function called sendserial. This function will send the value which is stored in the accumulator out as serial data on port pin P3.1. This is the same pin that is used by the 8051's internal serial port that we will look at in the next section.

Your main program should consist of a loop that repeatedly sends out a string such as "Hello I am here " or something else of your choice. To test your program, load it into the SDK then run the program. Connect a serial cable from the SDK's DB25 connector to your PC's serial port and you should be able to see your character string displayed on your terminal program.

Submit your asm and hex files for grading.